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S.C. SUPREME COURT

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION

Clyde Marcus Jones, II, on behalf of himself and all others similarly situated,

Plaintiff,

v.

Duke Energy Corporation and Duke Energy Carolinas, LLC,

Defendants.

Civil Action No.: 3:24-cv-01281-MGL

DUKE ENERGY DEFENDANTS' MEMORANDUM IN OPPOSITION TO PLAINTIFF'S MOTION FOR CLASS CERTIFICATION

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I. INTRODUCTION

In his motion seeking class certification, named plaintiff Clyde Marcus Jones, II ("Jones") utterly fails to justify that result. ECF No. 82. To be sure, Jones is poorly positioned to bring any of the causes of action in his four-count Amended Complaint on his *own* behalf. But his effort to do so on behalf of a putative class of thousands of waterfront property owners—with wide variations in their property rights, in their use of their properties, in their "use and enjoyment" of Lake Wateree, in the nature and extent of any alleged impact from PCBs, and in their knowledge relevant to the statute of limitations—crashes into the requirements of Rule 23 at every turn.

Jones is unable to satisfy the evidentiary burden imposed on him by Rule 23. Most strikingly, Jones marshals no expert testimony—he instead refers to unknown opinions by potential experts who offer no reports. At the same time, he ignores the substance of relevant and persuasive authority establishing that a PCB-contamination case such as this cannot proceed as a class action. For the myriad independent reasons detailed below—reasons supported by evidence, including detailed and uncontested expert opinions—Defendants Duke Energy Carolinas, LLC and Duke Energy Corporation (collectively, the "Duke Energy Defendants" or "Defendants") ask the Court to deny Jones's Motion.

II. BACKGROUND

Jones's lawsuit stages a baseless and untimely attack on a public health program that, for nearly a century, protected South Carolina residents from contracting malaria and other mosquito-borne illnesses. From 1923 until 2016, Duke Energy Carolinas, LLC (for most of that time period known as "Duke Power") provided mosquito control along the shoreline of five reservoirs in North Carolina and South Carolina, including Lake Wateree.[1] This mosquito control program ("MCP"),

[1] As the Duke Energy Defendants have previously pointed out, Duke Energy Corp. has no connection to any events relevant to Jones's claims. *See* Defs.' Mot. to Dismiss the Am. Compl. 1 n.1, ECF No. 39-1.

which began as a voluntary public health measure, was ultimately required by state law and at all times used government-approved larvicides.

A. The Mosquito Problem Generally

Prior to World War II, malaria was a serious problem in the southeastern United States. *See* **Ex. 1** at DUK_00004535. In the early 1900s, the disease became "epidemic" around the new reservoirs that power companies were creating to support hydroelectric stations. Am. Compl. ¶¶ 75-76. In 1923, in response to the regional spread of malaria by the mosquito *Anopheles quadrimaculatus*, the Duke Energy Defendants initiated a mosquito larviciding program on the company's hydroelectric impoundments in the Catawba River basin (hereinafter, the "Mosquito Control Program" or "MCP"). *See* Ex. 1 at DUK_00004535-4536; Ex. 2 at DUK_00002582. The MCP was developed and led by a South Carolina physician and county public health inspector, Dr. Frank Moon Boldridge, Jr., who had gained familiarity with malaria from his work as a U.S. Army doctor during World War I. *See* Ex. 1 at DUK_00004535-4536.

Although malaria was no longer considered a major disease threat in North America by the mid-to-late twentieth century, various mosquito species breeding in and around Duke Power's hydroelectric impoundments continued to have the potential to spread malaria, as well as other human diseases such as Dengue and yellow fever. *See* Ex. 2 at DUK_00002582. Additionally, South Carolina had promulgated a regulation that obligated impoundment operators to control mosquito populations that could interfere with human activities or public health.[2] *Id*. Thus, the MCP continued for 93 years, until its decommissioning in 2016. Am. Compl. ¶ 74.

[2] South Carolina Code of Regulations 61-46—promulgated in 1946, last amended in 1972, and repealed in 2016—declared that the "accumulation of water in which mosquito larvae may breed" constituted a public health nuisance, and failure of the person(s), firm or corporation responsible for the continuance of a public health nuisance to abate it within a reasonable length of time following a written notification from the area's health director was a misdemeanor. S.C. Code Ann. Regs. 61-46, §§ 1(c), 4, 5 (2015); *see* 40 S.C. Reg. 4552 (April 22, 2016).

B. State-of-the-Art Mosquito Control

For the first several decades of the MCP, the major larviciding material used was fuel oil. Ex. 1 at DUK_00004536. This was a standard mosquito treatment that was approved and recommended by public health agencies. *See* Ex. 3 at DUK_00000164 ("No. 2 fuel oil has been found to be the killing agent in the oil mixtures recommended."); ECF No. 39-2, "Proceedings Workshop on Mosquito Control in North Carolina," at 41, 131 (notations by North Carolina and Virginia government representatives that "No. 2 fuel oil is the larvicide of choice").

The use of fuel oil continued as the main larvicide used in the program until 1989, when it was replaced with liquid *Bacillus thuringiensis israelensis* ("Bti"), a biological control agent. Ex. 1 at DUK_00004536. Bti was the primary larvicide through the MCP's decommissioning in 2016, along with other EPA-registered larvicide materials including specifically the immature mosquito growth regulator Altosid and a monomolecular oil film product. *See* Ex. 2 at DUK_00002586; Ex. 4 at DUK_00004217; Ex. 5 at DUK_00004465; Ex. 1 at DUK_00004541.

C. Public Knowledge of the MCP

The MCP was known to, and welcomed by, the public and in particular the residents of the waterfront communities of the six Duke Power reservoirs in the Carolinas where the MCP was implemented. Although Duke Power received complaints and requests for assistance concerning mosquitoes, Duke Power did not receive complaints about the MCP. Waterfront residents wanted—and expected—Duke Power to suppress mosquito breeding opportunities near their properties. *See, e.g.*, Ex. 6, DUK_00000471; Ex. 7, DUK_00000555-556; Ex. 8, William Beckham[3] Dep. Tr. 30:1-6. Indeed, Jones concedes that complaints about mosquitoes around Lake

[3] William Beckham and his brother Henry Beckham worked in the MCP in the 1960s/1970s. Both individuals provided deposition testimony pursuant to a subpoena after Plaintiff identified them as witnesses. *See* Ex. 8, William Beckham Dep. Tr. 21:2-18; Ex. 10, Henry Beckham Dep. Tr. 20:15-19.

Wateree are a regular occurrence, although he cannot recall any complaints about the MCP during its tenure. *See* Ex. 9, Jones Dep. Tr. 212:20-213:11; 214:2-13.

Moreover, MCP activities were a common sight for Lake Wateree residents in the summer months, with larvicides sprayed by MCP workers onto the surface of the lake during the daytime from boats equipped with sun and rain awnings. *See* Ex. 1 at DUK_00004540; Ex. 10, Henry Beckham Dep. Tr. 21:4-7, 22:3-8, 22:18-23:4; Ex. 8, William Beckham Dep. Tr. 54:22-55:2. In particular, the fact that the MCP originally used fuel oil was widely known decades ago. Indeed, and as one of the exhibits to Jones's brief notes, the fact that Duke Power's MCP involved spraying used oil became a focus of negative press and public concern in 1997, well over a quarter century before Jones filed suit. ECF No. 82-2, Ex. E at 3. Finally, Jones's own father worked for Duke Power and personally sprayed the lake as part of the MCP in 1968. *See* Ex. 10, Henry Beckham Dep. Tr. 45:5-46:4, 50:25-51:7; Ex. 8, William Beckham Dep. Tr. 45:6-9, 46:7-12.

D. PCBs in South Carolina Lakes and Waterways: A Well-Known Problem With Many Potential Sources

The crux of Jones's claims is his allegation that the fuel oils used by Duke Power in implementing the MCP on Lake Wateree contained PCBs. He alleges that PCBs from the MCP have interfered with his purported riparian rights as a waterfront property owner and caused a diminution in the value of his property. But the path to proving his theory—and it is only that—will be far from straightforward, and as will be seen below, the litigation of his claims will present numerous issues that cannot be cohesively tried on behalf of a class.

A threshold difficulty for Jones is that PCB contamination of South Carolina waterways is an old problem with many potential causes. As Jones acknowledges, the sources of PCBs in the environment are vast. *See, e.g.*, Am. Compl. ¶ 42. Jones notes that PCBs were first reported in the ecological environment of South Carolina in 1976—not because of the MCP, but rather due to an industrial spill near Lake Hartwell. *Id.* ¶ 45. Thereafter, "[b]y the early 1990s, information came

to light indicating that bodies of water in South Carolina, including Lake Wateree, had been contaminated by PCBs." *Id.* ¶ 56. Subsequently, a 2009 EPA study detected PCBs in South Carolina waterways, which resulted in the South Carolina Department of Health and Environmental Control implementing "heightened monitoring" of these waterways. *Id.* ¶¶ 61-62. By 2014, Lake Wateree was included in South Carolina's publicly available list of impaired waters for PCB levels in fish.[4]

Thus, detection of PCBs in Lake Wateree is hardly a smoking gun indicating that the oils used by the MCP contained PCBs; it is instead an entirely ordinary finding in a world where PCB contamination from many sources is quite common. Even worse for Jones and the putative class, there is actually very good reason to believe that the MCP was *not* responsible for the alleged PCB contamination: the Duke Energy Defendants' PCB expert, Dr. Butler, has found that "the lack of PCBs detected in fish collected from other water bodies that were treated as part of the MCP" indicates there is "no correlation" between levels of PCB contamination and the historical presence of a mosquito control program and "no reason to assume that any PCBs in fish collected from Lake Wateree resulted from the MCP." Ex. 11, Butler Expert Report at 13, 16. As he points out, "there are many potential sources of PCBs and the highest levels in fish were not in lakes where the MCP was conducted but were instead in the vicinity of the numerous known PCB sources in the area . . . ." *Id.* at 14. Those other known PCB sources include, just for example, the Rock Hill Chemical Company, upstream of Lake Wateree, which was once a solvent reclamation facility and is now a Superfund site. *Id.* at 9-10. It "produced reclaimed oil from waste fluids" and generated widespread PCB contamination. *Id.* at 10. Other potential upstream sources of PCBs identified by Dr. Butler

[4] *See* State of South Carolina Integrated Rep. for 2014, Part I: Section 303(d) List of Impaired Waters at 15 (available at https://des.sc.gov/sites/des/files/Documents/BOW/WaterQuality/303dList2014.pdf).

include a Superfund site, multiple former mills, a landfill, and discharges from wastewater treatment plants associated with a large urban area. *Id.* at 10-12.

E. The Lake Wateree Community

The diversity of PCB sources in the environment is matched by the diversity of the Lake Wateree Community itself. Lake Wateree is the largest of the Catawba-Wateree Lakes in South Carolina, spanning across three separate counties—Fairfield, Kershaw, and Lancaster—and covering 13,025 acres and 216 miles of shoreline. *See* Ex. 12, A&M Expert Report ¶¶ 39-40. There are nearly 2,800 waterfront properties at Lake Wateree, including both unimproved (vacant) and improved properties—with land use including different types of residences, agricultural properties, commercial properties, and exempt properties (*e.g.*, those owned by religious organizations). *Id.* ¶ 55. Residential properties range from "single family homes on rural acreage, single family homes in platted subdivisions, estate homes in private gated communities, manufactured or modular homes, RV parks, mobile homes on individually owned parcels, and mobile homes in mobile home parks." *Id.* ¶ 82. Commercial properties include offices and several marinas. *Id.* ¶¶ 65, 77.

III. LEGAL STANDARD

As this Court has stressed, the burden of proving class certification rests entirely on Mr. Jones, the named Plaintiff. *See KBC Asset Mgmt. NV v. 3D Sys. Corp.*, No. 0:15-CV-2393-MGL, 2017 WL 4297450, at *1 (D.S.C. Sept. 28, 2017) (reiterating that "[t]he Fourth Circuit has long 'stressed . . . it is not the defendant who bears the burden of showing that the proposed class does not comply with Rule 23, but that it is the plaintiff who bears the burden of showing that the class does comply with Rule 23.'") (quoting *Thorn v. Jefferson-Pilot Life Ins. Co.*, 445 F.3d 311, 321 (4th Cir. 2006)).

Class certification is a two-step process. First, a plaintiff must establish all four of the requirements under Federal Rule of Civil Procedure 23(a), commonly referred to as (1)

"numerosity of parties," (2) "commonality of factual or legal issues," (3) "typicality of claims and defenses of class representatives," and (4) "adequacy of representation." *Thorn*, 445 F.3d at 318. This necessarily requires that the "class representative . . . be part of the class and possess the same interest and suffer the same injury as the class members." *KBC Asset Mgmt. NV*, 2017 WL 4297450, at *1 (quoting *Amchem Prod., Inc. v. Windsor*, 521 U.S. 591, 625-26 (1997)).

Second, a plaintiff must establish one of three bases for certification under Rule 23(b). *See Thorn*, 445 F.3d at 318. Here, Jones pursues certification of a damages class under Rule 23(b)(3), meaning he must show "questions of law or fact common to class members predominate over any questions affecting only individual members, and that a class action is superior to other available methods for fairly and efficiently adjudicating the controversy." Fed. R. Civ. P. 23(b)(3). The two requirements set forth in Rule 23(b)(3) are commonly referred to as "predominance" and "superiority." Of particular importance here is the "predominance" requirement, which "tests whether proposed classes are sufficiently cohesive to warrant adjudication by representation." *Thorn*, 445 F.3d at 319 (quoting *Gariety v. Grant Thornton, LLP*, 368 F.3d 356, 362 (4th Cir. 2004)). Court have long held that the predominance criterion "is even more demanding" than the requirements of Rule 23(a). *KBC Asset Mgmt. NV*, 2017 WL 4297450, at *2.

Importantly, a plaintiff seeking class certification must demonstrate "actual, not presumed" compliance with Rule 23, *Gen. Tel. Co. of Sw. v. Falcon*, 457 U.S. 147, 160 (1982), "and must do so with 'evidentiary proof.'" *In re Zetia (Ezetimibe) Antitrust Litig.*, 7 F.4th 227, 234 (4th Cir. 2021) (quoting *Comcast Corp. v. Behrend,* 569 U.S. 27, 33 (2013)); *see Wal-Mart Stores, Inc. v. Dukes*, 564 U.S. 338, 350 (2011) ("Rule 23 does not set forth a mere pleading standard. A party seeking class certification must affirmatively demonstrate his compliance with the Rule.").

Accordingly, a district court must not simply "accept the allegations of a complaint at face value in making class action findings." *E&G, Inc. v. Mount Vernon Mills, Inc.*, No. 6:17-CV-318-

TMC, 2019 WL 4034951, at *4 (D.S.C. Aug. 22, 2019) (quoting *Gariety*, 368 F.3d at 365). Instead, the court "must take a 'close look,' conduct a 'rigorous analysis,' and 'make specific' 'findings' with respect to class actions." *Id.* (quoting *Gariety*, 368 F.3d at 365); *see Tillman v. Highland Indus., Inc.*, No. 4:19-CV-02563-SAL, 2021 WL 4483035, at *3 (D.S.C. Sept. 30, 2021). Often, "that 'rigorous analysis' will entail some overlap with the merits of the plaintiff's underlying claim. That cannot be helped." *Wal-Mart Stores, Inc.*, 564 U.S. at 351; *see Falcon,* 457 U.S. at 160 ("[S]ometimes it may be necessary for the court to probe behind the pleadings before coming to rest on the certification question."); *Gariety,* 368 F.3d at 366 ("[W]hile an evaluation of the merits . . . is not part of a Rule 23 analysis, the factors spelled out in Rule 23 must be addressed through findings, even if they overlap with issues on the merits.").

IV. ARGUMENT

Jones seeks certification of a class that includes thousands of "persons or entities who currently have ownership of any real waterfront property on Lake Wateree." *See* FAC at ¶¶ 121, 124. In Jones's view, each of these class member's claims can be litigated with common proof going to common issues. But this jurisdiction has already found a strikingly similar PCB contamination case to be wholly unsuitable for class certification in 2021. *See generally Tillman*, 2021 WL 4483035. Notably, Jones cites *Tillman* for black-letter class-certification law, but fails to grapple with its reasoning or holdings.

As will be seen, Jones's putative class action has all the same problems that were present in *Tillman*—and then some. Defendants' focus below is primarily on the reasons Jones has not satisfied, and can never satisfy, Rule 23(b)(3)'s predominance requirements. Contrary to the requirements of Rule 23(b)(3), and just as in *Tillman*, individual issues will predominate when litigating elements of each of Jones's causes of action. Further, individual issues will predominate regarding (a) the nature and extent of each class member's riparian rights, if any, (b) the

methodology for assessing damages across the class; and (c) Defendants' statute of limitations defense. This is not to say, however, that Defendants concede that Jones has satisfied all the *other* class certification requirements. As will be noted below, Jones's peculiar problems as a class representative also prevent him from establishing that his claims are common to, and typical of, the claims of the putative class.

A. The *Tillman* Precedent Generally

Tillman v. Highland Industries, Inc. provides compelling precedent for denying class certification given its striking similarities to the case at hand.

Tillman involved a property owner in Cheraw, South Carolina who alleged Highland Industries, Inc. was responsible for contaminating properties located near its manufacturing site (the "Site") with PCBs. 2021 WL 4483035, at *1. The company who owned the Site before Highland acquired it had undisputably used PCBs in their operation. *Id.* Thus, Tillman alleged the Site was contaminated with PCBs when Highland acquired it in 1988, and that Highland's subsequent use of a stormwater discharge pipe, failure to prevent contaminant migration, and lack of response to flooding risks allowed those PCBs to spread onto neighboring properties. *Id.*

Tillman brought suit against Highland for negligence, trespass, and nuisance, individually and on behalf of a proposed class of approximately 90 property owners within a defined geographic area. *Id.* at *1-2, *5. The central issue before the court was whether the case could proceed as a class action. Tillman, in an attempt to simplify such a highly individualized matter, argued class certification was appropriate because the contamination stemmed from a single source (the Site) and a single mode of transport (surface water). *Id.* at *5. Highland opposed class certification for numerous reasons, but based its defense primarily on Tillman's failure to establish Rule 23(b)(3)'s predominance requirement.

The court analyzed Tillman's negligence, trespass, and nuisance claims element-by-element in evaluating whether Tillman had satisfied her burden as to the predominance requirement. *Id.* at *9-15. In a detailed and thorough opinion, the court denied class certification, explaining that individual questions of causation, liability, and damages predominated over common issues as to each claim. Specifically, the court repeatedly stressed that each plaintiff would need to demonstrate, through individualized proof, that their property contained PCBs, that those PCBs came from the Site as opposed to some other source, and that said contamination was caused by Highland to prevail on their claims. *See id.* at *11-15. As explained below, these same individual inquiries are necessary of the purported class members here.

B. Here, as in *Tillman*, Individual Issues Will Predominate For Each Cause of Action

To satisfy his burden under the predominance requirement of Rule 23(b)(3), Jones cannot simply point to a few issues that are common to the class. Instead, he bears the burden of showing that *each element* of his causes of action is subject to common proof. *See id.* at *9 ("For purposes of the predominance analysis, the court looks to *each element* and asks whether Plaintiff has met her burden of showing that the element is subject to common proof.") (emphasis added). Jones fails to make this required showing with respect to *all four* of his remaining causes of action.

1. Trespass

In *Tillman*, waterfront property owners tried, and failed, to obtain class treatment of a trespass claim based on waterborne PCB contamination. Plaintiffs here—who have not even begun to generate the trespass evidence that the *Tillman* court found to be required—present an even easier case for denying class certification.

There are two relevant questions. First, what elements must Jones (and the class) prove to show trespass? And second, has Jones shown that he can in fact prove all these elements of trespass *at all*—much less *class-wide*, in a way that will avoid individualized issues predominating?

a. For Trespass, the Class Must Show That PCBs Physically Invaded Their Real Property—Purported Riparian Rights Are Irrelevant

To prevail on a cause of action for trespass via PCB contamination, Jones and the class must show that real property they exclusively possessed has been physically invaded by PCBs. This is plainly the law in South Carolina, where "trespass is any intentional *invasion* of the plaintiff's interest in the *exclusive possession* of his property[.]" *Hedgepath v. Am. Tel. & Tel. Co.*, 559 S.E.2d 327, 337 (S.C. Ct. App. 2001) (emphasis added). Thus, there are three elements of the claim: (1) an affirmative act by defendant; (2) an intentional *invasion of the land*; and (3) the harm caused is the direct result of the *invasion*. *See Winley v. Int'l Paper Co.*, No. 2:09-CV-2020, 2012 WL 13047989, at *6 (D.S.C. Oct. 23, 2012) (citing *Snow v. City of Columbia*, 409 S.E.2d 797, 802 (S.C. Ct. App. 1991)).

Although Jones tries to wave away these elements by discussing trespass in the context of riparian rights, a trespass to riparian rights is a legal non sequitur. This is so because under the common law, "the owners of the banks have *no right to the water* of navigable rivers," *Shively v. Bowlby*, 152 U.S. 1, 32 (1894) (emphasis added) (quoting *Carson v. Blazer*, 2 Binn. 475, 477 (Pa. 1810)). Riparian rights are not possessory rights at all, they are "usufructuary"—*i.e.*, they are only rights to *use* a resource (navigable water), not to exclude others from it (the essence of a trespass claim). *See Jowers v. S.C. Dep't. of Health & Env't Control*, 815 S.E.2d 446, 452 (2018) (riparian rights allow "reasonable use" of the water adjacent to a property) (citations omitted); *Dycus v. Sillers*, 557 So.2d 486, 501-02 (Miss. 1990) ("[I]n its ordinary or natural state [public] water is neither land, nor tenement, nor susceptible of absolute ownership. It is a movable wandering thing and admits only of a transient, usufructuary property.") (citation omitted); *see also Stratton v. Mount Hermon Boys' School*, 216 Mass. 83, 84-85 (1913), *cited in Great River Hydro, LLC v. Mayhew Steel Prods., Inc.*, 2022 WL 1320386, at *5 (Mass. Land Ct. 2022) (riparian rights are "incident to the title to land, [but] *there is no right of property in such water in the sense that it*

can be the subject of exclusive appropriation and dominion. The only property interest in it is usufructuary.") (emphasis added).

Because neither Jones, nor the class, can "exclusively possess" the water that forms the basis of their alleged riparian rights, South Carolina affords them no claim for trespass to their purported riparian rights. Just as plaintiffs cannot bring a trespass claim against a canoeist floating past their property in navigable water that plaintiffs do not own, they cannot bring a trespass claim based on PCB molecules allegedly doing exactly the same thing. For trespass to lie, the canoeist must step onto and thus invade plaintiff's exclusively possessed land, or the PCB molecules must, at the very least, be deposited there.

b. Jones Has Abandoned Any Claim of Physical Invasion

Although Jones states at one point that his property was invaded by contaminated water,[5] he expressly concedes that he "has *not* alleged injuries from direct contamination to his property."[6] Accordingly, in addition to being insufficient as a matter of blackletter trespass law, Jones's claims are not "typical" of any viable trespass that might be asserted by a class member. *See generally McLaurin v. Prestage Foods, Inc*., 271 F.R.D. 465, 476 (E.D.N.C. 2010) (Under the requirements of Rule 23(a), a claim must arise **"**from the same event, practice, or course of conduct that gives rise to the claims of other class members," *and* it must be "based on the same legal theory as those of the other members.").

Why has Jones abandoned a claim of trespass based on physical invasion? Although it is hard to be sure, *apparently Jones tested his property and simply found no PCBs*. In his deposition, Jones acknowledged that his property was indeed tested for the presence of PCBs. *See* Ex. 9, Jones Dep. Tr. 160:7-162:19. He said that this testing occurred after his "conversation with counsel," and

[5] Ex. 13, Jones's Resp. to Interrog. No. 12.
[6] Ex. 13, Jones's Resp. to Interrog. No. 9 (emphasis added).

it was his "assumption" that the testing was done for the purposes of the litigation. *Id.* at 161:14-162:19. But even though he was "curious" about the results, Jones did not "recall any results" of that testing and had never seen "any paperwork related" to the testing. *Id.* at 162:20-163:3; 164:8-12. Jones could, of course resolve this mystery by producing the results of this PCB testing, which were requested by the Duke Energy Defendants in discovery, but he has refused to do so.

c. Trespass Cannot Be Shown on a Class-wide Basis with Common Proof

Unfortunately for the putative class, *even if* Jones alleged and could prove a physical invasion of his *own* property, he offers the Court no clue as to how the presence of invasive PCBs on all the *other* class members' properties could ever be shown without engaging in an exhaustive, class-member-by-class-member inquiry into the soil conditions of thousands of different tracts. And it should be noted that Jones is hardly entitled to a presumption that PCBs might be present everywhere, particularly when he blames an MCP program that did *not* engage in uniform spraying of the lake.[7]

And *even if* PCBs were proven to be on *every* class member's property, that still would not mean the trespass claim could be proved class-wide with common proof. Defendants deny that the MCP introduced *any* PCBs into the lake, but in any event it is undisputed that there are *numerous* other potential sources of PCB contamination of the lake. *See* Ex. 11, Butler Expert Report at 9-12. Defendants' expert, Dr. Butler, has determined that "PCB concentrations in fish tissue vary at different locations within Lake Wateree, indicating that PCBs in the lake itself are not uniformly distributed and suggesting that individual properties might not contain similar PCB fingerprints or concentrations." *Id.* at 16. Although Dr. Butler has "seen no evidence that any materials sprayed

[7] For instance, Henry and William Beckham, two former employees of the MCP, explained that spraying was focused primarily on stagnant water located in the back of coves. Spraying was not done at the entrances of those coves nor on shoreline otherwise adjacent to open water. *See* Ex. 10, Henry Beckham Dep. Tr. 54:5-56:3; Ex. 8, William Beckham Dep. Tr. 26:14-27:24.

by Duke Energy's MCP contained any PCBs," he opines that "even if the MCP did spray PCBs onto Lake Wateree, the presence of multiple upstream PCB sources needs to be considered. If any PCB contamination is found on individual properties, then such contamination would need to be carefully evaluated to determine whether it is consistent with PCBs from the MCP or the multiple upstream sources." *Id.*

Jones offers no explanation of the disconnect between MCP activity and PCB contamination, and he suggests no plan for identifying the source of any PCBs that purportedly impact the class. These were precisely the conditions that the *Tillman* court found to be unsuitable for class treatment. Here, as in *Tillman*, proving that Duke Power proximately caused an injury to each class member "is necessarily a highly individualized determination" requiring each plaintiff to show *both* (1) that his or her property actually contains PCBs (a showing that is apparently impossible for Jones), *and* (2) that those PCBs came from the defendant under circumstances amounting to a trespass. *See Tillman*, 2021 WL 4483035, at *11 (quotation omitted). But here, just as in *Tillman*, Jones's class certification motion totally "ignores two issues: (1) the fact-of-injury requirement and (2) the source of PCBs problem." *Id.* Neither can be addressed class-wide with common proof, as Rule 23(b)(3) requires, and class certification can and should be denied on this basis alone.

2. Negligence and Strict Liability

For similar reasons, Jones also fails to satisfy the predominance requirement of Rule 23(b)(3) with respect to key elements of his negligence and strict liability claims.

Negligence under South Carolina law requires a plaintiff to prove "(1) a duty of care owed by defendant to plaintiff; (2) breach of that duty by a negligent act or omission; and (3) *damage proximately resulting from the breach of duty*." *See J.T. Baggerly v. CSX Transp., Inc.*, 635 S.E.2d 97, 101 (S.C. 2006) (emphasis added). Generally, the "elements of both [negligence and strict

liability] are the same" except that a plaintiff must show a breach of duty of care for negligence and "unreasonable danger" for strict liability. *See Greenberg Inv. P'ship, L.P. v. Cary's Lake Homeowners Ass'n*, No. 3:15-CV-05096-JMC, 2016 WL 2766675, at *6 (D.S.C. May 13, 2016) (quoting *Werner v. Upjohn Co., Inc.*, 628 F.2d 848, 858 (4th Cir. 1980)). Thus, both causes of action require a showing of causation.

Despite this, Jones fails to mention how the causation element of negligence and strict liability can be established with common proof on a class-wide basis, and instead Jones cherry-picks only elements that he *could* perhaps address with class-wide proof.[8] But again, Jones bears the burden of showing that *each* element, not just a handful of them, is subject to common proof. *See Tillman*, 2021 WL 4483035, at *3, *9. Just as with trespass, even if the class could show that they were impacted in some fashion by PCBs in Lake Wateree, mini-trials would be required to determine whether the Duke Energy Defendants' MCP—as opposed to other, plausible sources—was responsible for those PCBs. *See id.* at *11-13 (holding plaintiffs could not establish negligence on a class-wide basis in part because the source of those PCBs was an individual inquiry); *see also McCormick v. Halliburton Energy Servs., Inc.*, 2015 WL 918767, at *3 (W.D. Okla. Mar. 3, 2015) (same).

And even if the class could somehow show causation, *i.e.*, that the PCBs in Lake Wateree and purportedly impacting the class came from the MCP, Jones offers the Court no plan for proving any resulting diminution of property values with class-wide proof. He will not be able to do so, as the Duke Energy Defendants explain in Section D, below.

[8] In addressing negligence, Jones only mentions the elements of duty and breach. *See* Pl.'s Mem. in Supp. of Mot. for Class Cert. at 21, ECF No. 82-1 ("Whether Duke Energy owed a duty of care and whether Duke Energy breached that duty will be decided in the same manner, and by the same proof, for every lakefront property owner."). Likewise, in addressing strict liability, Jones only mentions the "ultrahazardous activity" element. *See id.* ("[T]he question of whether the MCP constituted an ultrahazardous activity is the same as to every Class member.").

3. Nuisance

Jones cannot satisfy the predominance requirement with respect to each element of his nuisance claim, either. Private nuisance in South Carolina consists of a "substantial and unreasonable interference with the plaintiff's use and enjoyment of his property." *Shaw v. Coleman*, 645 S.E.2d 252, 258 (S.C. Ct. App. 2007) (quoting *Silvester v. Spring Valley Country Club*, 543 S.E.2d 563, 566 (S.C. Ct. App. 2001)).

Once again, this element cannot be litigated class-wide with common proof. The *Tillman* court unequivocally held that proof of injury to the use and enjoyment of property was an "individualized plaintiff-by-plaintiff determination," making nuisance claims especially unsuitable for class certification. *Tillman*, 2021 WL 4483035, at *15 (stating that of the three claims brought by plaintiffs—nuisance, trespass, and negligence—"*nuisance requires the most individualized analysis to establish liability*") (emphasis added).

To drive this point home, the *Tillman* court set forth a series of individualized questions likely to emanate from plaintiffs' nuisance claim based on waterborne PCB contamination, all of which apply here:

- Did the plaintiff use the portion of the property now-contaminated by PCBs?
- How did the plaintiff use that portion of the property before PCBs? After?
- How did the existence of PCBs impact the plaintiff's enjoyment of her property?

Id.; *see also McCormick*, 2015 WL 918767, at *3 (finding injury to the use and enjoyment of property "clearly requires an individual plaintiff by plaintiff factual determination," for instance, "did that particular plaintiff use the well for drinking water . . . what was the actual use of that particular property, etc.").

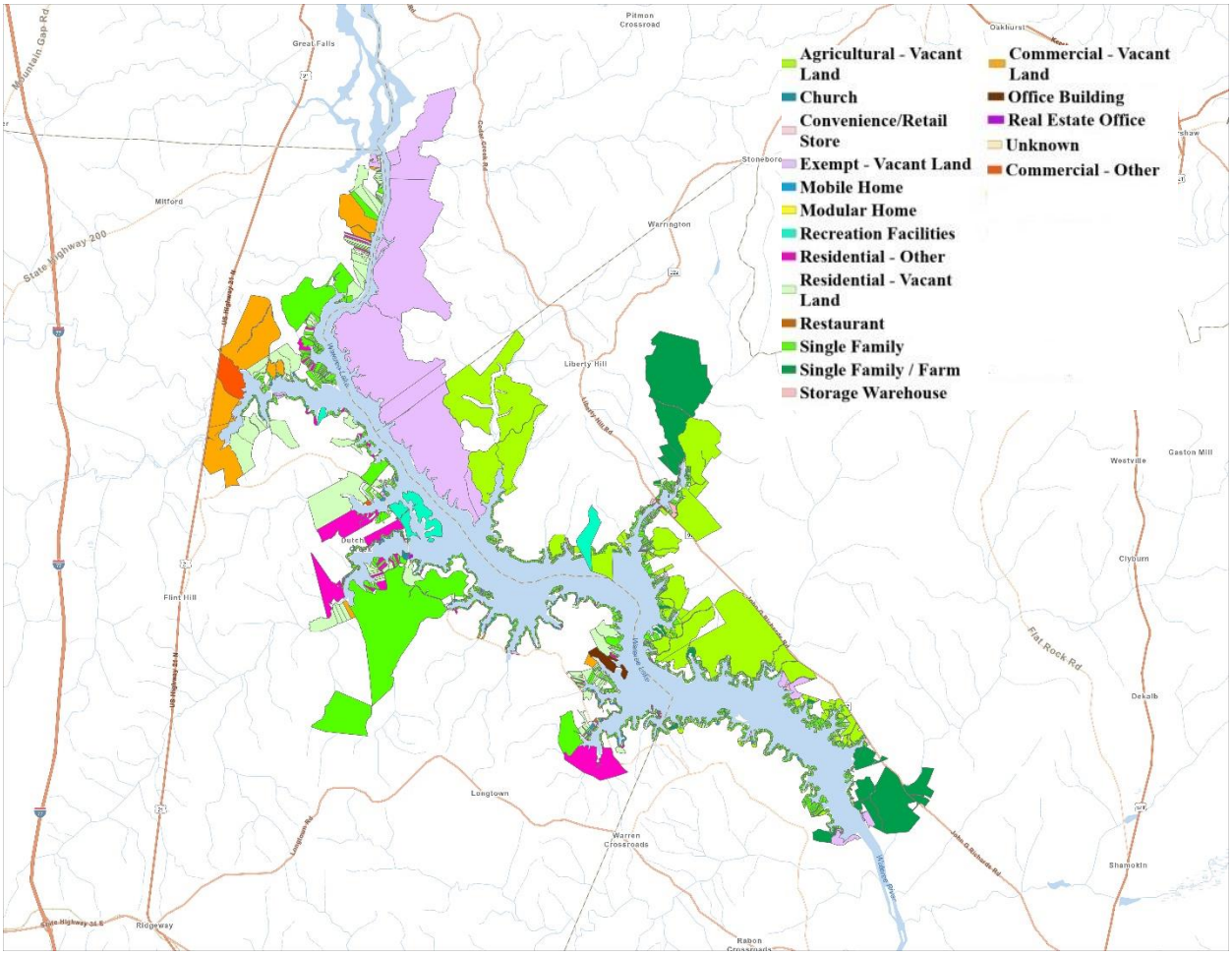
Here, Jones asserts that whether Defendants' MCP constituted a nuisance to waterfront property owners "will be determined under South Carolina law, and will require the same proof,

including documents, and testimony, for every Class member." Pl.'s Mem. in Supp. of Mot. for Class Cert. at 23, ECF No. 82-1. This purely conclusory statement, however, does nothing whatsoever to explain *how* questions of use and enjoyment could ever be established on a class-wide basis. What may be a nuisance to one property owner may be meaningless to another.

Jones himself provides one example of this problem. As part of his purported loss of enjoyment of his property, Jones claims he no longer fishes in Lake Wateree. *See* Ex. 9, Jones dep. Tr. 133:6-134:2, 136:21-138:24; *see also* Ex. 13, Jones's Resp. to Interrog. No. 14. This particular loss of use and enjoyment cannot, however, possibly be true for all 2,500 property owners. For instance, the renters who occupy Mr. Jones's property through VRBO continue to enjoy fishing in the lake, *with Mr. Jones helpfully providing them fishing gear for that very purpose*. *See* Ex. 9, Jones dep. Tr. 191:2-4; *see also* Exhibit 5 to Jones dep. (Jones's VRBO listing and accompanying property reviews). And certainly Jones points to no evidence that other property owners on the lake are any different from his own tenants. To the contrary, there is ample evidence that other property owners and lake goers continue to fish and participate in various other recreational activities on the lake despite the presence of these fish advisories. *See* Ex. 12, A&M Expert Report ¶¶ 199-211. Moreover, Mr. Jones confirmed the sentiment that individuals are free to make their own decisions with respect to the fish consumption advisories, *see* Ex. 9, Jones dep. Tr. 191:11-192:4, despite the fact he does not actually inform his renters about the presence of PCBs in the lake or the fish consumption advisories, *id.* 189:7-15, 191:11-25. Nonetheless, even where individuals know about the advisories, some may choose not to worry about them at all. Ex. 12, A&M Expert Report ¶ 213.

Further, the proposed class includes *all* types of property surrounding Lake Wateree, including residential, commercial, developed land, undeveloped land, etc. Defendants' real estate

expert, Christina Brunk, has identified at least 18 different categories of land use within the proposed class:



Id. at p. 22, Figure 12. The types of land owners also vary across the purported class and include individuals, life estates, trusts, business and commercial entities, and religious organizations. *Id.* ¶ 169.

Such a broad array of property types and ownership will certainly lead to individualized questions of "use and enjoyment." Because each property owner has the right to determine how they use their property—one aspect of the "bundle of rights" real property owners enjoy—the right to enjoy property is inherently personal and varies from owner to owner. *See id.* ¶ 49. As one example, a religious organization owning a church on the lake will use and experience their

property differently than Jones, who rents his property as a vacation home on VRBO. Clearly individual issues will predominate with respect to the impact of PCBs on each owner's use and enjoyment of their property.

C. Riparian Rights are Not Uniform Class-wide

Since Jones cannot show any physical invasion of his land, he bases his claims on alleged interference with riparian rights. According to Jones, PCB contamination of the water bordering his property is an interference with those water-usage rights and with the purportedly identical riparian rights of other class members. But unfortunately for Jones, *he has no* riparian rights—and unfortunately for Jones's class certification motion, only an individualized inquiry can determine whether any other class members do possess such rights.

Generally, in South Carolina, riparian rights consist of "the right of access to the navigable part of the stream from the front of [a property owner's] lot," including the right to build "private wharves, landings, or piers, or use the water of the stream for any purposes." *Lowcountry Open Land Trust v. State*, 552 S.E.2d 778, 785 (S.C. Ct. App. 2001) (quoting *McDaniel v. Greenville-Carolina Power Co.*, 78 S.E. 980, 981 (S.C. 1913)). Jones apparently assumes that such riparian rights form whenever someone owns land bordering water, and that the class—which consists only of waterfront property owners like himself—therefore uniformly possesses those rights.

But that is not the law. Merely owning "waterfront property," (*i.e*, the "banks" of a watercourse), is *not* sufficient to generate riparian rights. Instead, under South Carolina law, riparian rights flow from (are "incident to") a property owner's "ownership of the bank *and bed to the thread*"—*i.e.,* from the banks to the *middle*—of the watercourse, a legal concept adopted under the common law. *Lowcountry Open Land Trust*, 552 S.E.2d at 784 (emphasis added).[9] To be sure,

[9] *See also Shively*, 152 U.S. at 31 ("[T]he owners of the banks prima facio own the beds of all fresh-water rivers above the ebb and flow of the tide, even if actually navigable, to the thread of the stream, usque ad filum aquae."). "Usque ad filum aquae" means "as far as the thread of water,"

waterfront property owners typically do own from the bank and bed to the thread of an adjoining watercourse. *Shively*, 152 U.S. at 31. But Jones does not, because Lake Wateree is a special case. It was formed as part of a power company dam project, and as a result, the "bed to the thread" of the river is owned instead by the power company (now Duke Energy Carolinas, LLC). Specifically, in 1916, the State of South Carolina deeded the thread and bed of the relevant watercourse (described as the "Wateree Canal") to Wateree Power Company, Duke Power's predecessor in interest. *See* Ex. 14, Deed Book AD, p. 672 (recorded Jan. 29, 1916).

Jones does not dispute that fact. His Amended Complaint concedes that he owns only to the "high-water mark," rather than the bed to the middle of the watercourse. Am. Compl. ¶ 53; *see also* Pl.'s Resp. in Opp'n to Defs.' Mot. to Dismiss at 2, ECF No. 49. Jones thus freely admits that the dock at his house is built "on Duke's property," *i.e., the bed of the watercourse. See* Ex. 9, Jones Dep. Tr. 66:7-12. That dock required a permit from Duke Power precisely because Jones, or his predecessor, *lacked* the basic riparian right to build a pier. *See* Ex. 15, Plat Book 1,083, p. 317 (recorded Nov. 29, 2001).[10]

And if all this were not enough, Jones's property records reiterate that none of the traditional riparian usage rights ever attached to his waterfront property. The 2001 plat for Jones's lot notes that the property is "subject to Restrictive Covenants recorded in the Office of the Clerk of Court for Kershaw County in Deed Book IR, at page 818." Ex. 15, Plat Book 1,083, p. 317 (recorded Nov. 29, 2001); *see also* Ex. 16, Deed Book IR, p. 818 (recorded March 16, 1982). Under those Restrictive Covenants, Jones received:

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and is defined "as far as the middle of the stream — referring to a rule in law that when a boundary of a real property is formed by a nontidal stream, unless otherwise evident, the title extends to an imaginary line along the middle of the stream subject to the rights of the public." Webster's 3rd Int'l Dictionary (1976).

[10] Mr. Jones's dock (identified on the plat as the "pier") is depicted along with its required permit number.

no promises, covenants, warranties, or guaranties relative to:

1. The continued existence of any lake;
2. The purity or any other characteristic of the water in any lake;
3. The maintenance of any particular water level at any time or season in any lake;
4. Any right to use for any purpose or any right to access to the water of any lake; and
5. Any right to construct piers, docks, boathouses, or any other improvements of any sort except upon the land conveyed hereby in keeping with the aforesaid restrictions, easements, conditions and reservations.

Ex. 16, Deed Book IR, p. 818 (recorded March 16, 1982).

The Jones property was thus expressly deprived of each and every core riparian right. By virtue of these covenants, even if Jones did own from the bank and bed to the thread—and he admits he does not—Jones *still* would have no right even to the *existence* of any water (at any level), to access any such water, or to build any dock. And for good measure, Jones even has no right to demand that the water be free of any contaminant.

How far do the other class members' property boundaries extend? Does each class member's title history contain the same, or similar, exclusions of riparian rights? Unfortunately for the putative class, there is only one way to find out. The research necessary to determine Mr. Jones's real property rights would need to be repeated for thousands of other class members. That individualized, class-member-by-class-member inquiry will obviously predominate over any common issues.

And even that research effort might not be sufficient to identify and understand the rights of each class member. Other transactions involving relevant properties may well be in play. For example, in 1944, owners of three tracts in the vicinity of Beaver Creek, a Wateree River tributary, executed a release in favor of Duke Power regarding "loss and damages account of mosquitoes, impounded water, backwater or otherwise," a release that could easily affect the property rights of

successors in interest to the releasors. *See Hilton v. Duke Power Co.*, 254 F.2d 118, 120–24 (4th Cir. 1958).

Finally, even if a class member other than Jones could make a colorable claim to infringement of riparian rights, there is still the problem that Jones himself cannot properly represent that class member's interests. Lacking riparian rights himself, Jones's claims cannot possibly be typical of class members who do possess those rights, and who are able to pursue claims based on that legal theory. *McLaurin*, 271 F.R.D. at 476 (class representative must pursue "same legal theory" as class).

D. Jones Has Failed to Identify a Common Method for Assessing Damages

Jones's predominance difficulties extend well beyond the elements of his claims. He also fails that test with respect to damages. As this Court has recognized, "[w]hile differences in the amount of damages suffered by individual class members may not destroy predominance," failing to "come forth with a method of assessing damages and managing recovery for each potential class member in a logical or manageable way" is problematic. *See Burton v. Chrysler Group LLC*, No. 8:10-CV-00209-MGL, 2012 WL 7153877, at *7 n.5 (D.S.C. Dec. 21, 2012); *see In re TD Bank, N.A. Debit Card Overdraft Fee Litig.*, No. 6:15–MN–2613–BHH, 325 F.R.D. 136, 172 (D.S.C. 2018) ("The damages in question must be measurable class-wide through use of a common methodology.") (citing *Comcast Corp.*, 569 U.S. at 30-38).

Jones fails even to suggest—much less establish with expert testimony or any other evidence—a common methodology for assessing damages with respect to each potential class member in a logical or manageable way. Jones instead relies only on the fact he "identified potential experts in the fields of real estate appraisal and natural resources economics . . . [who are] among the experts that Plaintiff is likely to disclose in accordance with the case scheduling order." *See* Pl.'s Mem. in Supp. of Mot. for Class Cert. at 16 n.7. But such vague and conclusory

assertions about experts who might—or might not—ultimately testify are plainly insufficient to satisfy Jones's burden. *Cf. Tillman*, 2021 WL 4483035, at *13 (finding plaintiff's explanation of what his expert "will say" on causation without actually presenting any evidence to the court was insufficient to establish plaintiff's burden); *see also Robert Elliott Trucking, Inc. v. Caterpillar, Inc.*, No. 9:11-CV-753-RMG, 2012 WL 2918700, at *10 (D.S.C. Mar. 21, 2012) (declining to certify a class in part because "Plaintiff [did] not propose any common formula that could be used, nor [did] Plaintiff otherwise explain how determining damages would be manageable in this case").

In fact, determining damages for each class member is an inherently individualized inquiry that cannot be conducted with a common methodology—as unrebutted evidence establishes. As Defendants' real estate expert, Ms. Brunk, notes, failing to "properly address the myriad individual issues that affect property value (and any potential impact to that value) will lead to damages claims that are unreliable and incorrect." A&M Expert Report ¶ 47.

To begin, it is axiomatic that each property's *unimpaired value* must be established before any assessment of diminution or harm can be completed, yet Jones has failed to propose a common methodology for doing so. This is unsurprising, since property values are influenced by a wide array of physical characteristics that vary significantly from one property to another. As Ms. Brunk explains, relevant factors include:

- The owner's use of the land (*e.g.*, residential homeowner, residential rental property, industrial, retail, marina, etc.)
- The property's features, condition, and overall maintenance (*e.g.*, lot size, range of improvement types, architectural styles, year built, upkeep, etc.)

- Shoreline characteristics, water access, elevation, and terrain (*e.g.*, presence of a beach or dock, floodplain status, etc.)
- The extent and quality of views of Lake Wateree
- The presence of specific environmental conditions (*e.g.*, junk piles, livestock, herbicides, etc.)
- Neighborhood-specific factors (*e.g.*, the tax structures, municipal services, and schools offered by the three counties surrounding Lake Wateree)

Id. ¶¶ 52-125. These factors, which are highly individualized, drive a property's unimpaired value *and* influence whether, and to what degree, that value is impacted by the environmental conditions such as the alleged presence of PCBs. *See id.* ¶ 87. Importantly, analysis of these issues cannot be automated: with respect to residential properties, for example, the "publicly available data provides only limited detail regarding the specific property type or [its] features," and thus "many of the features critical to a determination of value or impact to value are not available or known on a class-wide basis." *Id.* ¶ 85.

Next, any alleged *diminution* in property value requires a property-specific analysis addressing (1) the presence, type, and degree of physical impact from PCBs; and (2) whether such impact actually affected the property's value. *Id.* ¶¶ 136, 148. Ms. Brunk offers unrebutted evidence that the mere presence of an environmental contaminant does *not* automatically result in diminution of value, *id.* ¶ 128, and even if there has been diminution, that diminution does not automatically result in *damages*, *id.* ¶ 161. Instead, a negative condition must be weighed alongside all other attributes affecting the property to determine its actual effect on pricing, if any. *Id.* ¶¶ 137-47.

One example of the required individualized analysis relates to timing. The proposed class includes all *current* waterfront property owners, yet the impact of fish consumption advisories and PCB presence is contingent on when each owner acquired their property. For example, a purchaser who bought after the market learned of PCBs might well have paid a price reflecting any diminution, thus negating any damage claim. *See* A&M Expert Report ¶¶ 164-67. This fact alone necessitates individual inquiries into each owner's purchase date, and it should be noted that the date of the most recent recorded deed transfer for a waterfront property in Fairfield County is not readily available. *Id.* ¶ 164.

Thus, even if PCBs are found on class members' properties, individual issues will predominate with regard to whether the presence of those PCBs resulted in compensable damage to any given class member's property. *Id.* ¶¶ 160-63. Despite Jones's vague assurances that experts might solve the problem someday, in fact there simply is no "uniform market price discount for contaminated properties . . . ." *Id.* ¶ 160 (citation omitted).

A preliminary market analysis conducted by Ms. Brunk drives this point home, and shows why the Court cannot simply assume impact and damages class-wide, as Jones invites the Court to do. Ms. Brunk compared MLS sales data from Lake Wateree with sales data from Lake Moultrie and Lake Marion—neither of which is subject to a warning or advisory related to PCBs. *Id.* ¶¶ 183-85. She found that "[a]ll three markets have exhibited consistent growth in average price and average price per square foot throughout the period analyzed, with Lake Wateree exhibiting particularly strong growth in average price per square foot from 2020 through 2024." *Id.* ¶ 190. This fact would likely come as no surprise to the Dennis and Deborah Phillips, who were previously named plaintiffs in this case. When they sold their Lake Wateree house last May, they made a profit of $392,000, representing 124.4% total appreciation and a 7.8% appreciation for each year they owned the property. *Id.* ¶¶ 193-95. Meanwhile, the Jones property appears to be

well-enjoyed and well-reviewed by renters, and Mr. Jones is not aware of any guest who has complained or canceled a reservation due to any type of complaint related to PCBs. *Id.* ¶¶ 200-02.

E. The Duke Energy Defendants' Statute of Limitations Defense Also Presents Individualized Issues Sufficient to Defeat Class Certification

The predominance requirement of Rule 23(b)(3) applies not just to litigation of the elements of Jones's claims, and not just to his methodology (or lack thereof) for computing damages, but also to litigation of the Duke Energy Defendants' defenses. Here, resolution of the statute of limitations defense alone will require mini-trials as to every single class member, and that fact is independently sufficient to bar class certification.

The limitations issue will be hotly contested in this case. When the Court denied the Duke Energy Defendants' Motion to Dismiss Jones's claims due to the statute of limitations, the Court did not declare Jones's claims to be timely. Instead, the Court held simply that it could not conclude, as required for dismissal under Rule 12, that all the facts necessary to apply the statute of limitations appeared on the face of the Amended Complaint. Order at 7, ECF No. 55. The question now before the Court is whether Defendants' statute-of-limitations defense can be resolved as to each class member using common proof, consistent with the predominance requirement of Rule 23(b)(3)—or whether, instead, individualized mini-trials will be required, barring class certification. The latter is the case.

At the outset, it should be noted that even though Defendants will ultimately bear the burden of proving the limitations defense, Jones has the burden of justifying class treatment of the defense under Rule 23. *Thorn v. Jefferson-Pilot Life Ins. Co.*, 445 F.3d 311, 321 (4th Cir. 2006). And Jones can satisfy that burden only with a showing that "affirmatively reveal[s] that resolution of the statute of limitations defense on its merits may be accomplished on a class-wide basis." *Id.*

That is no easy task in the Fourth Circuit. As the *Thorn* court noted, regardless of whether state or federal law supplies the length of a limitations period, "federal law determines when the

clock begins to run against that period, or, phrased technically, when the cause of action 'accrues.'" *Id.* at 320 (citation omitted). And the Fourth Circuit's accrual rule, which "focuses on the contents of the plaintiff's mind, *is not readily susceptible to class-wide determination*." *Id.* (emphasis added). Indeed,

> [e]xamination of whether a particular plaintiff possessed sufficient information such that he knew or should have known about his cause of action will generally require individual examination of testimony from each particular plaintiff to determine what he knew and when he knew it.

Id. That will certainly be the case here, and Jones does not bother to argue otherwise.

As the Court will recall, Defendants showed that from at least 2009, well outside the limitations period, Lake Wateree has been continuously subject to fish consumption advisories. Order at 7-8, ECF No. 55. Moreover, and as noted above, the MCP was never a secret—and the MCP's use of oil, in particular, was (as noted above) a focus of negative press and public concern in 1997. ECF No. 82-2, Ex. E at 3 (emphasis added).

Far from meeting his burden, Jones does not even *suggest* how resolution of the limitations defense can be accomplished on a class-wide basis, without "individual examination of testimony from each particular plaintiff." *Thorn*, 445 F.3d at 320. Obviously, such individualized testimony *will* be necessary to determine, for example, (a) what each class member knew—and when—regarding the fish advisories (issued well outside the limitations period), and/or (b) whether a given class member was exposed to the "negative press and public concern" regarding the MCP in 1997, or afterwards.

The deposition of Mr. Jones provides an example of the individualized facts that will need to be investigated, litigated, and resolved with respect to *literally every class member* on the question of the statute of limitations. Although Jones testified that he did not know about PCB contamination of Lake Wateree until he read the Glover & Gunderson study in "late 2021, early 2022," Ex. 9, Jones Dep. Tr. 53:18-23, he conceded that he was aware of fish advisories based on

"contaminated fish" as early as 2010—well outside the limitations period—because he saw signs posted at the lake regarding contamination. *Id.* 56:6-15; 135:17-136:8. And Jones's own father worked for the MCP. *See* Ex. 10, Henry Beckham Dep. Tr. 45:5-46:4, 50:25-51:7; Ex. 8, William Beckham Dep. Tr. 45:6-9, 46:7-12. So, even though the Court has held that the fish advisories were not sufficient to trigger the statute as a *matter of law*, it remains the case that a jury will need to consider Mr. Jones's story to determine whether the advisories or other events triggered the statute in his *individual* case as a *matter of fact*. More importantly for resolution of this motion, each and every other class member will have his or her own individual story, the unique "contents of [his or her] mind," that will need to litigated and resolved in precisely the same fashion. *Thorn*, 445 F.3d at 320.

If Plaintiffs do ever comment on how the limitations issue can be litigated consistent with Rule 23, they might argue that their allegation of concealment somehow turns resolution of the limitations defense into a class-wide issue. But that is not the law. A court cannot create a "class-wide presumption of unawareness" based on alleged concealment, because that is not a "natural inference" from concealment, and in any event "evidence of unawareness of [a] cause of action is information uniquely in the class's possession, a fact that defeats the necessity of a presumption in the class's favor." *Id.* at 323-24. Even more importantly, in this case, as in *Thorn*, no presumption could ever be sustained, because the Duke Energy Defendants have actually shown that individual class members could easily have been exposed to information sufficient to trigger the statute long ago. *See id.* at 325-26.

V. CONCLUSION

For the foregoing reasons, the Duke Energy Defendants respectfully request that the Court deny the Motion for Class Certification.

This the 3rd day of November, 2025.

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Exhibit 1

DUKE POWER COMPANY RESERVOIR MOSQUITO CONTROL PROGRAM, 1923-1998: A BRIEF HISTORY

Introduction

I'm writing this account in April 1999, prior to the opening of the 76th operational year of the DPC mosquito control program. A few months ago, September 11, 1998 we celebrated the 75th Anniversary of the program and at the celebration luncheon dedicated the new Lake Norman Mosquito Control Facility to Frank Moon Boldridge, Jr.,M.D. Dr. Boldridge developed and was the first director (1923-1966) of the Duke Power Reservoir Mosquito Control Program.

You are opening this time capsule that contains this information at the 90th Anniversary of the program in 2013, and again at the 100th Anniversary in 2023. Maybe some of us will make the 90th opening. Think about us in 2023 when you again open the capsule.

We want to give you (all the folks associated with the mosquito program) the opportunity to take a moment and reflect on the contribution of your efforts and also to consider the value of the efforts of those who came before you. You continue to provide a service that has a serious role protecting the health and safety of those citizens associated with Duke Power reservoirs. On the larger stage of life this may be small stuff. But this stuff has absorbed the professional talents of many folks over seven decades in a manner usually unnoticed (and for the most part unappreciated) by public and management alike. The following is a brief and in many ways an unsatisfactory account of how you managed to get where you are now, so you will have a small idea of the professional legacy passed on to you and to those that follow you.

The Beginning and Early Years

Malaria was a serious problem in the Southeastern US up until WWII. In the early part of the 20th Century, the Southern Power Company (by 1924 known as Duke Power Company) was building dams along the Catawba River and was continually having to deal with legal and health problems associated with the transmission of malaria by the permanent impounded water breeding mosquito Anopheles quadrimaculatus. Southern Power Company (SPC) was spending considerable amounts of money on studies by public health consultants to demonstrate that SPC was not contributing to the existing malaria problem by building dams or from reservoir operations. Although successful in court cases, SPC and other utilities were being pressured by state and federal public health officials to be proactive about the malaria/reservoir question (See page 8 in Malaria Control on Impounded Water, cited below).

Convinced the problem was going to get larger and potentially more expensive as legal cases continued to sap company officials time and energies, James B. Duke resolved to take action and hires a medical doctor working as a county public health inspector/doctor in South Carolina. This doctor, South Carolina native Dr. Frank Moon Boldridge, Jr.,

MD, was familiar with malaria from his work as a young U.S. Army medical doctor in WWI Europe dealing with the effects of malaria on military personal.

Boldridge had done some malaria consultation for SPC and through his friendship with an Assistant US Surgeon General and others in the southeastern public health sector, Boldridge was recommended to J.B. Duke to develop a malaria control program for SPC. Good professional networking and being at the right place at the right time hasn't changed much.

Years later, Doc Boldridge told the story in a more colorful form, " J.B. Duke called the US Surgeon General and asks to speak to his best man working on malaria. Duke is told that fellow was Frank Boldridge. Duke calls Boldridge and tells him, "I'm James Duke, you now work for me. Please be in my office Monday." This wonderful story fits the colorful image of James Duke, captain of industry and the charismatic personality of Boldridge.

Boldridge started to work for Duke by early summer 1923 and began an aggressive program of mosquito larviciding on Lake James and probably other mosquito breeding hot spots associated with company worker villages located near its power dams.

The program then, in concept, is the same program that is now in place 75 years later. In effect we (and you) conduct mosquito larviciding within reservoir project boundaries using standard state of the art control techniques. In 1923, the major larviciding material was fuel oil. This was the standard practice for DPC until 1989 when liquid Bti replaced the use of fuel oil.

In those early years fuel oil was delivered to the various lake "mosquito camps" in 55 gallon barrels. Hundreds of 55 gallon barrels! The barrels when needed were man-handled aboard worker made barges made from 2" thick rough cut tongue and grove lumber. The oil was sprayed along the shoreline in likely mosquito breeding habitat. Barrels were also placed at the mouths of selected streams entering the reservoirs and allowed to continuously drip-apply oil in to the slowly moving current (pers.com. Ruben Swafford, Lake James. In 1999, Ruben began his 50th year with the program as a boat spray crew member). At times, several hundred full and empty oil drums accumulated at the field camps.

Crews, at the more remote reservoir program staging areas lived in tent camps along the shoreline (program supply records). In addition to larviciding, crews cut back shoreline vegetation to allow larviciding access, improving water flow in breeding areas, and increasing sunlight penetration by streamside brush coppicing. Early barges may have been poled to some extent but early out-board motors were probably also used. Seven or eight men labored through each hot summer on each of the program reservoirs.

Pre-War Depression and WWII Years.

Oral tradition says the mosquito program began on L. James. Not long after, Lakes Wylie and Wateree were added. Fuel oil was still the standard larvicide. There is every indication Boldridge also tried any cost effective, research suggested innovations that became available in mosquito control including trial use of other larvicide's, draining low areas, shoreline vegetation reduction, reservoir surcharge, stocking of mosquito fish (program records - order for mosquito fish from the US Bureau of Fisheries). An indicator of Boldridge's interest in technical matters is that he learned to fly in the late 20's and for several decades gave leadership in a Charlotte aviation association.

Soon after the beginning of WWII, Boldridge could no longer obtain adequate supplies of fuel oil, most of which was being directed to the war effort. Program records indicate contract trucks collected used crank case oil purchased from scattered regional auto service stations. In addition, drip oil from turbine bearings and by product oil from company run manufactured gas plants was also used (program records). The human side of the program was that members of larviciding crews were enlisting and being drafted into military service.

Bill Lee (CEO in the 1980's) said Boldridge mentioned to him that he never used DDT. DDT was not generally available during the war because of its use in overseas combat areas. Following the war, although DDT was common, it was considered more effective against adult mosquitoes in residential dwelling applications. Because of stocks that lasted until the mid-1970's Paris green (copper aceto-arsenite) was also applied as a larvicide by program employees.

Duke Power's mosquito control program always reflected the austerity of the times as well as being a low-tech public health program. Keeping the program low cost has always been an important consideration. The depression and WWII produced a no-frills approach to mosquito control.

A wonderful overview of early mosquito control in impounded waters is a book prepared by the US Public Health Service and Tennessee Valley Authority entitled Malaria Control on Impounded Waters , published in 1947 by the US Government Printing Office, Washington, DC. I'll leave my personal copy in the Environmental Center library for you to look through.

Post WWII through the late 1980s

During and following WWII, the amount of larviciding oil used was reduced. Only mosquito breeding habitats were treated. Barges carrying 55 gallon barrels gave way to boats. Larviciding oil was metered into the water stream from on-board oil storage tanks. The water/oil spray produced by a gasoline powered pump was directed at known breeding habitat as the boats followed their spray route. As late as the 1990s older

reservoir residents would complain that the newer boats, containing a 12V spray on demand pump systems, didn't spray "their mosquitoes" when the boats came by. In the gasoline engine run pump days, the old gasoline engines ran continuously because they were notoriously hard to restart after becoming hot, so water was sprayed continuously. When a crew arrived at a breeding habitat site, unseen by shoreline observers they would turn a valve allowing fuel oil to be pulled into the water stream, to be directed on the mosquito breeding area then turned off s the boat continued its route. This explanation still doesn't satisfy the older folks who want to see that continuous spray they saw as children growing up or when visiting their grandparent's lake cottage, the "placebo effect."

Larviciding began on L. Norman before it reached full pool in 1963. Lake Greenwood 's existing county mosquito control program was added in 1966 when that lake was leased from Greenwood County. John Whiteford, a Cross Hill native and returning European war veteran who had been running the Greenwood mosquito control program and log removal operation on the lake since 1945 was transferred over to Duke along with his laborer crew. To keep them and their lake experience, they were given full seniority when they were transferred to Duke Power. "Mr. John" retired in the late 70's and his son Robert was hired to continue the program. Robert was chosen by the Buzzard Roost Hydro Station (Lake Greenwood hydroelectric dam and station) management to continue the program because as a student he spent his summer vacations with his dad on the lake and knew every inch of shoreline as well as most of it's shoreline residents. Robert says he's related to most of them. Not the Yankees of course.

The last large reservoir added to the program was Lake Keowee near Clemson, SC. When the lake reached full pool in 1973 boat crews were busy spraying the mosquito breed habitat. It is interesting to note that as Belews Lake, Northeast of Winston Salem, NC, was under construction, site of the large Belews Creek Coal Fired Steam Station, a temporary mosquito control program was put in place until the lake reached full pool. Belews Lake is steep sided with little shallow water providing mosquito breeding habitat. Most of the potential breeding habitat is available to resident lake fish. When rafting wind-blown floating organic detritus (wood, sticks, bark) that protected the mosquito larvae from fish perdition sank due to lake water saturation by the end of filling, mosquito control was no longer necessary. Reservoir morphology plays a great roll in the development of mosquito breeding habitat. The shallower the reservoir, the more likely larger areas of the reservoir my produce mosquito breeding, especially in aquatic plants and in shoreline ponds cut off from the reservoir by sand-bars.

By the early 1960s, Doc Boldridge, planning for retirement, hired John Lyon to take over the day to day mosquito control program. Lyon's premature death from brain cancer in the mid 1960's delayed Boldridge's retirement until 1966. George T. Swearigan, M.S., R.S., was hired in 1966 to become the second mosquito control director for Duke Power. Doc Boldridge died in 1981 after 43 years with Duke Power and many years as a public health consultant to the company. He saw both lakes Norman and Keowee, the last major reservoirs built by Duke Power and thus finishing the electrification of the upper Catawba River begun decades before under the leadership and vision of James B. Duke

(President of the American Tobacco Co, and namesake and benefactor of Duke University), brought into the company's mosquito control program. At his funeral, the who's-who of Duke Power were his pall bearers and honorary pall bearers.

Doc Boldridge and his wife did not have children and when she died in the mid 80's her nephew contacted Duke to see if the company wanted Doc's extensive collection of correspondence about the early mosquito days and his oil portrait that dated from the 1930's. It always hung over the main fireplace in his big Selwyn Avenue, Charlotte, NC home and many Duke executive old-timers remember it staring down at them when they visited.

The company did not take the correspondence (what a phenomenal loss of our history) but Jim Hendicks (a company environmental engineer and General Manager in charge of DPC environmental activities) managed to obtain the portrait, have it cleaned, re-stretched, and it now hangs in the lobby of the Duke Power Environmental Center, located on Lake Norman near McGuire Nuclear Station.. If Duke ever gets out of environmental work, please see if the portrait can be donated to the Public Health Pest Management Division of North Carolina. They house the state mosquito control program and would understand the historical significance of the painting. Look into those eyes and imagine telling Doc Boldridge that mosquito control wasn't important! By the way, he was over six feet tall. I wouldn't want the ghosts of Boldridge and J.B. Duke paying me a visit!

As a side note, Ruben Swafford of our L. James crew was hired by Boldridge in 1949. His father Clifton was employed in the program from 1940 until his death in 1968. Ruben had one break in service with the company when he was drafted into the Army (serving in the Korean War with distinction) rides the mosquito boat at L. James with is younger brother Boyd who retired from the Hickory area furniture industry. In December 1998, the new Black Bear access area on L. James was dedicated to the 80+ years of environmental service to Lake James by the Clifton Swafford family. We placed a brass plaque on a large stone boulder at the head of the ramps to mark the occasion. Tommy Bowen (Mosquito Control Field Staff & Facilities Coordinator), my scientific colleague and partner in keeping this program together picked out the boulder, a small Mt. Rushmore! As time allows, check to see if it's still there and if it needs a good cleaning. If members of the Swafford family are still around in Nebo, NC, give them a call and thank them again for their family's dedication to public health on L. James.

During his tenure as program director, George Swearingen established permanent mosquito control facilities on the program lakes. Small wooden buildings were erected on Duke owned lake shore property to house the day to day needs of the crews on each lake. On Lake Wateree for example, yellow pines were logged on the property, cut into rough cut boards at a local saw mill. The mosquito control crew used the boards to build the small one room facility at the lake. Was this cost effective or what? George began his career as a SC county environmental public health worker and Doc Boldridge, keeping true to his SC roots hired Swearingen.

Above ground, eight thousand gallon bulk oil storage tanks installed at each lake mosquito control facility site replaced the continuous hauling of 55 gallon barrels. Boats filled their on-board oil tanks from filler hoses at the end of their piers. Enclosed boat houses were built to give the spray boats security from adverse weather and possible vandalism.. The work boats took on a characteristic "African Queen" look as each boat was covered with a handmade aluminum tube and wood, canvas sun/rain awning that extends almost the length of each boat. Swearingen retired from Duke Power in 1988 and now lives in Bishopville, SC. Robert T. Barden M.S., R.S., who had worked for Swearigan since the early 1970s became the third director in 1988. Both were South Carolina natives and former SC county public health workers. Both Barden and Swearingen are past presidents of the North Carolina Mosquito and Vector Control Association.

By 1989, Barden replaced fuel oil as the main larvicide used in the program and had all the 8000 gallon above ground oil tanks removed. Gasoline powered spray pumps were replaced with quite, spray on demand, 12V electric agricultural spray pumps. The liquid Bti is mixed in a 30 gallon on-board mix tank. The normal spray rate is four ounces of Bti per acre which translates to about a mile of mosquito breeding habitat sprayed per day. As cellular phone towers became widely located, each boat was provided with on-board cellular phone service to enhance program communications especially during an emergency.

Barden also conducted aquatic weed control operations for the company. He was the first operator of the company airboat that allows herbicide application on dense underwater weed beds. Exotic invasive weeds can block power plant intakes and produce massive mosquito breeding habitat. Prior to his retirement in 1996, Barden was also responsible for not only mosquito control and weed management but also access ramp construction and maintenance. Barden is President of L&B Services of Waxhaw, NC and is a consultant to Duke Power during the mosquito control season.

It is interesting to note that mosquito control was never a stand alone program. Boldridge had responsibility for company medical concerns, and among many other things ordered all medical supplies for the various scattered power stations and support operations. The most requested item from the stations in the early days was "medicated foot power." Go figure?

By the 1980s George Swearingen and Bob Barden held responsibility for station medical supplies, mosquito control, general facilities pest control, facilities sanitation, company wide oil spill planning and prevention, FERC mandated recreation planning, installation and maintenance of reservoir launch ramps and many other lake maintenance issues such as pier permitting and shoreline issues including aquatic weed control. Most of these responsibilities now reside with other work groups or the functions are no longer conducted in-house if at all.

Historically, the mosquito control program is the oldest environmental program at Duke Power. It is also possibly the oldest continuously operated environmental program of any

electrical utility in North America, predating TVA. Although the oldest company environmental program it was until recently not part of the other environmental programs of the company that found their beginnings with federal and state environmental impact studies (EIS) work of the 1970s. Through the years, following many company reorganizations, the program found its home under many different organizations such as an early company health department, Real Estate Department, Operation Department, Fossil/Hydro Department, Electrical Systems Support Department, and is now united with all the other operational environmental activities of Duke Power Company in Group Environment, Health, and Safety (Department).

Current Program Operations

The mosquito control program is conducted daily on six DPC reservoirs beginning the first working day of May, ending the last working day of October of each year. The reservoirs with ongoing control programs are lakes James (one crew), Norman (three crews), Wylie (one crew), Wateree (one crew), Greenwood (one crew), and Keowee (one crew).

The program continues to use the state of the art Bti larvicide program establish by Barden. Altosid pellets and briquette are also used in temporary pool breeding habitats as well as a specially refined oil (Golden Bear) and highly refined mono-molecular oil called Arosurf. Today the mosquito control program is part of a sister activity responsible for aquatic plant management in Duke reservoirs.

The field office for the Duke Power Reservoir Mosquito Control Program and the Aquatic Plant Management Program is the newly dedicated Frank M. Boldridge Lake Norman Mosquito Control Facility located at the mouth of the Marshall Steam Station discharge canal. The new facility was dedicated on September 11, 1998 by Bill Coley, President of Duke Power Company. In his remarks he seemed sincerely pleased that we were carrying on the tradition of Duke Power's long held motto, "Citizenship and Service."

The program is now under the leadership of Ken Manuel, an aquatic entomologist who came to work for Duke Power in 1980. The personnel and facilities coordinator for the program is Tommy Bowen who began work for Duke Power in 1974.

Today, Spring 1999

When reading old mosquito control file correspondence around December 7, 1941 into early 1942 it was interesting to note that no one spoke about the attack of Pearl Harbor and the beginning of WWII. I will not attempt to encapsulate ALL the current news but in short, NATO is in its third week of bombing of the former Yugoslavia because of the massive repression of the Albanian Muslims living in the province of Kosovo. Those of us with young adult children are worried about the US possibly starting the military draft because of the military services have not been meeting their recruiting quotas for

several year now. When the economy is booming, who wants to go into the Army? Maybe 15 years from now we will better understand the national interest need of the US to be at war in the Balkans.

President Clinton weathered the senate impeachment trial and Monica (a White House intern involved in the sex scandal with Clinton leading to the impeachment trial) is on the talk show book writing circuit.

Prediction: Clinton will be back in his home town of Hope, Arkansas or maybe in Bentonville, AK as head of Walmart (a large national retail store chain). Hillary (Pres. Clinton's wife) may be a senator from New York (a rumor). V-Pres. Albert Gore will probably be elected in 2000 if the economy continues to boom like it has for the last several years. After that, who knows, although you'll be in the last year of a possible eight year term of another professional politician follow Gore.

If the US economy goes south along with the Japanese....but we'll all know what really happened in 15 years! Did you ever get a flat tax? By the way, Mark McGuire with 70 home runs in 1998 and Sammy Socia with 65, both breaking the Babe Ruth/Roger Mares homerun record are looking for another record year in 1999. Now we know what's important.

We're going into the second full year of the Duke Power-Pan Energy merger (now Duke Energy unless Exxon buys us as the rumor mill suggests). We're one of the biggest energy companies in the US. Duke Power, a subsidiary of Duke Energy, is still a regional power company. Most of us like that because we know our customer base and most of the reservoir/water environmental issues. We sill believe in "Citizenship and Service" although it's been removed from the company logo. Who knows what's next.

The last decade at Duke Power (1988-98) has been hard on the hired help with large layoffs in 1988 and 1996 and little layoffs all along the way. There's not much in the way of employee moral these days. Most folks hope they can hold on until retirement and day to day continue to do their job as professionally as possible.

We still have a lot of environmental work to keep us busy due to NRC, FERC, state and local rules and regulations but the trend within the company is to look at the "low bidder" vendor. If, when reading this you find yourself a Duke Power employee then the company still has something of an environmental program. It is interesting to note, the reason DPC has an in-house environmental operation now (1999) is because, when environmental work was growing by leap and bounds in the early 1970s (due to EPA and many new environmental protection laws being implemented by state and federal governments at the time), low bidders trashed several important EIS studies resulting in major Duke cost over-runs and delays. Duke then decided to do the work itself to control study quality and built a large environmental team between 1974 and 1980 to respond to that need. Hopefully we don't forget out history and try to reinvent the early 70's wheel.

The one real and absolutely valid prediction in all this is the continued urban growth around DPC's reservoirs. The entire Catawba River Valley is growing beyond belief and that growth is having an amazing impact on the area's watershed. Water use issues are growing and will become more contentious as the various multi-use water factions via for prominence. Some time in the first ten years of the next century (2006?) all the Catawba River reservoirs will need to be relicensed and I'm sure these issues will be high on the list of concerns. Drinking water quantity and quality concerns will continue to grow since most of the local municipal drinking water supplies originate in Catawba River reservoirs. We will probably have to grow the mosquito control program especially if Fishing Creek and Wateree shoreline development booms as Crescent Resources, Inc. (a Duke Energy subsidiary) develops the forest land around the lake into small towns.

Although malaria is no longer a problem (it could be if immigrant workers bring it in) there are some 25 mosquito borne (arboviral disease agents like EEE and SLE) that can have up to 80% mortality rate in humans. Mosquito control is not and never will be a luxury.

The Future

A new Lake Keowee Mosquito Control Facility in under construction near Oconee Nuclear Station to replace the existing structure at "mosquito point" soon to be part of a new upscale Crescent Resources, Inc. residential development. The structure is large enough to store two boats and trailers and will have a restroom, chemical storeroom and a break area with table sink, refrigerator and microwave. We'll also have it wired for a computer terminal. The new Lake Keowee Mosquito Control facility should be open by mid-May.

We are planning to replace the old facility on Lake Wylie in 2000 with a structure similar to the one at Keowee. The small wooden lake Wylie facility was a salvaged one room commercial dinner/store moved to the mosquito control program property in the mid 1960's. Termites have over the years made good use of it. In 2001 and 2002 we hope to upgrade the facilities on Wateree and James. By 2003, or so, I hope by the time I'm gone we will have a modern mosquito control infrastructure on our program lakes. Frank Boldridge would surely smile and think it was a lot different from the old isolated tent camps of the 1920s (pay for a crew member then was $0.12 cents per hour, now it's about $11.00 per hour). I like to think he would be darn proud of Duke's continued commitment to the public health needs of those folks that live on the shorelines and use the reservoirs that Duke Power calls home.

We hope you will find time to add a few notes to this, bringing the mosquito control history at Duke Power up to date since this writing in early 1999. Please reseal everything for the next group of folks who may enjoy looking at these materials during the 100th Anniversary year in 2023. As good scouts, we have tried to leave the program a little better than we found it. Good luck as you carry on the long held Duke Power tradition of "Citizenship and Service" into the next century.

Ken Manuel
Mosquito Control Program Leader

April 4, 1999

Exhibit 2

1

DUKE POWER COMPANY
IMPOUNDMENT MOSQUITO CONTROL PROGRAM

MOSQUITO CONTROL PROGRAM TEAM:

Ken Manuel, Program Team Leader
Tommy Bowen, Asst. Program Team Leader
Robert Whiteford, Lake Greenwood Operations Team Leader
Tommy Gunter, Lake Greenwood Operations
Bob Barden, Consultant (L & B Services, Inc.)

DUKE POWER COMPANY
ELECTRIC SYSTEMS SUPPORT - ENVIRONMENTAL DIVISION,
SCIENTIFIC SERVICES - AQUATIC ECOLOGY

April 9, 1996

DUKE POWER COMPANY IMPOUNDMENT MOSQUITO CONTROL PROGRAM

I. Introduction

The DPC mosquito control program was organized in 1923 in response to the spread of malaria by the malaria mosquito Anopheles quadrimaculatus in the Catawba River basin.

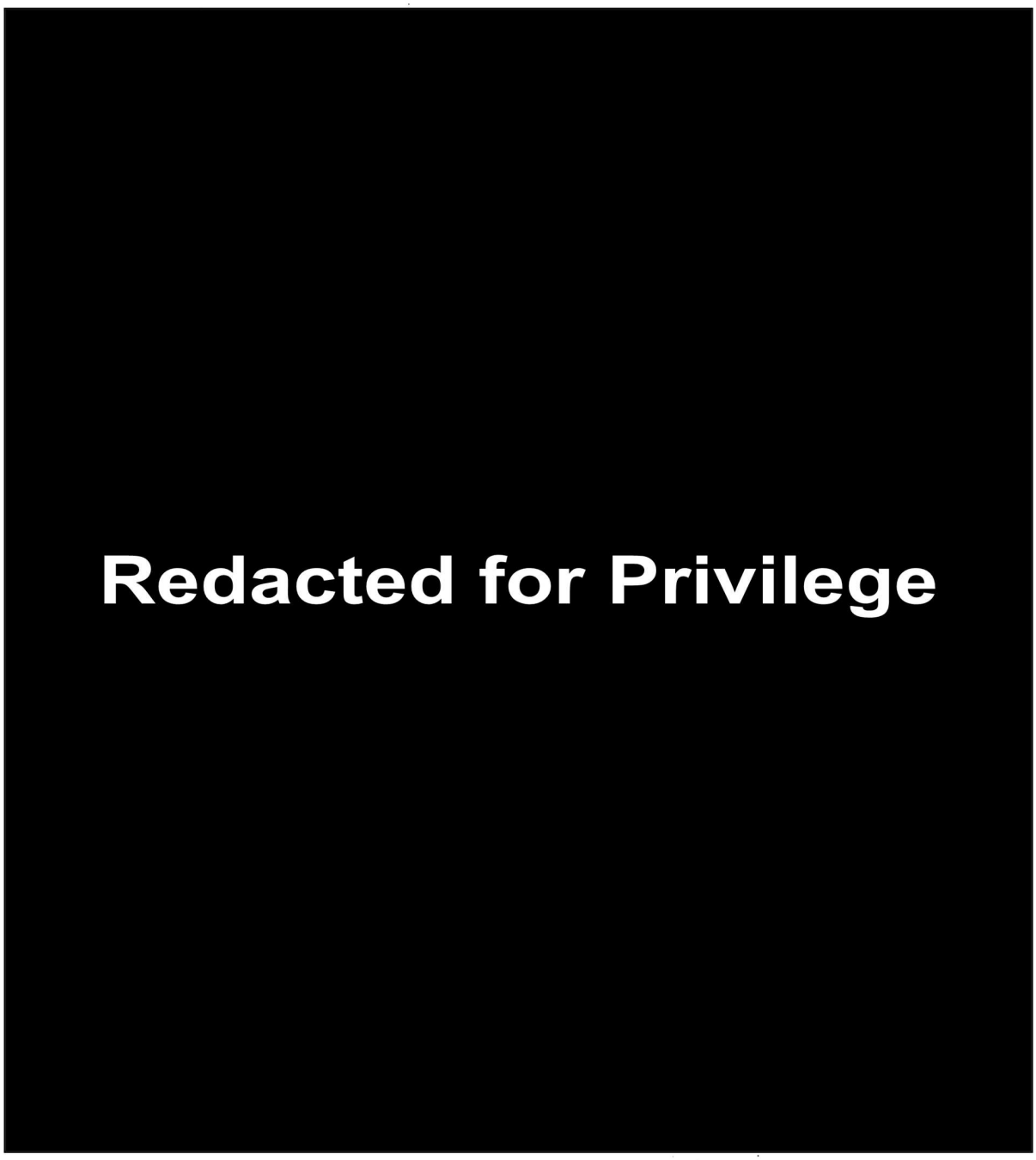
Today, malaria is no longer considered a major disease threat in North America due to ongoing mosquito control efforts and excellent public health prentitive medicine, however, by July 1995 four cases have been reported this year from Mecklenburg County. The Worls Health Organization reported over 400 million cases worldwide in 1994. In contrast, this is the equilivant of the entire population of the United States and Canada.

Various mosquito species breeding in and around Duke Power impoundments have the potential to transmit several devastating human diseases such as: several encephalitid (sleeping sickness) diseases, malaria, Dengue fever, and yellow fever, to name a few of the more commonly known diseases. The United States Centers for Disease Control considers the United States threatened by a Dengue epidemic. Some 50,000 cases have been reported in Central America during the 1995 Summer. A highly effective mosquito vector of Dengue and other mosquito borne diseases, recently introduced into North America from Asia, Aedes albopictus, is now well established in North Carolina. Mosquitos also commonly transmit diseases and parasites which affect animals such as dog heartworm.

Legal requirements in both North and South Carolina require impoundment operators to control mosquito populations which interfere or effect human activities or public health. To comply with the intent of these regulations, DPC maintains an active mosquito control program on its larger dendritic impoundments which have extensive or growing shoreline urbanization. The purpose of Duke Power's mosquito control program is expressed as follows,:

"The purpose of the Duke Power Company mosquito control program is to provide a scientifically sound, cost effective program that achieves significant reduction in disease vector mosquito populations to below nuisance levels on project impoundments; to offer timely response to customer mosquito concerns; and to comply with all state agency mosquito control regulations."

II. Legal requirements




Redacted for Privilege

Redacted for Privilege

III. Mosquito Abatement Program Description

A. Surveillance Techniques

1. Adult and larval mosquito surveillance surveys - Pre and post-control mosquito surveys are conducted to gather the data that will be used to determine mosquito population trends. Standard surveillance techniques are as follows:

   a. Adult light trap collections - traps are located next to suspected mosquito breeding habitat within project boundaries. They are operated twice a month during mosquito breeding season. Partnerships can be developed with full time lake homeowners to run traps, collect and ship samples.

   b. Adult resting shelters - Resting shelters are established near breeding habitat and used to monitor the seasonal abundance of reservoir breeding species.

   c. Larval collections - Pre and post control larval collections (larval dip collections) are made in selected larval habitat sites to monitor the seasonal abundance of reservoir breeding species. Lake resident complaints will be helpful in the identification of breeding sites.

2. Surveillance Results

   The results obtained from surveillance are needed to: 1) identify breeding habitats; 2) determine the onset of breeding and establish lifecycle rates; 3) estimate larval and adult populations; 4) determine species composition; and 5) provide other life

history data. This information is used to direct abatement spray crews to the appropriate mosquito breeding areas and time the control measures for maximum efficacy. The larval collections are made at strategic locations throughout the breeding season and will provide information used to determine the success of abatement measures, timing of additional treatments, and determine the end of the breeding season.

The adult light trap collections and resting shelter collections will provide information about the actual nuisance populations of adult mosquitoes. The larval collections may not be effective in identifying all the available larval habitat or the effectiveness of the control program.

Further the adult and larval collections are used to determine if the mosquitoes are impoundment or non-impoundment breeders. If mosquitoes are non-impoundment breeders, then customer complaints will be handled through a site visit by a staff member. The staff member will explain that DPC only controls impoundment breeders and will guide the customer to an understanding of basic mosquito habitat identification and homeowner control measures.

B. Mosquito Abatement Techniques - The following standard mosquito abatement techniques may be applied in specific situations and or circumstances as necessary to control nuisance mosquito populations within impoundment boundaries.

1. Larval control - BTi (a biological pesticide specific to mosquito larvae) applications to suspected larval habitats from specially rigged shallow draft spray boats is the normal mode of pesticide application in Duke Power impoundments. In addition, BTi may be applied by backpack sprayer and dry briquette depending on local need.

2. Adult control - Adult control activities will not normally be conducted. During a mosquito vectored disease outbreak, adult control activities will be contracted to a qualified consultant.

3. Source reduction - The elimination of mosquito breeding habitat is a major focus of a mosquito control program. This may include, but not limited to: selective clearing of shoreline and littoral zone vegetation, draining low areas, ditching and

ditch maintenance, filling, dredging, or draining "cut-offs", and the periodic removal of debris and flotage from impoundments.

4. Water level manipulation - Water level management of impoundments may consist of annual surcharge to strand flotage which provides protection to larvae during constant level operations or fluctuation and recession of about 0.1 foot per week, during the mosquito breeding season.

C. Summary of Mosquito Abatement and Additional Required Activities

In summary, two person control teams operate specially equipped mosquito pesticide spray boats. These boats travel along specified reservoir shoreline areas and apply pesticide (BTi) to mosquito breeding habitat within impoundment boundaries as identified through the surveillance program. The spray boats operate from May to October of each year. Control teams are composed of experienced seasonal employees, many of whom have been working for DPC as pesticide applicators for many years. The program has two operation centers: Lake Norman and Lake Greenwood (TABLE 1).

The L. Norman mosquito program staff is composed of one program leader/scientist, one maintenance and temporary employee supervisor, and fourteen seasonal temporary employees assigned to Lakes James, Norman, Wylie, Wateree, and Keowee. A separate mosquito control program on Lake Greenwood includes one program supervisor, one senior technician, and two seasonal temporary employees.

During mosquito season both programs together employ 20 individuals. During the remainder of the year there are four full time employees in the program, two stationed at the Lake Norman mosquito operations and two stationed at at the Lake Greenwood mosquito operations.

In addition to mosquito control activities the mosquito control program assists in the removal of hazards to navigation (floating debris, trees, abandoned structures, etc.) and trash within impoundment project boundaries on Catawba River impoundments. Mosquito spray crews will identify hazards, tie hazards off to the shoreline and report the location to ESS-Lake Management for removal. Teams also pick up containers and other trash that can contain water and serve as mosquito breeding habitat. Approximately 1000 large bags of trash were removed from the program lakes during the 1995

program year.

D. Vehicles/Boats - One vehicle is utilized but not limited to the collection of adult and larval samples, to pull program boats, pull logs from lakes, transport pesticides/supplies, and travel to investigate customer complaints/concerns.

Nine boats are used in the program. Seven full time spray boats, one survey boat, and one backup spray boat.

E. Communications - All boats and trucks are linked by mobile phone.

F. Safety

1. Chemical storage - Storage of all program chemicals in a NCDA approved storage facility.

2. Boat itineraries - Search and rescue response is based on predetermined daily schedules supported by in-boat phones.

3. Boat handling training - DPC training

4. Pesticide handling - DPC training

5. Pesticide container disposal - local certified landfill.

G. Pesticide Applicator Training and Certifications - Key program personnel will obtain all state required certifications and training to maintain a Certified Pesticide Applicators License in Aquatic and Public Health categories in both North and South Carolina.

H. Laboratory support

1. Taxonomy - Taxonomic specialists will conduct taxonomic analysis of collected mosquito specimens and summarize findings.

2. Pesticide residue analysis - Contract as needed.

I. Public Education - Public education about the DPC mosquito abatement program will be highlighted in brochures, news releases, bill inserts and other media. This information will inform customers about program activities, homeowner mosquito sanitation, and other related vector control and public health information

dealing with mosquitoes. Presentation materials will be developed for professional as well as lay audiences, e.g. homeowner associations, service clubs, and school groups.

J. Program Facilities - Facilities will be required to maintain and store program equipment (boats, pumps, motors, etc.), fabricate special program equipment, store pesticides, collect and remove floating debris (trees, abandoned structures and trash), and maintain program records.

K. Program Budget - A budget information will be outlined in an annual budget summary.

L. Annual Report - An annual report will summarize program highlights, program modifications, and present recommendations. The annual report will include surveillance data and analysis, and other data associated with program operations (These data may include: impoundments/acres treated, complaints investigated and significant resolutions, source reduction acreage, training accomplishments, license recertification credit earned, presentations, and other activities highlighting program accomplishments.)

M. Contract consulting services for mosquito control technology are provided by L & B Services, Inc.

TABLE 1. Mosquito Control Program Elements by Impoundment Control Area

Lake	Structure	Boats	Employees	Comments
Catawba River Operations				
James	boathouse	1	2	TP*Spray Crew/HDR**
Norman	boathouse	3	6	TP Spray crews/HDR
Norman	shop/storage	(1 truck)	2	Admin./maintenance/ complaint investigation
Wylie	boathouse	1	2	TP Spray crew/HDR
Wateree	boathouse	1	2	TP Spray crew/HDR
Kweowee-Toxaway Project Operations				
Keowee	boathouse	1	2	TP Spray/HDR
Lake Greenwood Operations				
Greenwood	boathouse***	2	3	Spray/HDR/tree removal
Greenwood	shop/storage	-	1	Admin./maintenance/ complaint investigation

* TP = Tempoary Employee
** HDR = Hazardous Debris Removal
*** Boathouse facility leased from Greenwood County.

Document revised: April 10, 1996

Exhibit 3

CARL V. REYNOLDS, M. D.
SECRETARY-TREASURER
AND
STATE HEALTH OFFICER

GEO. M. COOPER, M. D.
ASST. STATE HEALTH OFFICER

NORTH CAROLINA
STATE BOARD OF HEALTH
RALEIGH

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HUBERT B. HAYWOOD, M.D. . . . RALEIGH
JOHN LABRUCE WARD, M.D. . . . ASHEVILLE
C. C. FORDHAM, JR., PH.G. . . . GREENSBORO

March 11, 1943

Dr. F. M. Boldridge
Duke Power Company
Dept. of Health & Sanitation
Charlotte, N. C.

Dear Doctor Boldridge:

I am in receipt of your sample of mosquito oil with the formula:

25% #2 fuel oil
20% gas oil
55% used auto oil.

At this time of year it will be impossible for me to test this sample; but, as soon as Anopheline breeding begins, I will test it on Anopheles quadrimaculatus.

As you probably know, the U. S. Public Health Service does not recommend any larvacide which contains Phenol; and, since coal tar or gas house tar is high in Phenol content, it is not recommended. The reason for this attitude is because Phenol not only kills mosquito larvae but has a tendency to steralize the water, killing plant and animal life in the water. It is known to be quite dangerous to fish.

We have found gas house tar a good larvacide, but it can only be used under certain specific conditions.

No. 2 fuel oil has been found to be the killing agent in the oil mixtures recommended, while the used crank case oil is merely a binder, a spreader, and repellent.

It will probably be a month or two before I can get this report to you.

Very truly yours,
D. F. Ashton
D. F. Ashton, Entomologist
Malaria Investigation and Control Unit.

WHEN IN RALEIGH VISIT YOUR STATE HEALTH DEPARTMENT

Exhibit 4

4) **Q: What chemicals are being used by Duke Energy to spray for mosquitoes during the warm weather months?**

A: Duke Power mosquito control teams spray the mosquito larvicide VectoBac 12AS (EPA Reg. No. 275-102). This material is formulated specifically for the control of mosquito larvae and does not effect non-target organisms. In areas intermittently not connected to the lake due to fluctuating water levels (known as wash-ups & cut-offs) the following larvicide materials may be applied when VectoBac is not practical: Altocid (EPA Reg. No. 2724-375-64833); Arosurf MFS (EPA Reg. No. 42943-8). Where feasible , mosquito fish are stocked in mosquito breeding habitat. Pre and post-spray surveys are conducted to determine efficacy of larvicide applications.

Q: Is Duke currently using a herbicide for aquatic plant control? If true, what is the product name? What areas of the lake is it being applied? How often is it being applied ? What year was it first applied and what product was used then?

A: Prior to the application of chemical control materials, Duke biologists survey for the possible introduction and spread of exotic non-native nuisance aquatic plants. Most of the species in this category are listed as noxious weeds by the federal and state governments and are controlled by the NC and SC Departments of Agriculture. If chemical control is necessary, all control operations are conducted in cooperation with appropriate state natural resource agencies.

Duke Power is not currently using herbicides in Lake Norman. During 1995 and 1996 Duke applied the herbicide Aquathol K to control approximately 30 ac of Najas minor. This herbicide is used to reduce the population of this target plant to below nuisance levels. No attempt is made to eliminate any plant species from the lake.

Q: Do these chemicals have any adverse effects on plankton or fish that inhabit Lake Norman waters?

A: Duke Power uses only EPA and State registered larvicides and herbicides. These chemicals are used at label rates in extremely shallow water mosquito breeding sites where the mosquito larvae are not usually accessible to fish. When used at label rate, these compounds do not effect the plankton or fish in Lake Norman.

5) **Q: Is Duke Power using "drawdown" as an aquatic plant management procedure [on Lake Norman].....?**

A: Duke Power is not using "drawdown" on Lake Norman to manage aquatic plants. Water level fluctuations on Lake Norman are the result of agreements with state natural resource agencies (the Rule Curve), and DPC response to weather events (heavy rainfall or drought) in relation to power production, flood control, and recreation needs. Water levels are managed by the Systems Operations Center based on the above.

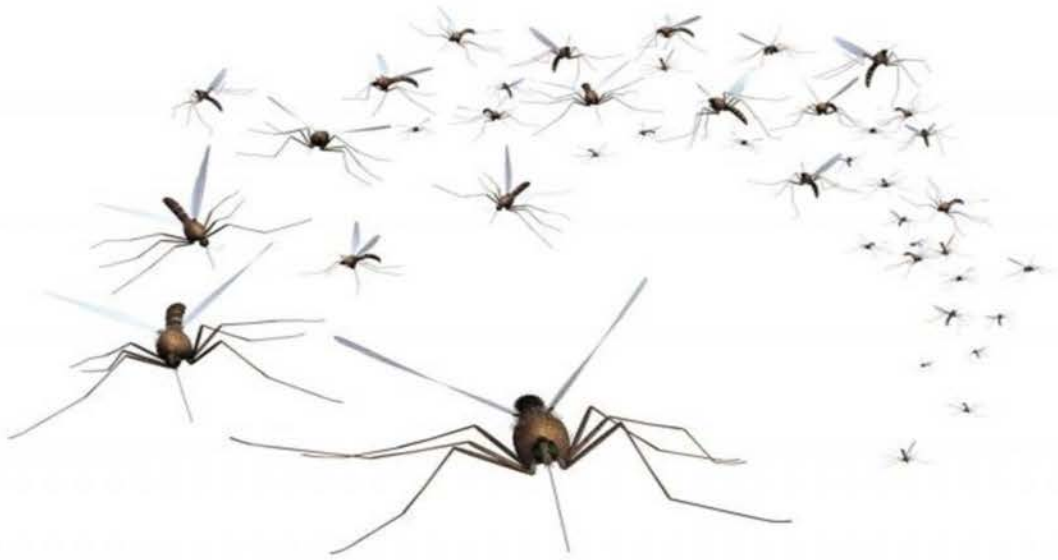
Q: Is it true that increased aquatic plant life would also increase the levels of oxygen which is one of the major components of a healthy and viable habitat in Lake Norman water?

A: The availability of adequate oxygen in Lake Norman, as in any lake, is critical to the survival and well being of aquatic plant and animal communities. Aquatic plants (higher plants and algae) produce excess oxygen during the day and consume oxygen during the night. Although, it does not have large populations of submerged rooted aquatic plants, Lake Norman is not oxygen limited due to phytoplankton oxygen production and normal water-atmosphere interchange.

Increased aquatic plant populations in the shoreline shallow water zone may cause a minor increase of oxygen in and

around the plant beds. A moderate increase in plant beds, however, would probably not produce a measurable effect on the total oxygen availability in Lake Norman. It must be remembered, extensive abnormal aquatic plant growth by exotic species reduces oxygen availability and if a large population of aquatic plants experience a die-off, oxygen depletion due to plant decomposition may cause fish kills and taste and odor problems.

Exhibit 5



Duke Energy Reservoir Mosquito Control Program: Data Summary 1998-2016

Joshua B. Bowen

Confidential

Mosquito Control Program: Data Summary

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Confidential

Introduction

During the summer and college winter breaks from 2008-2011 and years 2012-2013, I was employed as an intern in the Water Strategy, Hydro Licensing and Lake Services Department--Aquatic Plant and Mosquito Control Services group. I am now a contractor for the department through my employer, Theorem Geo Associates. As part of my responsibilities I was asked to review and summarize larvicide program operational data collected daily during the mosquito spray season by the on-water mosquito control crews for the years 1998 through 2016. This report is a summary of major program activities as reflected in crew route cycle time on each reservoir including consumable materials quantities and supporting activities listed in the Methods section below.

The 2008 mosquito control season marked the 85th anniversary for the Duke Energy Reservoir Mosquito Control Program inspiring an interest in an operational program summary. This data summary booklet helps provide an understanding of operational program trends during the past 19 years. The graphic presentation assists program managers to better predict larvicide materials needs and anticipate the challenges of meeting a program goal of a 10 day boat route cycle time.

Methods

The data used for this summary is based on daily mosquito control information collected during annual field operations (May through October) from 1998 through 2016. During these nineteen years, each mosquito control crew recorded the usage of Bti Liquid, Altosid Briquets, Altosid Liquid, Monomolecular Surface Film and Gasoline. The crews also recorded their route times in days, the number of hazards to navigation removed from the reservoirs, and the bags of source reduction trash collected.

This data was taken from daily work sheets (see example sheet on page 46) completed by each boat crew for the eight categories listed above. The data was compiled and totaled for each category by lake and year and recorded in Microsoft Excel. After recording the data in Excel it was used to create graphs to represent the information visually. These graphs were copied into Microsoft Word for the preparation of this booklet. A brief paragraph

describing each lake precedes the graphs presented in each lake section. The graphs are followed by a lake map. Graphs for the following lakes are presented: Lakes James, Norman, Wylie, Wateree and Keowee.

The data and graphs were saved in Microsoft Excel and Word and copied to CD. The CD and supporting paper documents are stored in the Mosquito Control Program fireproof cabinet along with the master copy of this booklet. In addition, the raw data collected from the field recorded on daily data sheets sorted by lake and year, are also filed in the fireproof cabinet (Aquatic Ecology FILE A, Drawer 1 and 2, Mosquito Control Program Documentation). The Mosquito Control Program fireproof file cabinet is located in the Environmental Monitoring area of the Duke Energy Environmental Center- McGuire Nuclear site.

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Discussion

Graphs summarizing annual category data for each of the five operational lakes are presented in the lake sections on pages 6-41.

The mosquito control program has used the following total quantities of materials during control operation activities from 1998 through 2016. These summaries were compiled from the Nineteen Year Summary graphs found on page 42:

- 271.36 gallons of Bti Liquid,
- 49,973 Altosid Briquets,
- 34.95 gallons of Altosid Liquid,
- 290.86 gallons of Monomolecular Surface Film,
- 65,827.7 gallons of Gasoline.

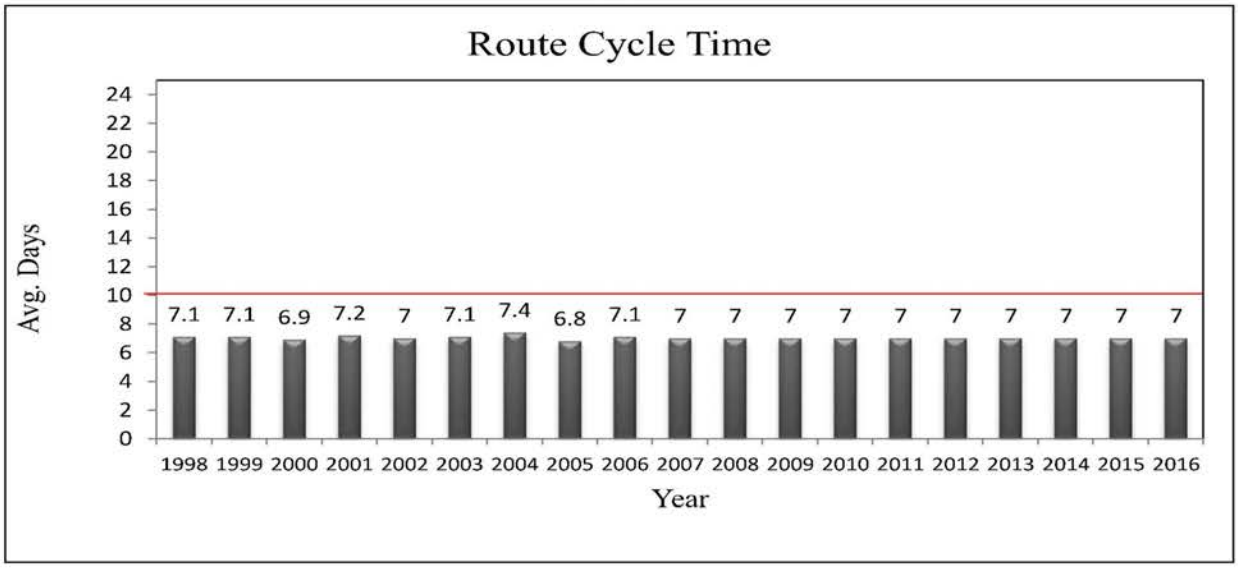
Removal of hazards to navigation and source reduction materials during the same period provided the following information:

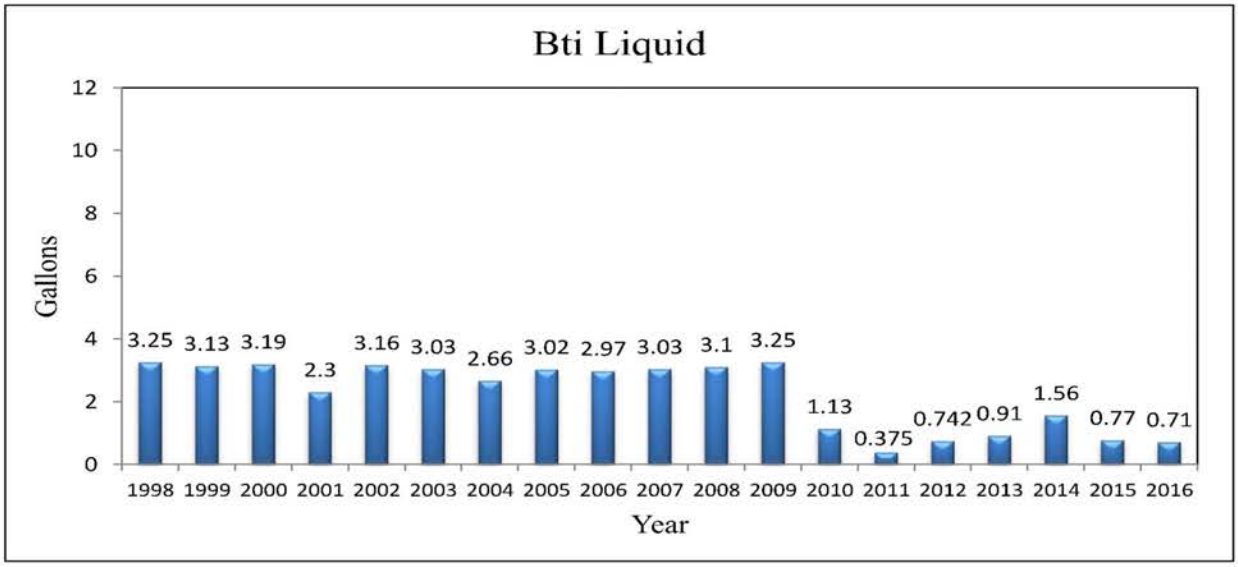
- Removed 781 hazards to navigation.
- Removed 19,574 bags of source reduction trash representing an estimated 978,700 lbs. of debris materials removed from the five reservoirs hosting mosquito larvicide control activities.

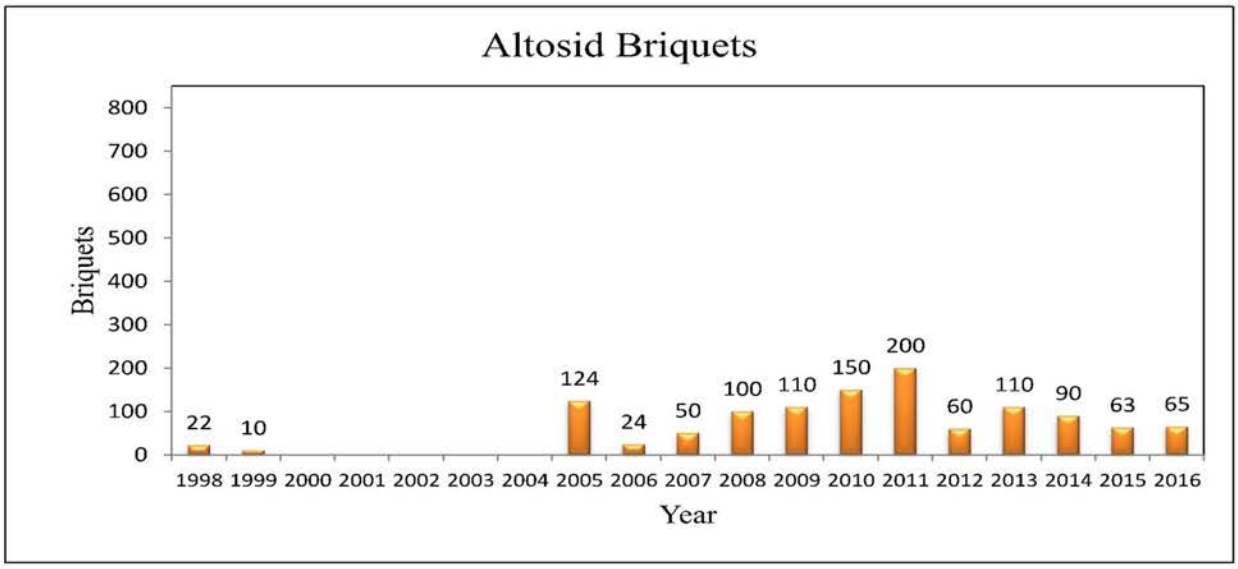
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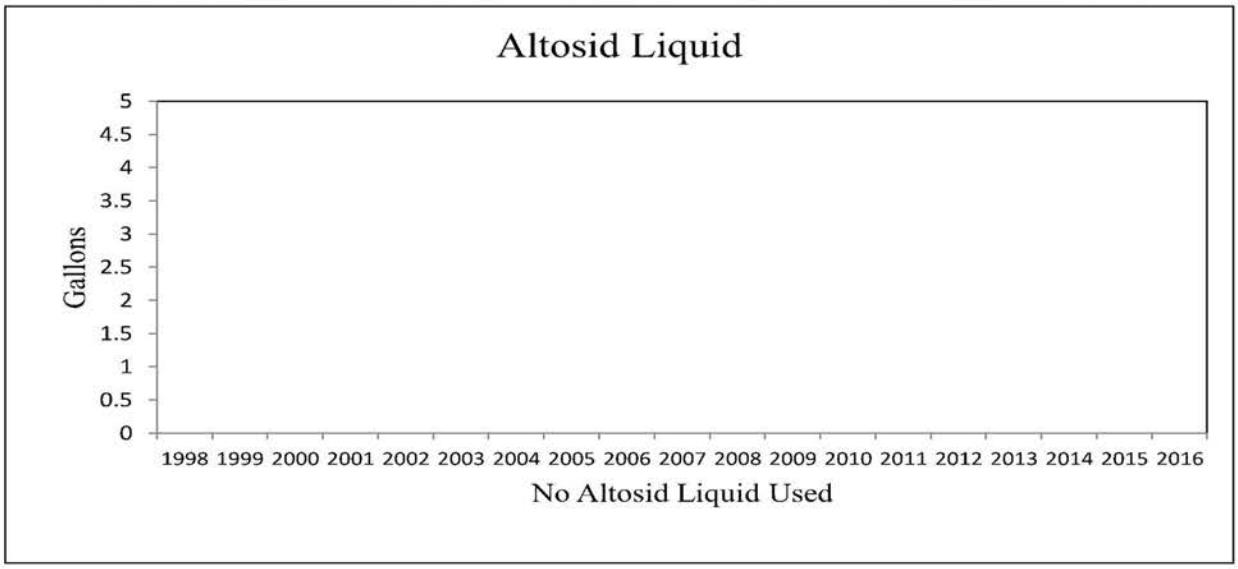
Lake James

Lake James is named for James B. Duke, a founder of Duke Power Company. The lake was completed in 1923 taking a total of seven years to build. The lake is approximately 6,812 acres with 150 miles of shoreline. Lake James required the construction of three dams: Linville Dam, Paddy Creek Dam, and Catawba Dam. The lake is located on the McDowell-Burke County line in North Carolina, and is surrounded by these two counties. One mosquito control boat crew is assigned to Lake James.

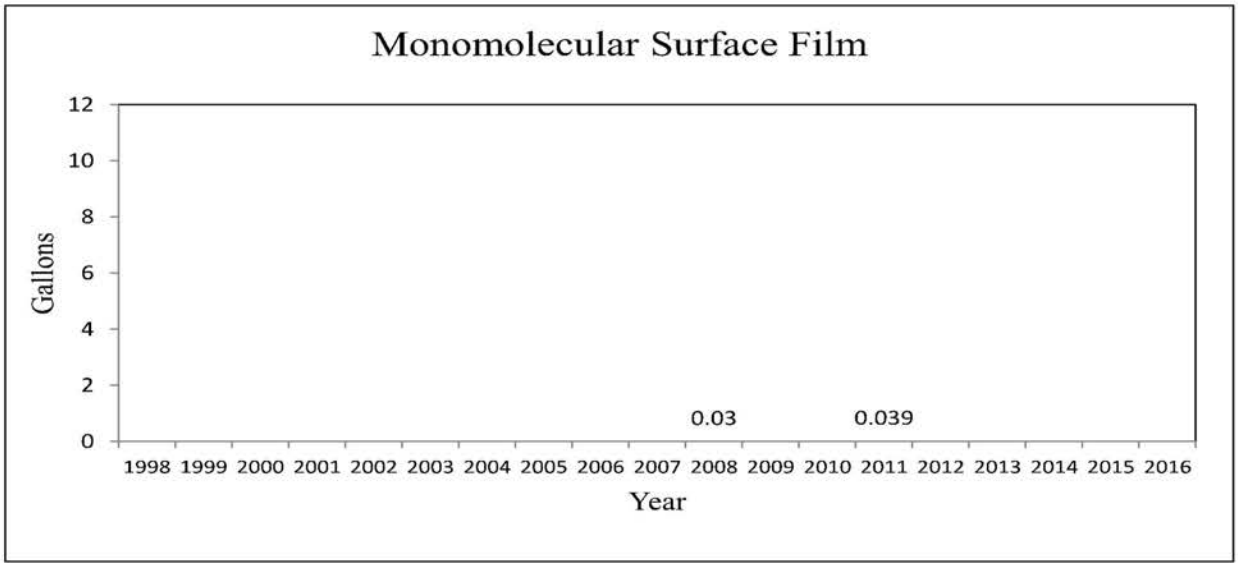


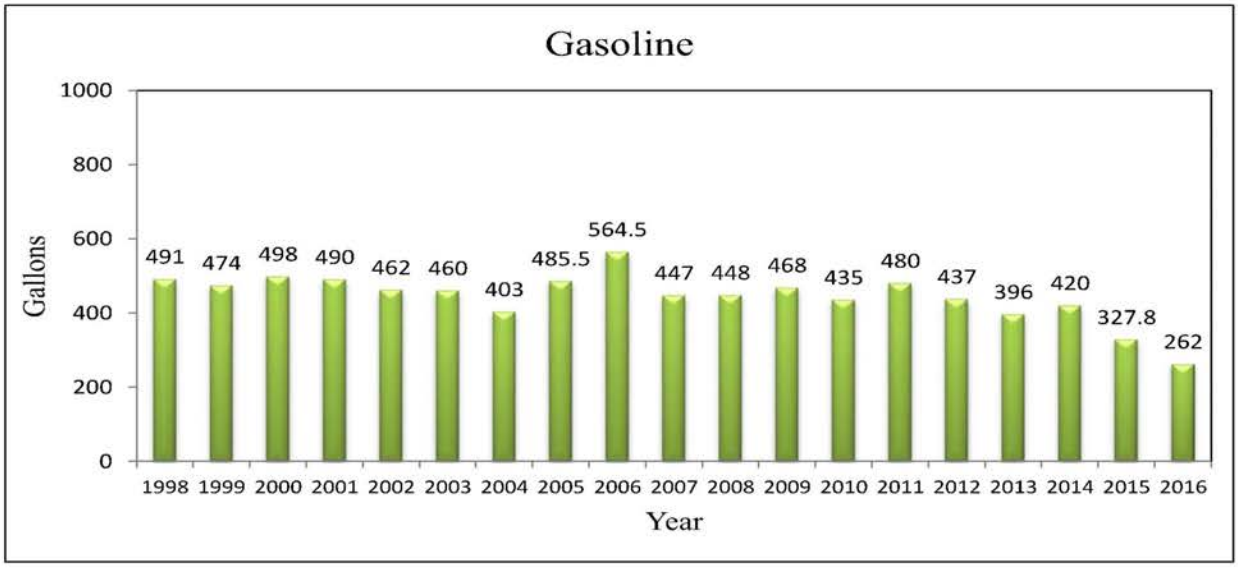


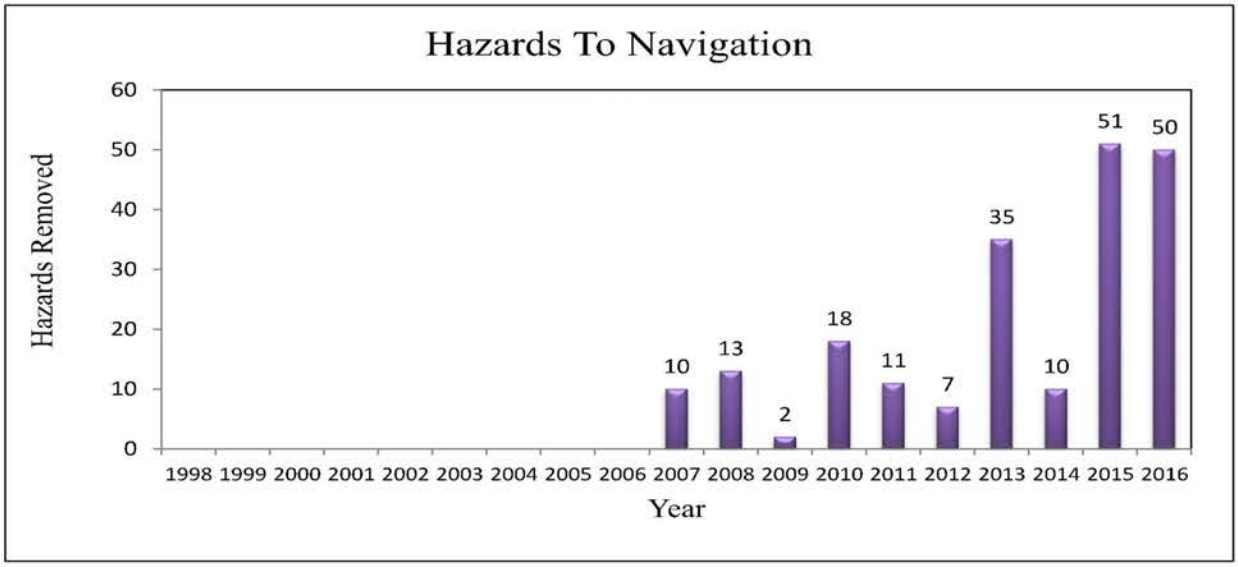

Altosid Briquets
Briquets
800
700
600
500
400
300
200
100
0
22
10
124
24
50
100
110
150
200
60
110
90
63
65
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

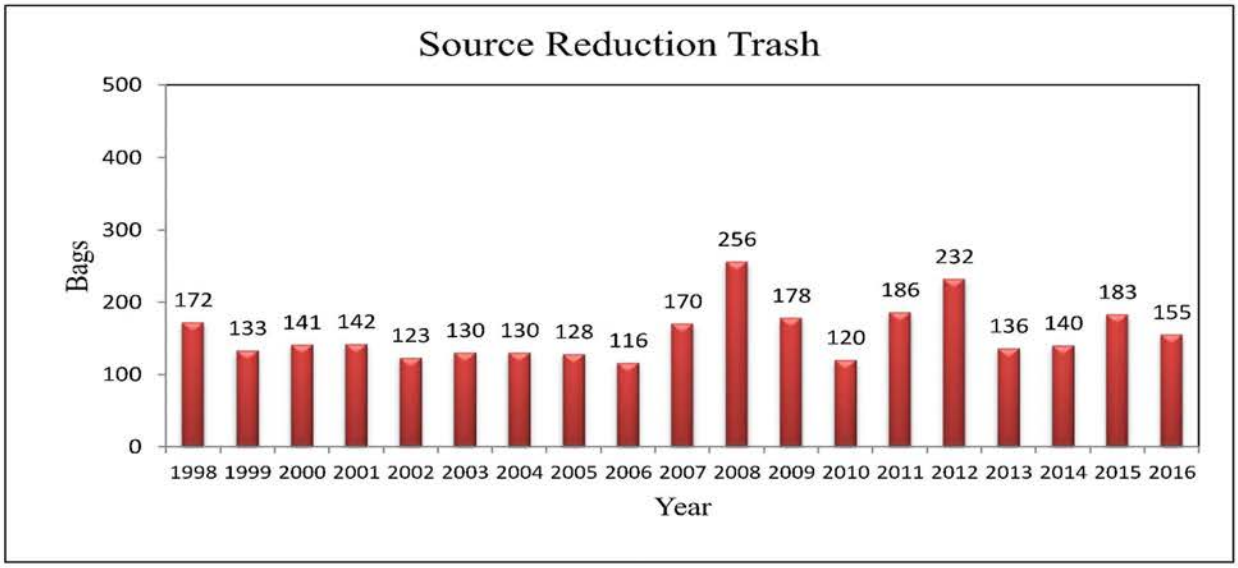

Altosid Liquid
Gallons
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
No Altosid Liquid Used

Lake James


Monomolecular Surface Film
Gallons
12
10
8
6
4
2
0
0.03
0.039
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year


Gasoline
Gallons
1000
800
600
400
200
0
491 474 498 490 462 460 403 485.5 564.5 447 448 468 435 480 437 396 420 327.8 262
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

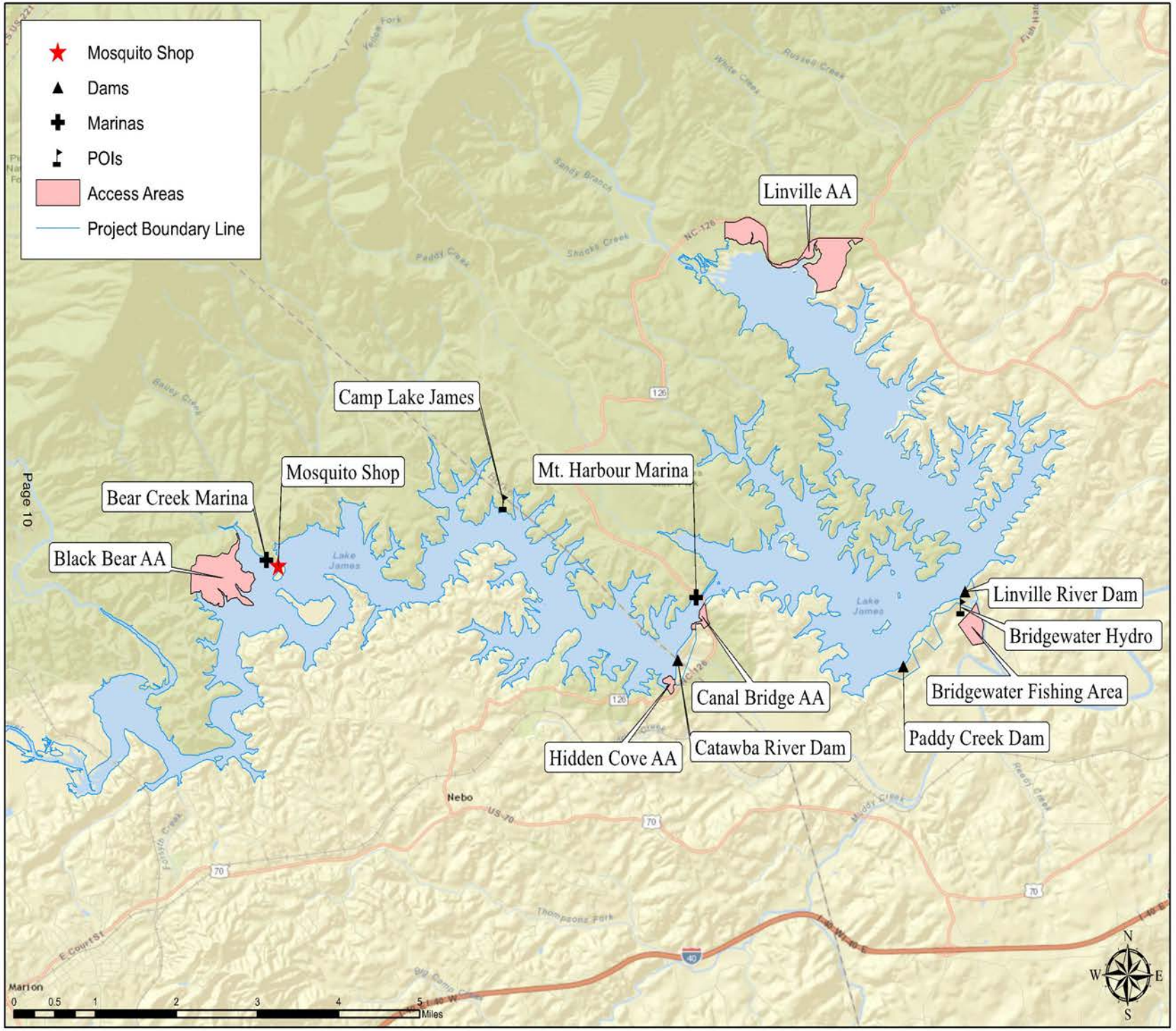

Hazards To Navigation
Hazards Removed
60
50
40
30
20
10
0
10
13
2
18
11
7
35
10
51
50
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year


Source Reduction Trash
Bags
500
400
300
200
100
0
172
133
141
142
123
130
130
128
116
170
256
178
120
186
232
136
140
183
155
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

Lake James

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Lake James



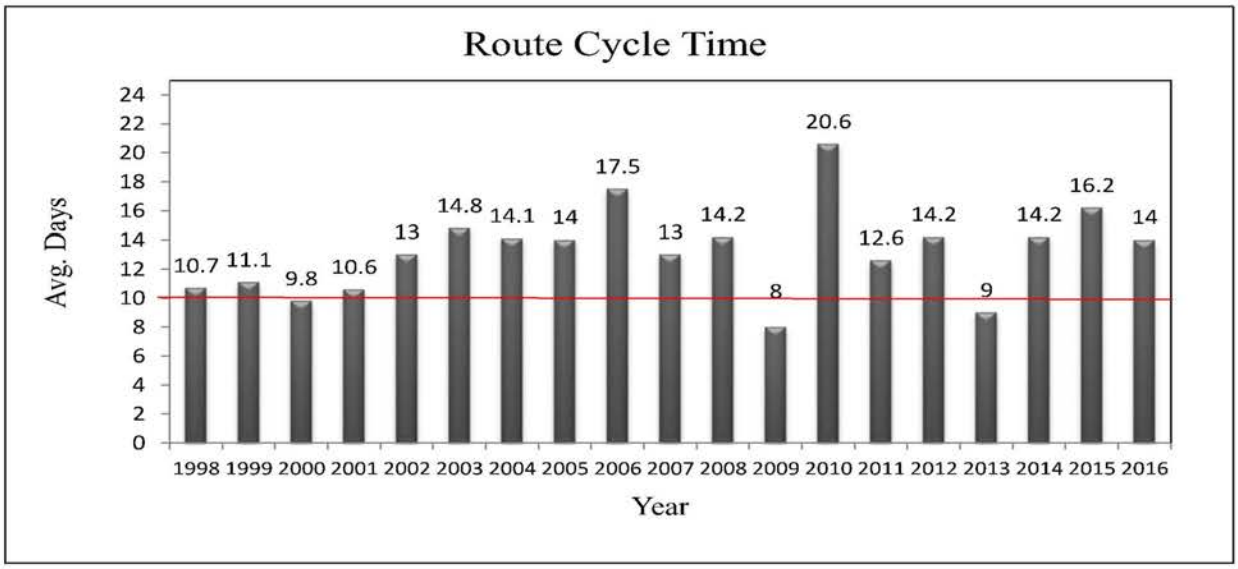
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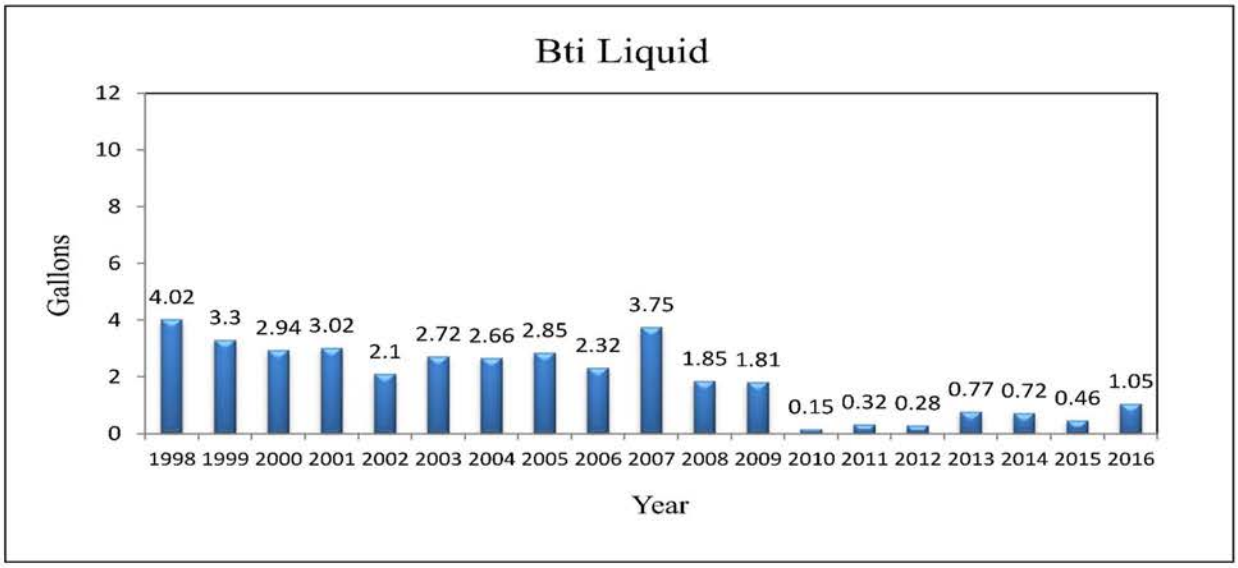
Lake Norman

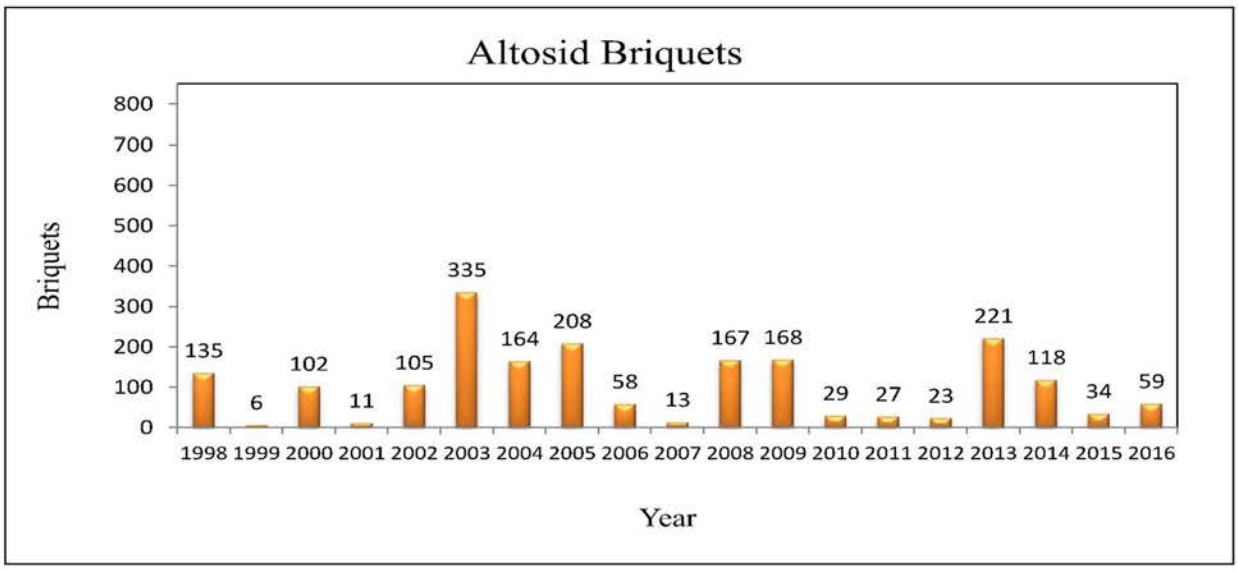
Lake Norman was created in 1963 by damming the Catawba River with the construction of Cowans Ford Dam. It's named after Norman Cocke, a former Duke Power president. Lake Norman is the largest man-made body of fresh water in North Carolina, nicknamed the "inland sea". The lake has a surface area of more than 32,475 acres, with a shoreline of 520 miles. It is almost as large as all the other 10 lakes on the Catawba combined. Lake Norman provides drinking water to Lincoln County, Davidson, Mooresville, Charlotte-Mecklenburg, and Huntersville. There are three electric generating stations on Lake Norman: Cowans Ford Hydroelectric Station, Marshall Steam Station, and McGuire Nuclear Station. Lake Norman is surrounded by four counties: Lincoln, Mecklenburg, Catawba and Iredell, North Carolina. Three mosquito control boat crews are assigned to Lake Norman.

Lake Norman West (Boat #1)

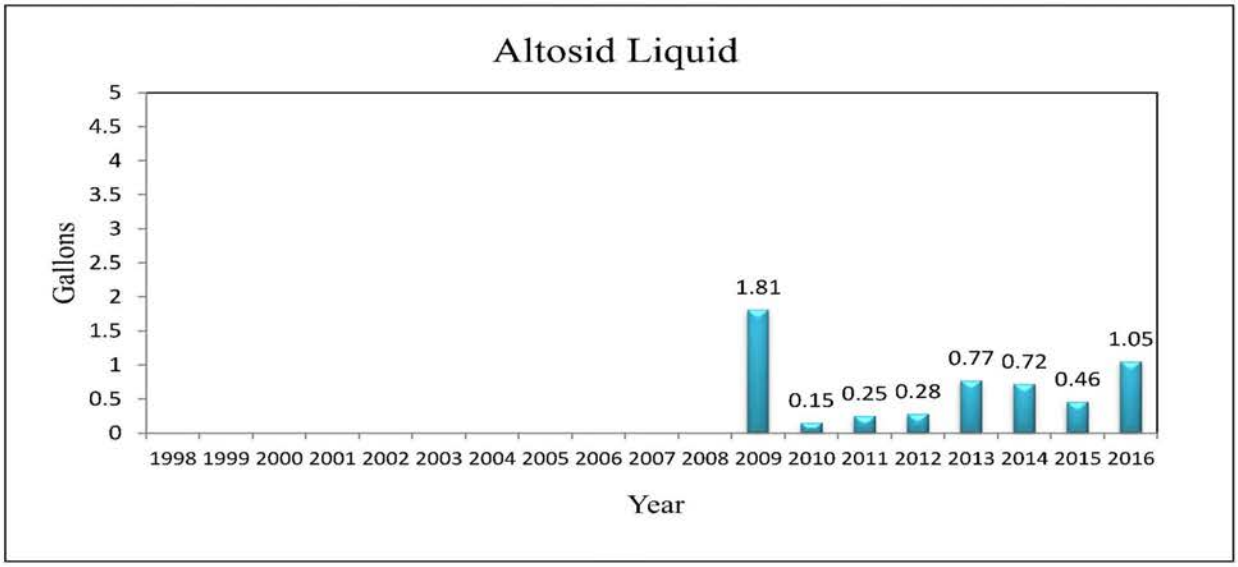


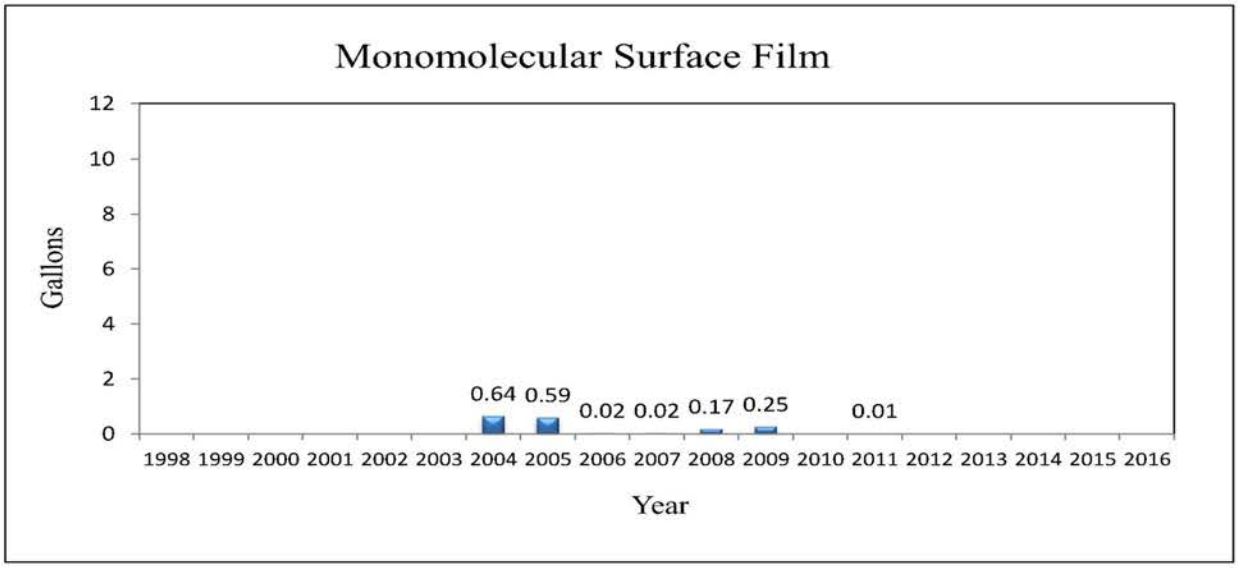
Lake Norman
Crew 1





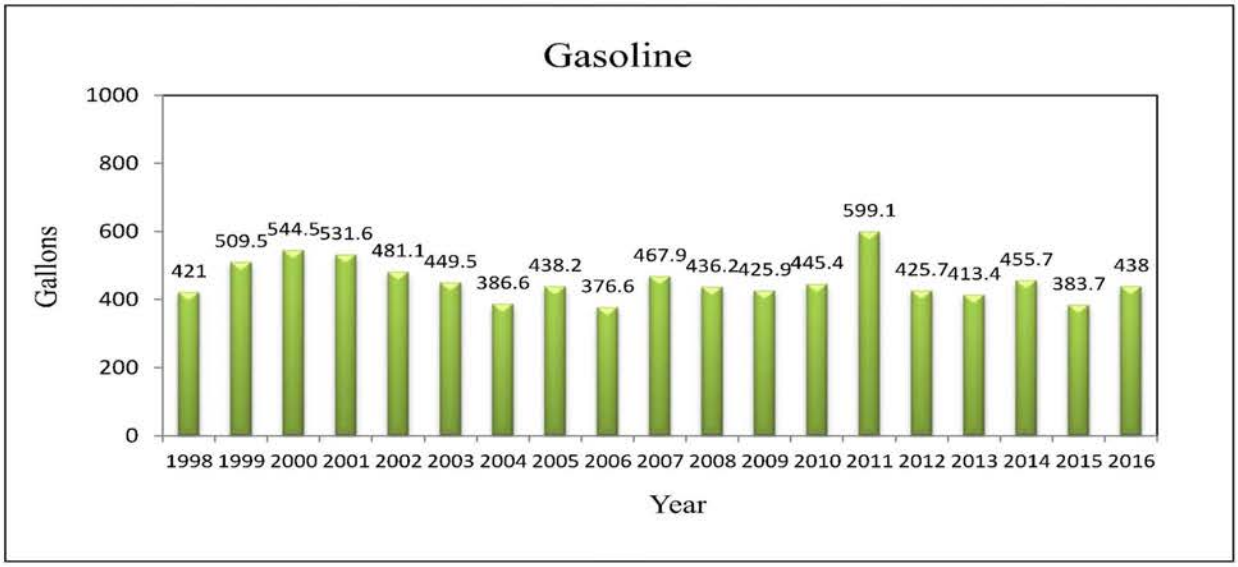
Lake Norman
Crew 1

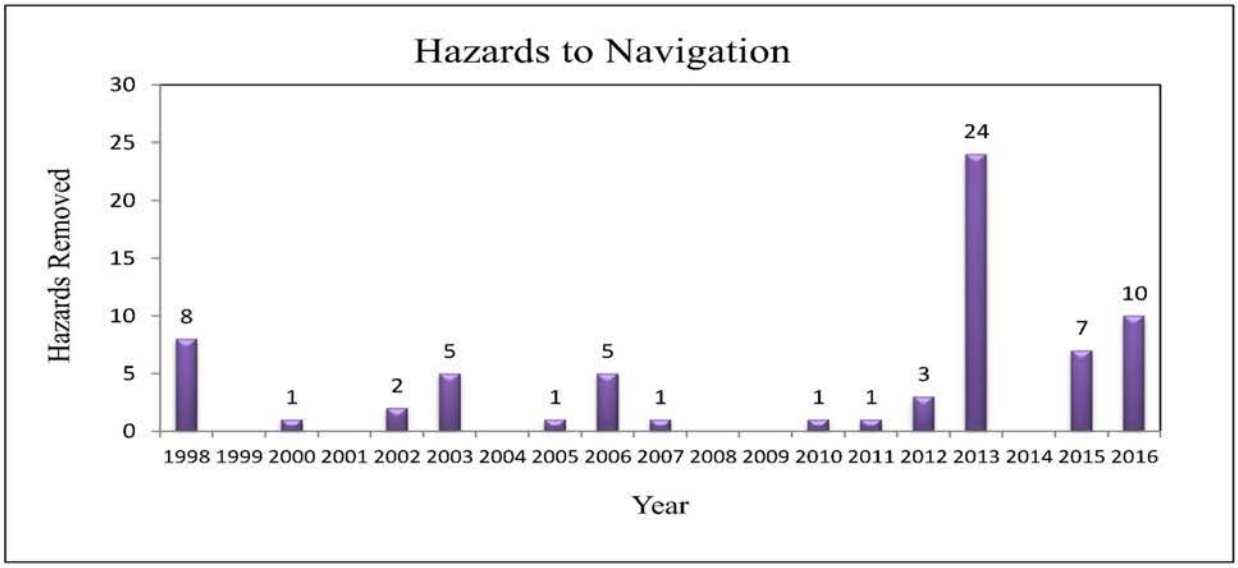




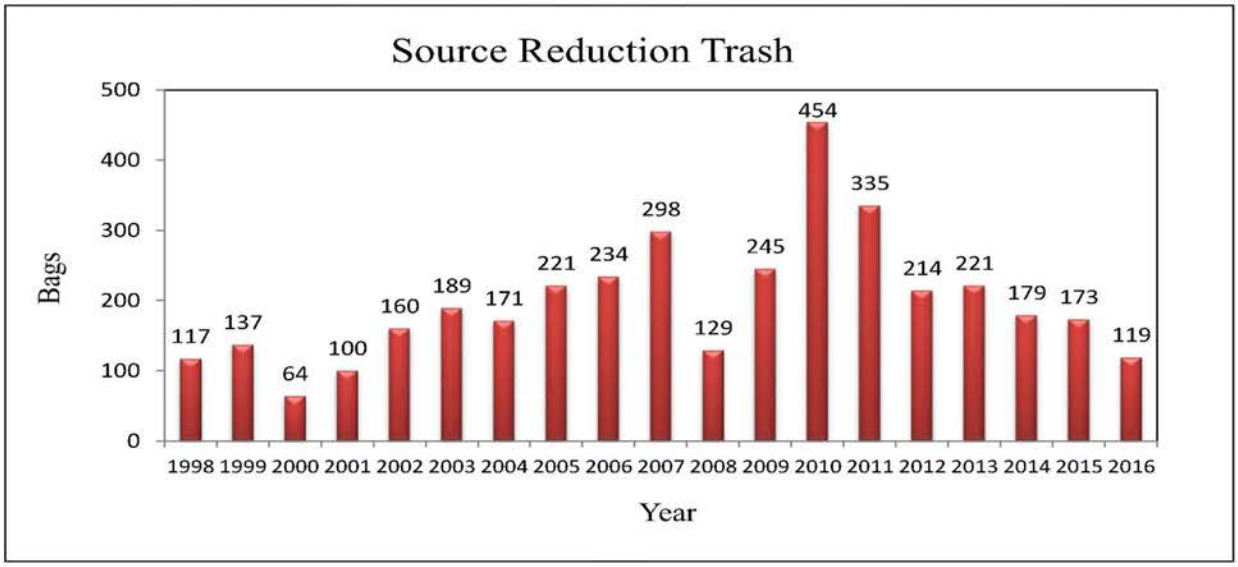
Lake Norman
Crew 1

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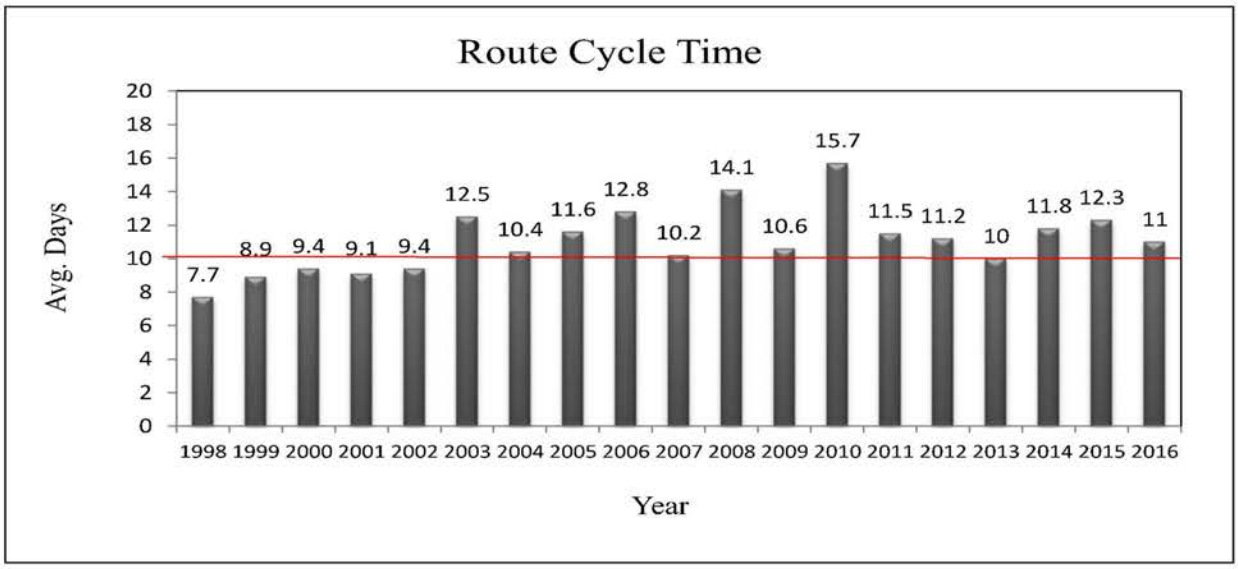


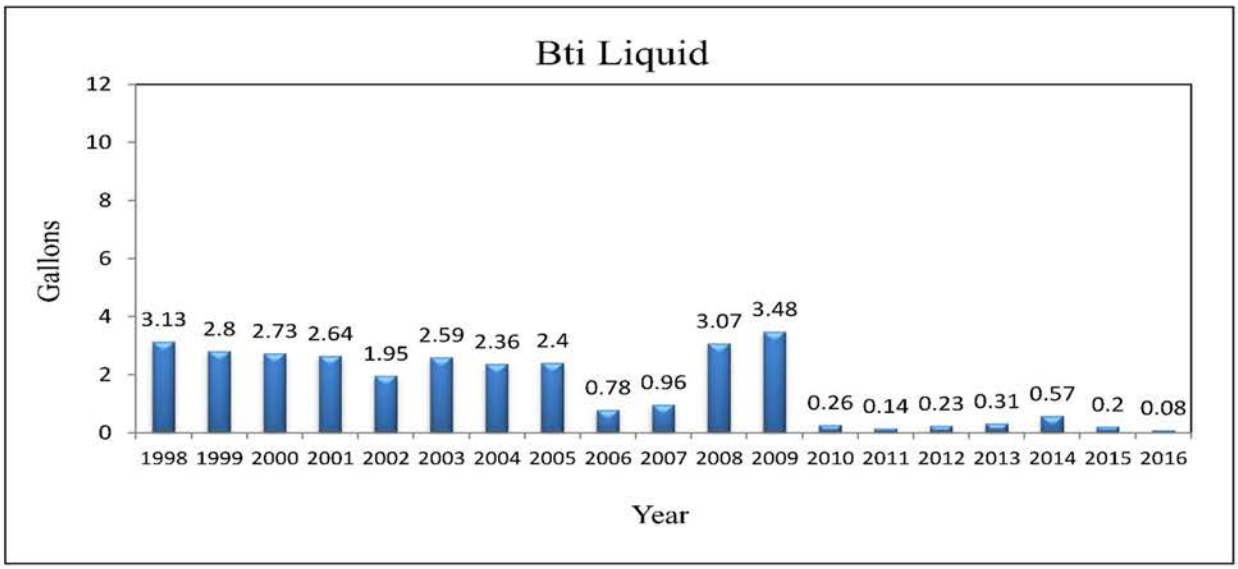
Lake Norman
Crew 1



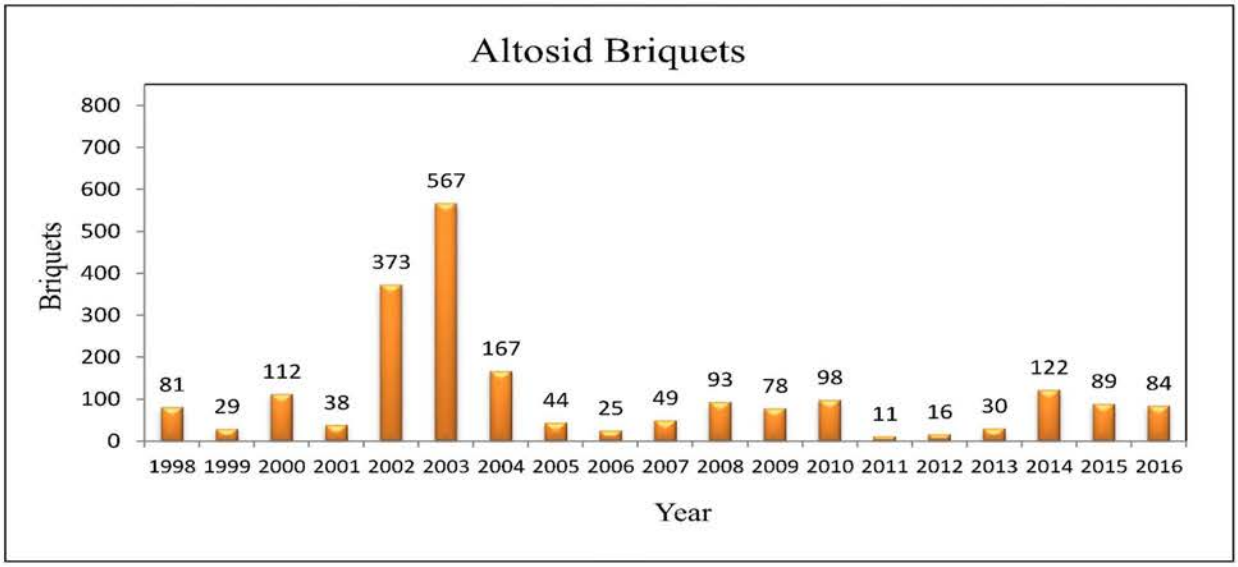
Lake Norman
Crew 1

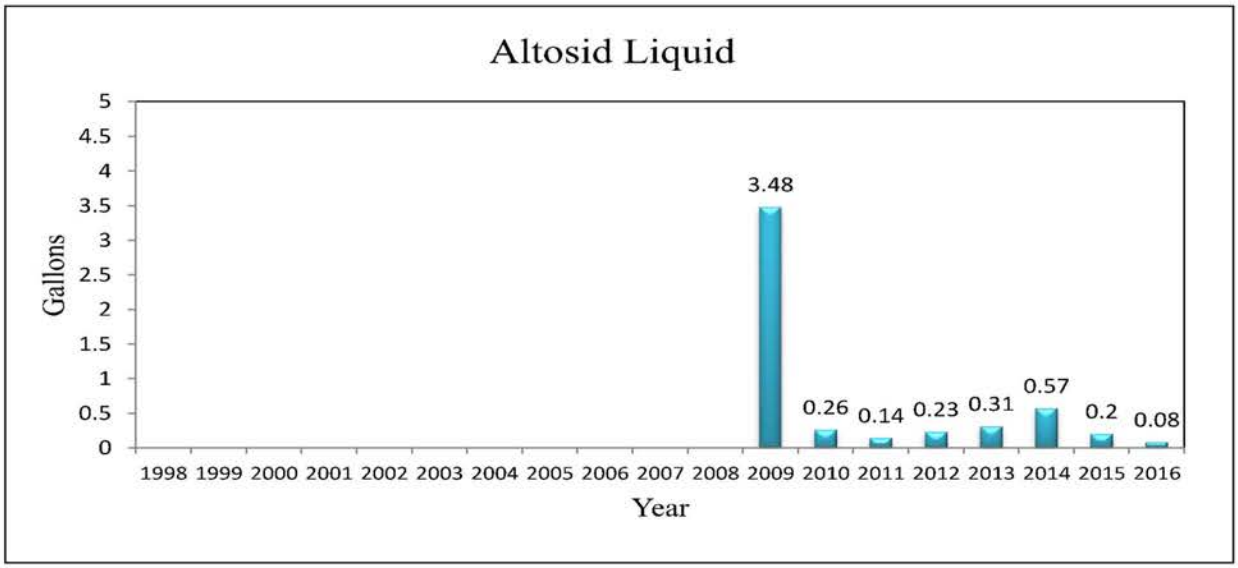
Lake Norman East (Boat #2)





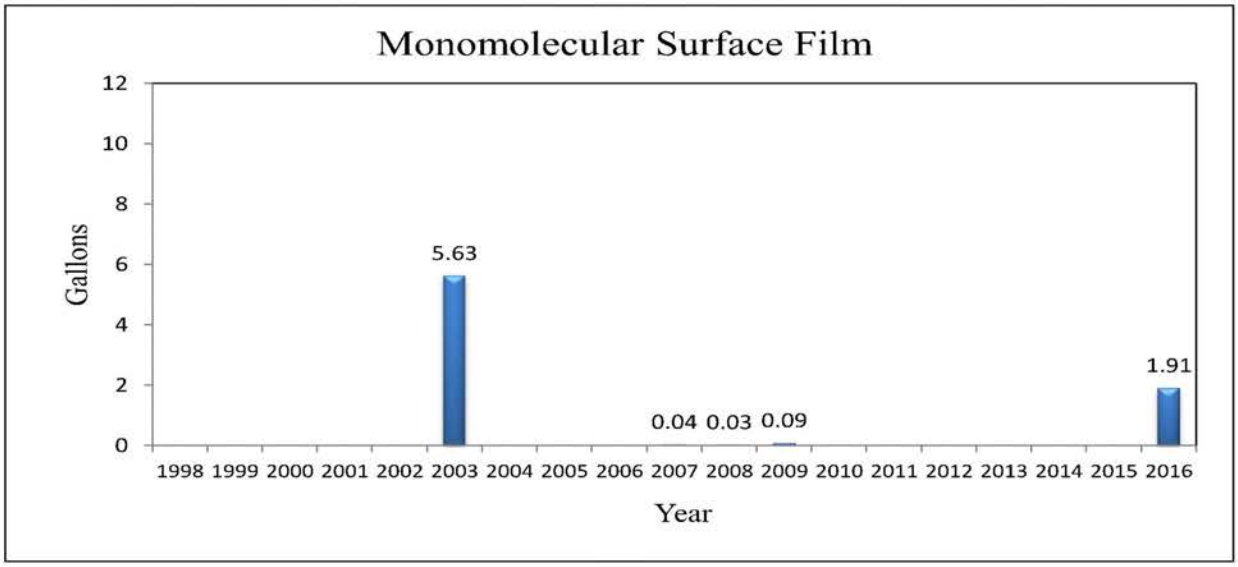
Lake Norman
Crew 2

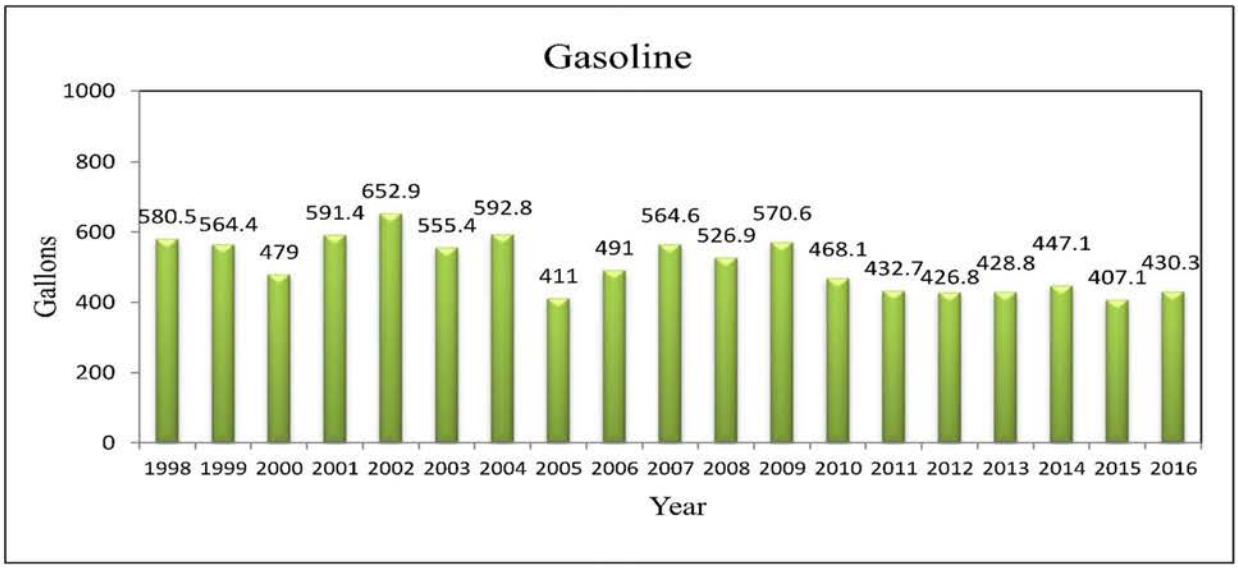




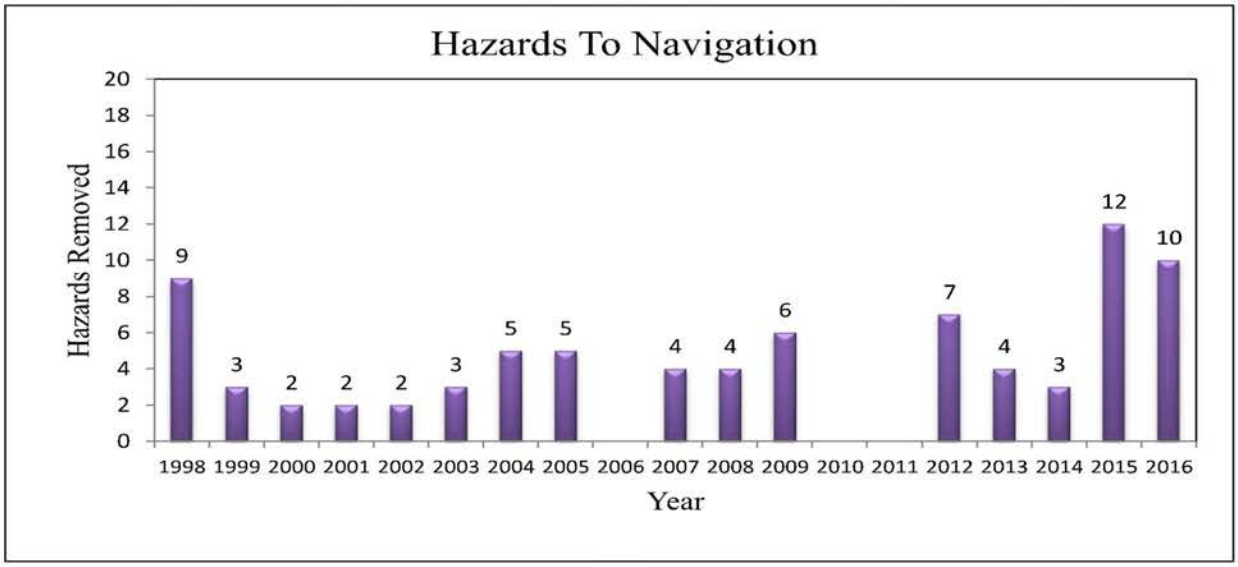
Lake Norman
Crew 2

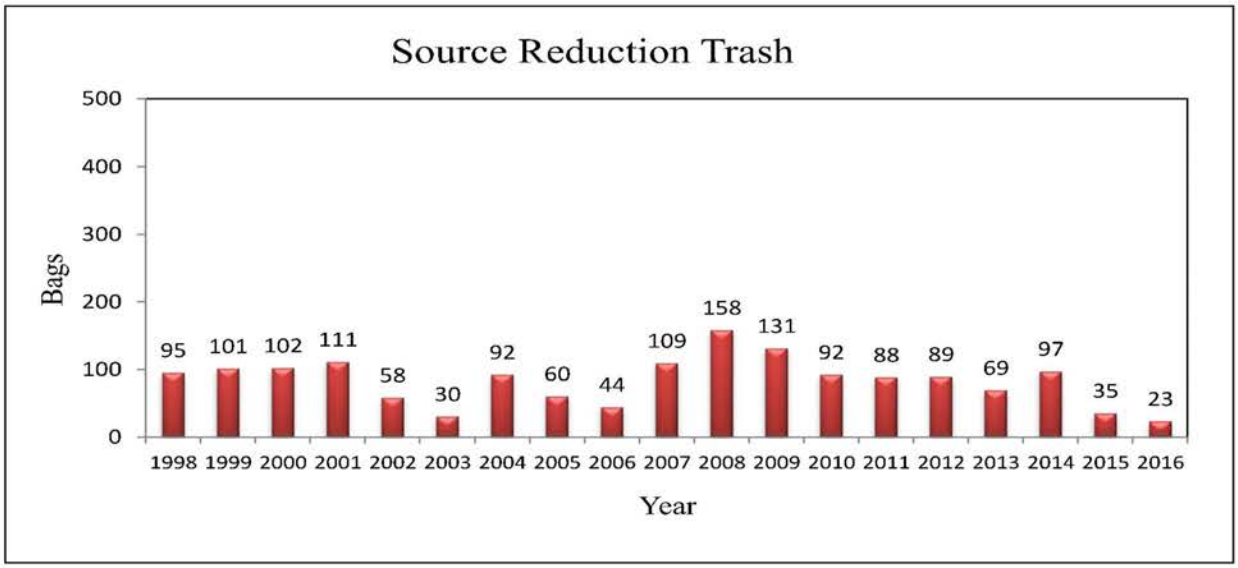
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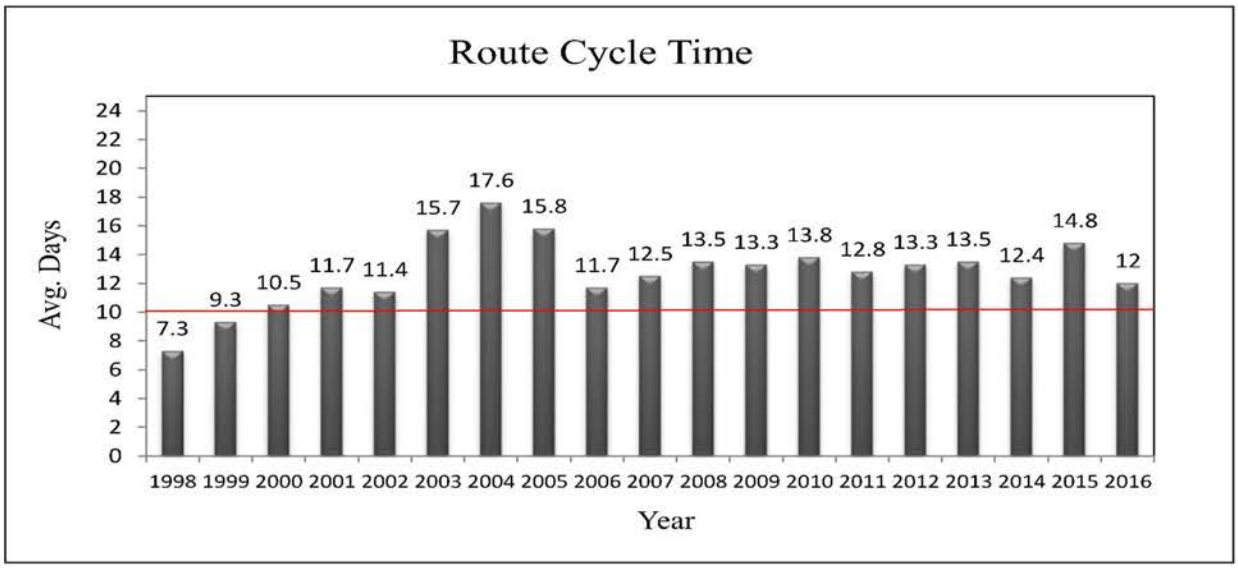
Lake Norman
Crew 2

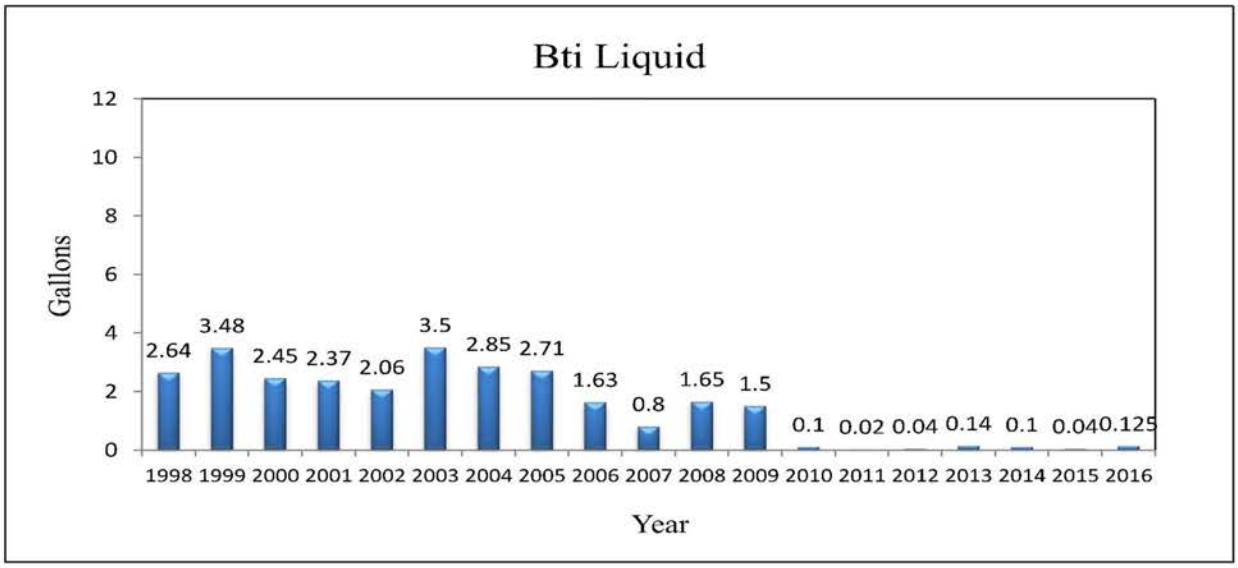




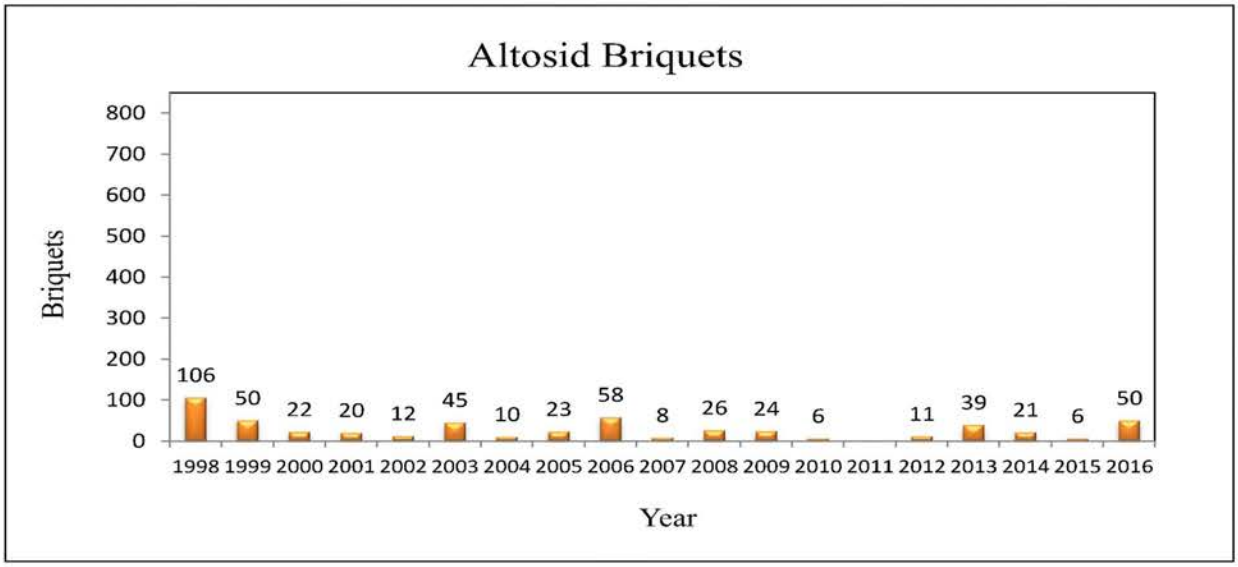
Lake Norman
Crew 2

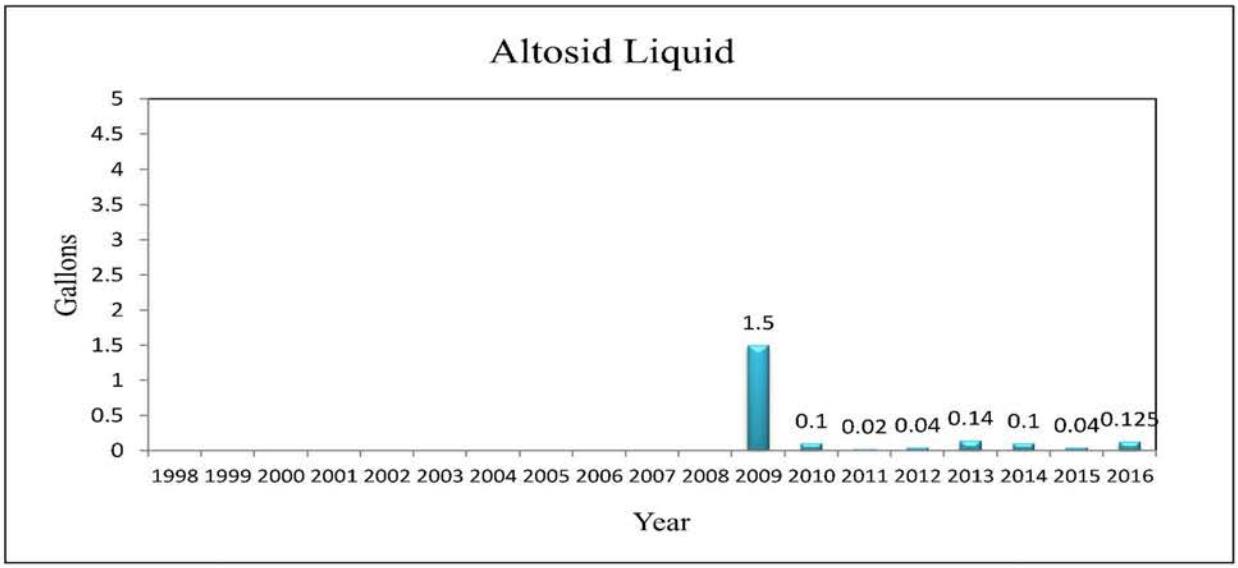
Lake Norman North (Boat #3)



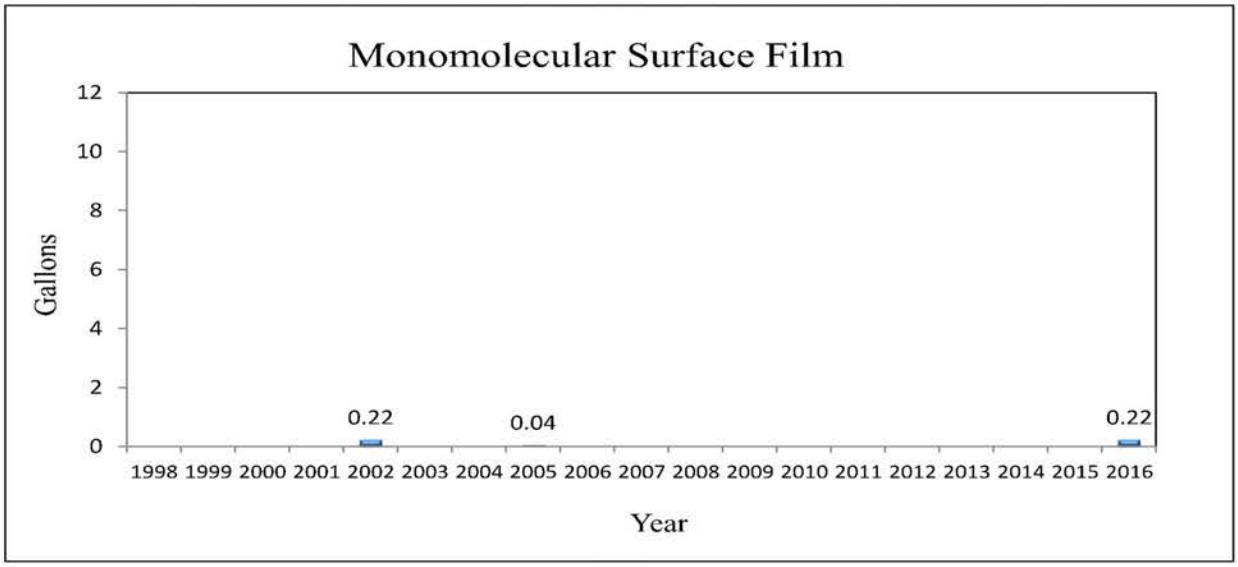


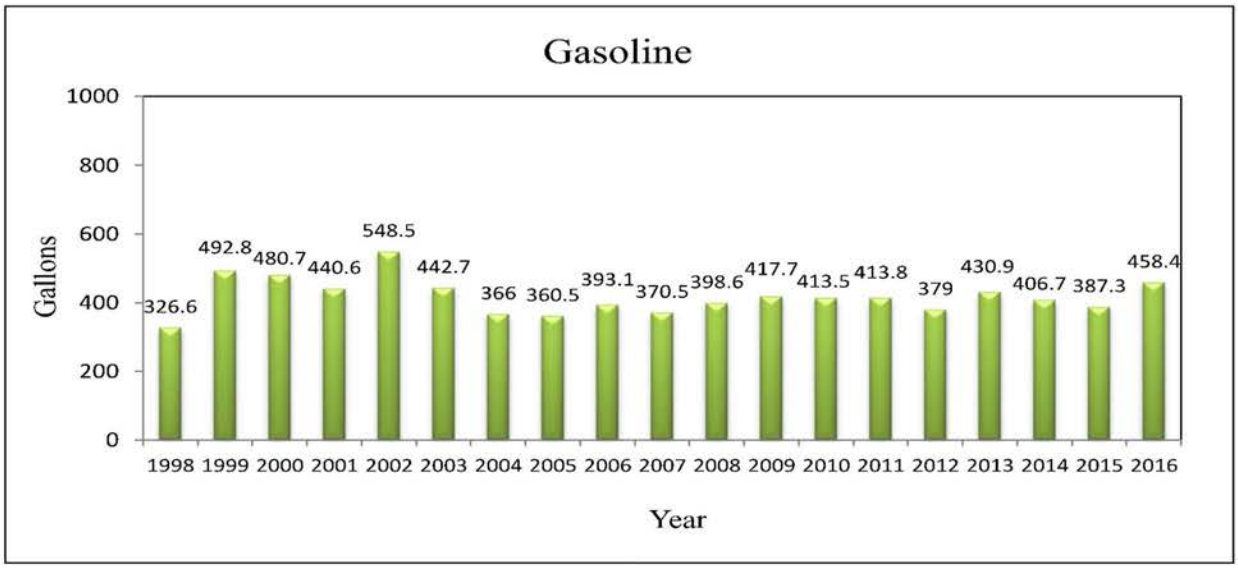
Lake Norman
Crew 3



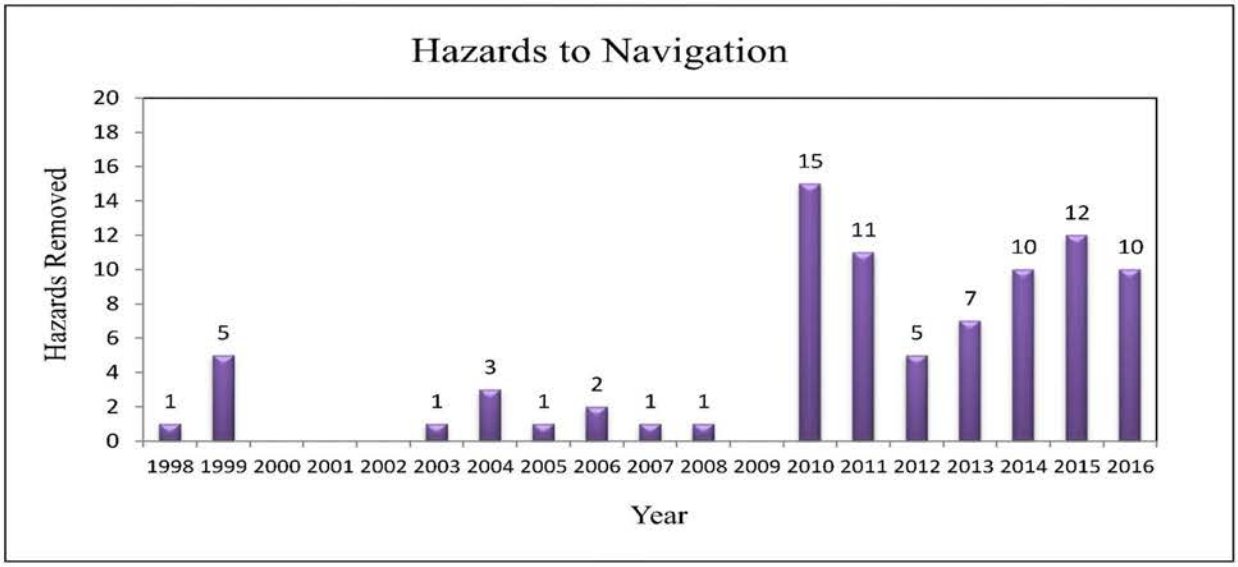


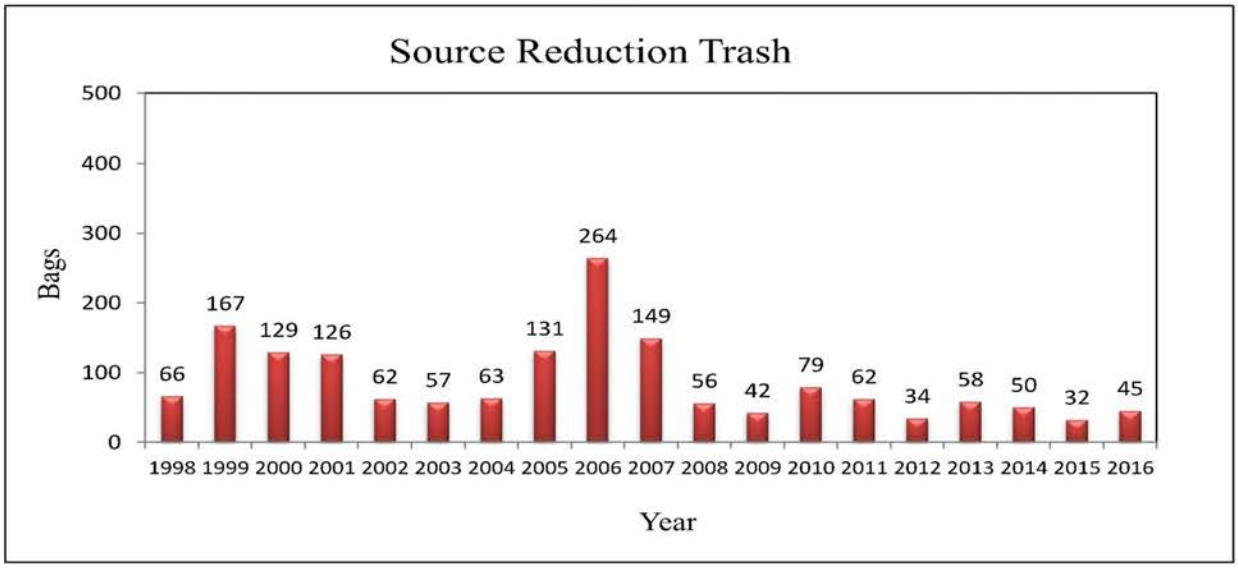
Lake Norman
Crew 3





Lake Norman
Crew 3

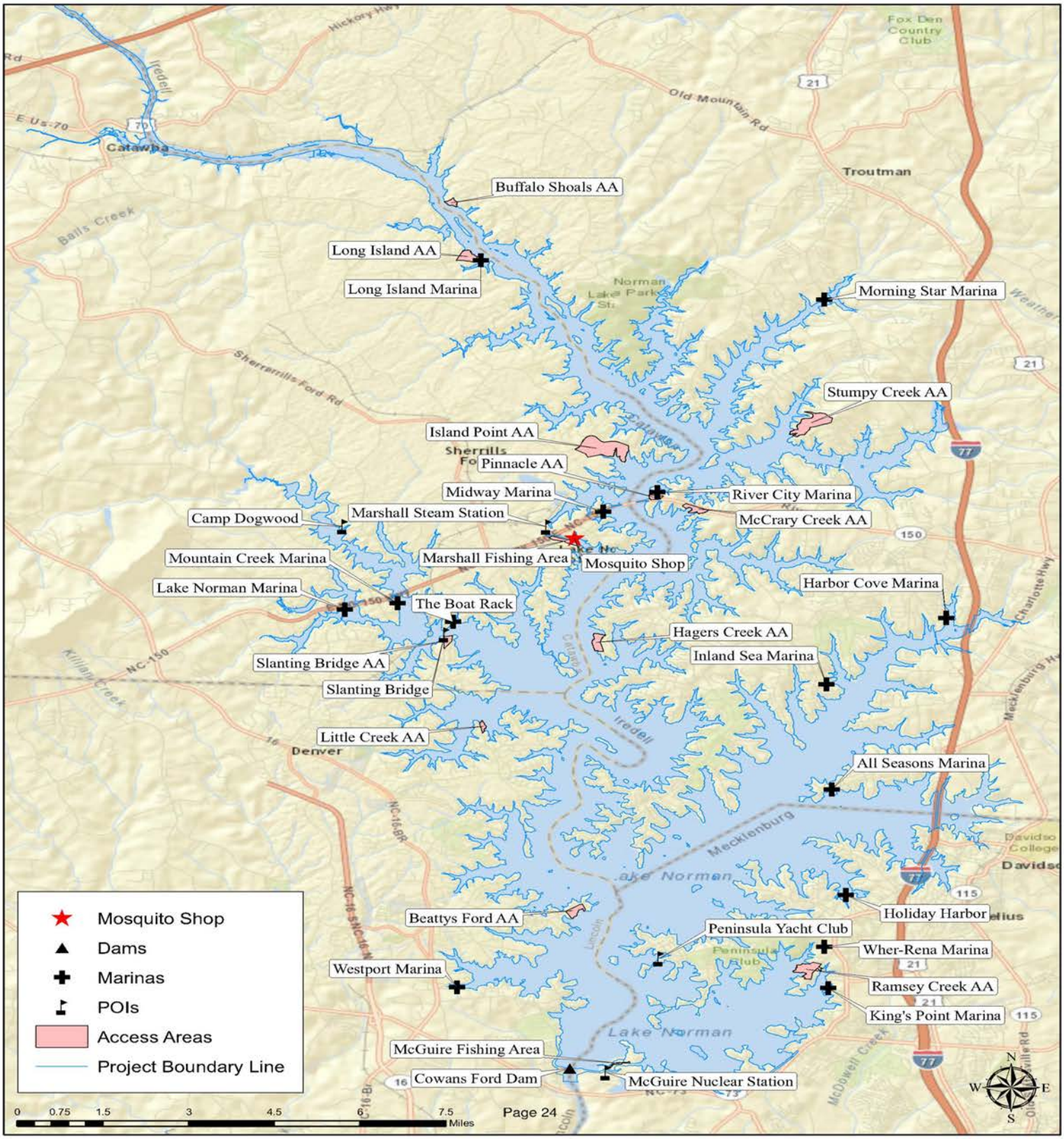




Lake Norman
Crew 3

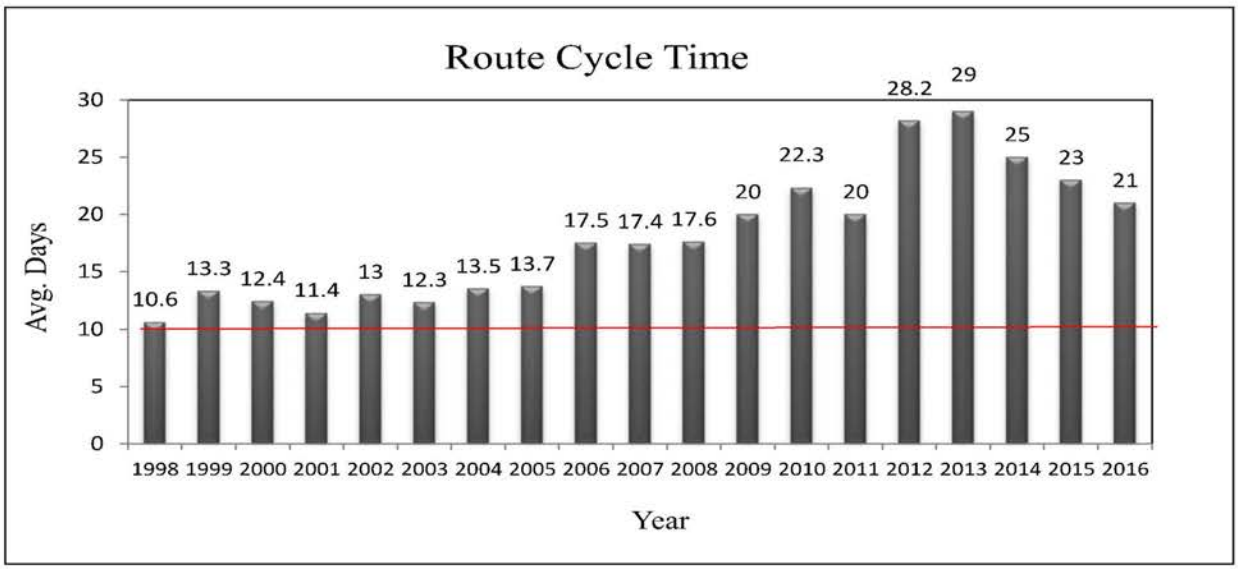
Confidential

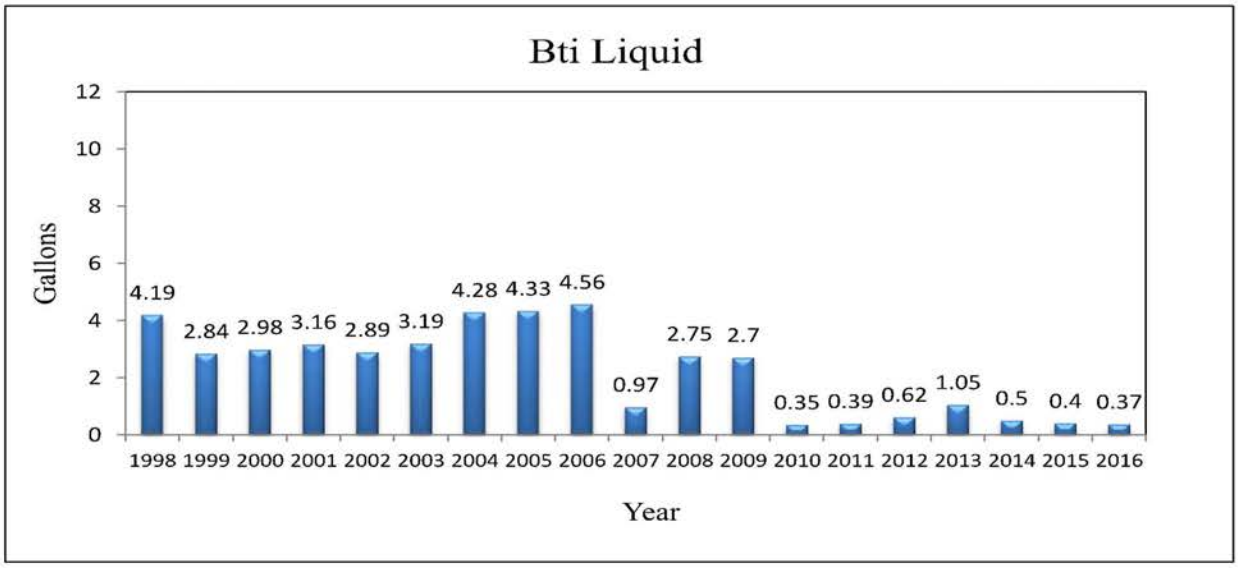
Lake Norman

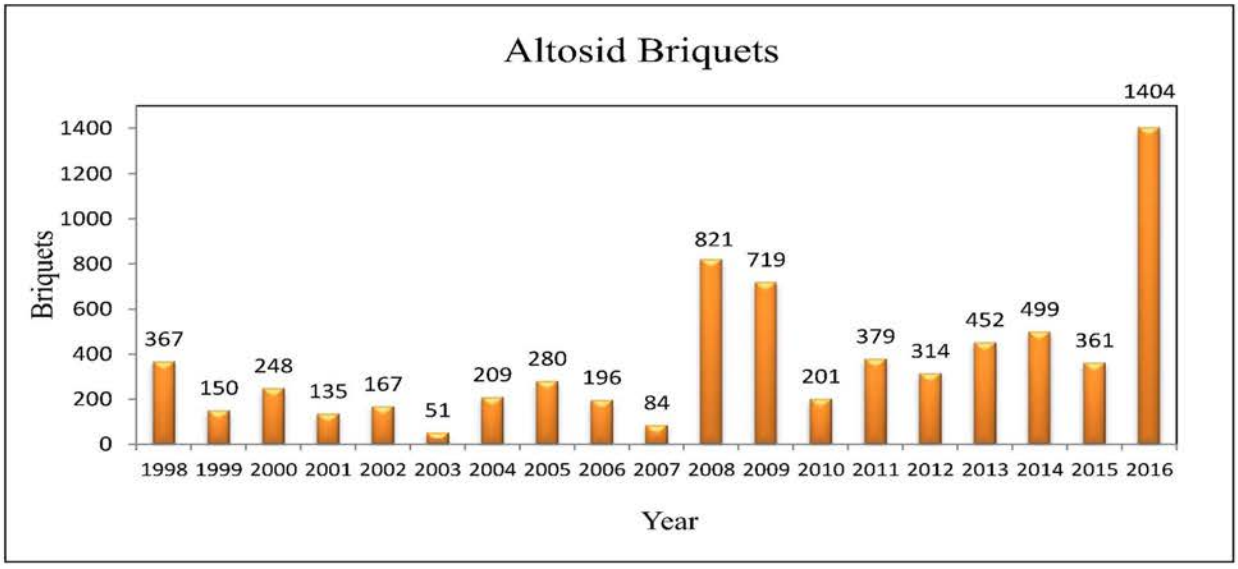

Buffalo Shoals AA
Long Island AA
Long Island Marina
Morning Star Marina
Stumpy Creek AA
Island Point AA
Pinnacle AA
Midway Marina
River City Marina
Camp Dogwood
Marshall Steam Station
McCrary Creek AA
Mountain Creek Marina
Marshall Fishing Area
Mosquito Shop
Lake Norman Marina
The Boat Rack
Harbor Cove Marina
Hagers Creek AA
Slanting Bridge AA
Inland Sea Marina
Slanting Bridge
Little Creek AA
All Seasons Marina
Holiday Harbor
Beattys Ford AA
Peninsula Yacht Club
Wher-Rena Marina
Westport Marina
Ramsey Creek AA
King's Point Marina
McGuire Fishing Area
Cowans Ford Dam
McGuire Nuclear Station
Mosquito Shop
Dams
Marinas
POIs
Access Areas
Project Boundary Line
0 0.75 1.5 3 4.5 6 7.5 Miles
Troutman
Catawba
Denver
Mecklenburg
Lake Norman
Fox Den Country Club
Old Mountain Rd
Sherrills Ford Rd
Balls Creek
Killian Creek
Iredell
Lincoln
Mecklenburg
Charlotte Hwy
N
S
E
W

Lake Wylie

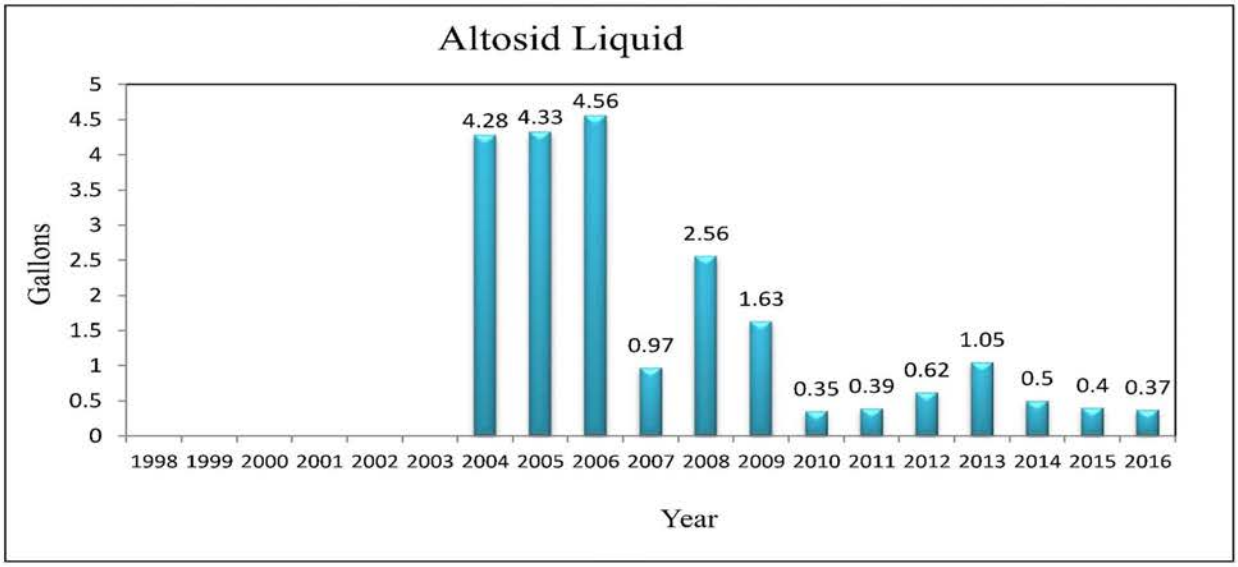
Lake Wylie was originally created in 1904 by a dam near Fort Mill, South Carolina. In 1924 the dam was rebuilt and the lake was expanded to its present size of approximately 13,443 acres with 325 miles of shoreline bordering both North and South Carolina. It is the oldest of the lakes on the Catawba. Lake Wylie was named after Dr. W. Gil Wylie, a founder of the Catawba Power Company, a predecessor of Duke Power. There are three electric generating stations on Lake Wylie: Wylie Hydroelectric Station, Allen Steam Station, and Catawba Nuclear Station. Lake Wylie provides drinking water for Belmont, North Carolina and Rock Hill, South Carolina. The lake is surrounded by three counties: Mecklenburg and Gaston, North Carolina and York, South Carolina. One mosquito control boat crew is assigned to Lake Wylie.

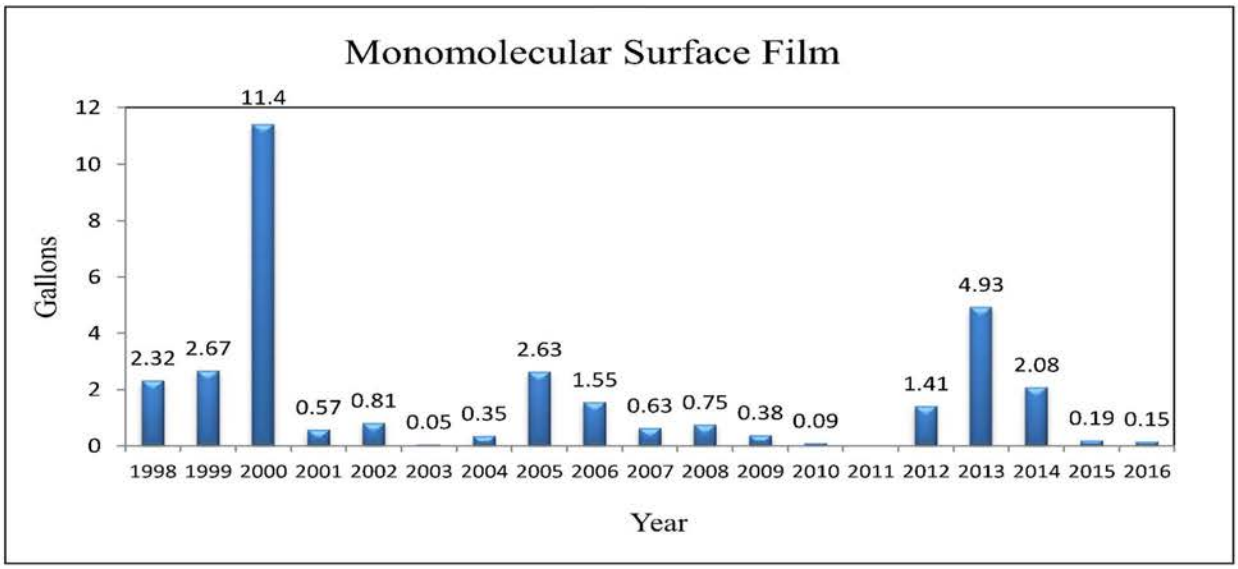



Bti Liquid
Gallons
12
10
8
6
4
2
0
4.19
2.84
2.98
3.16
2.89
3.19
4.28
4.33
4.56
0.97
2.75
2.7
0.35
0.39
0.62
1.05
0.5
0.4
0.37
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year


Altosid Briquets
Briquets
1400
1200
1000
800
600
400
200
0
367
150
248
135
167
51
209
280
196
84
821
719
201
379
314
452
499
361
1404
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

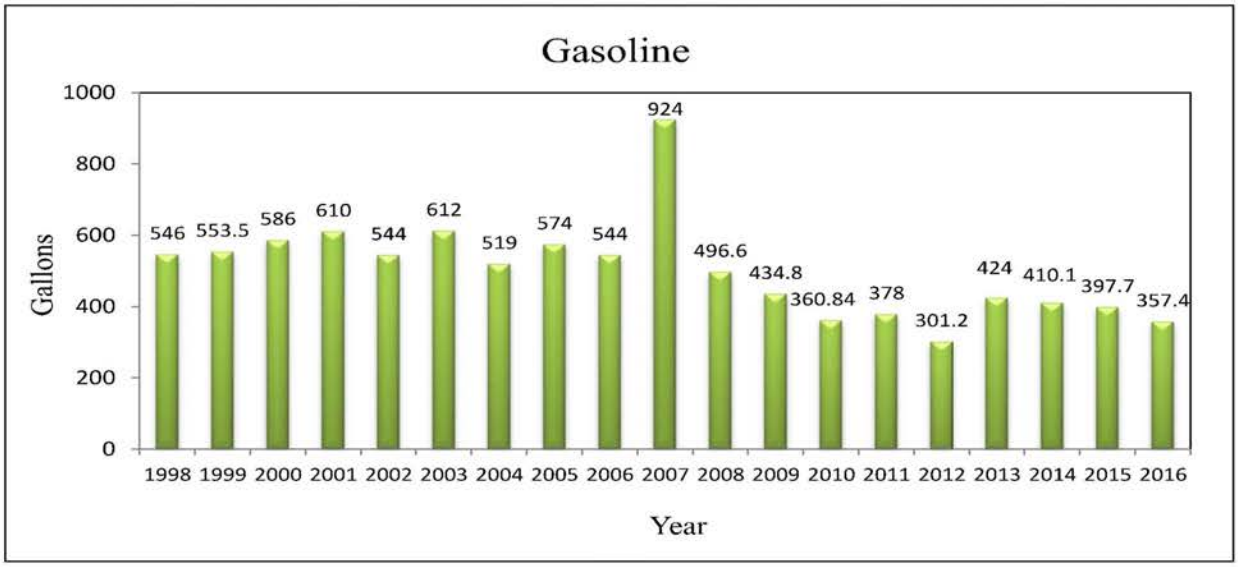
Lake Wylie

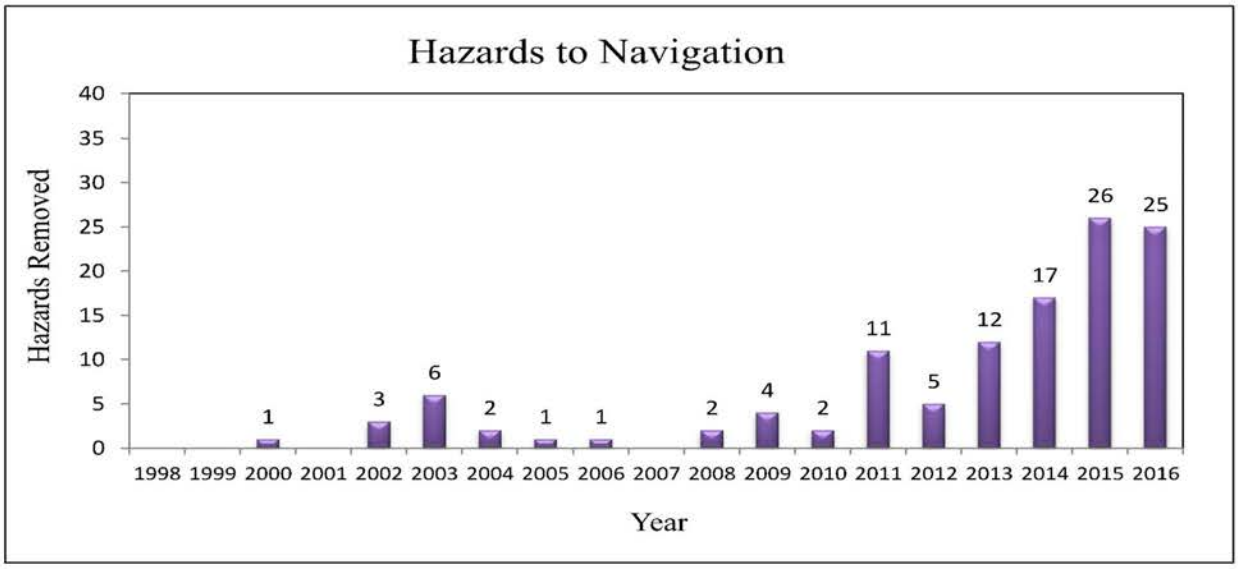




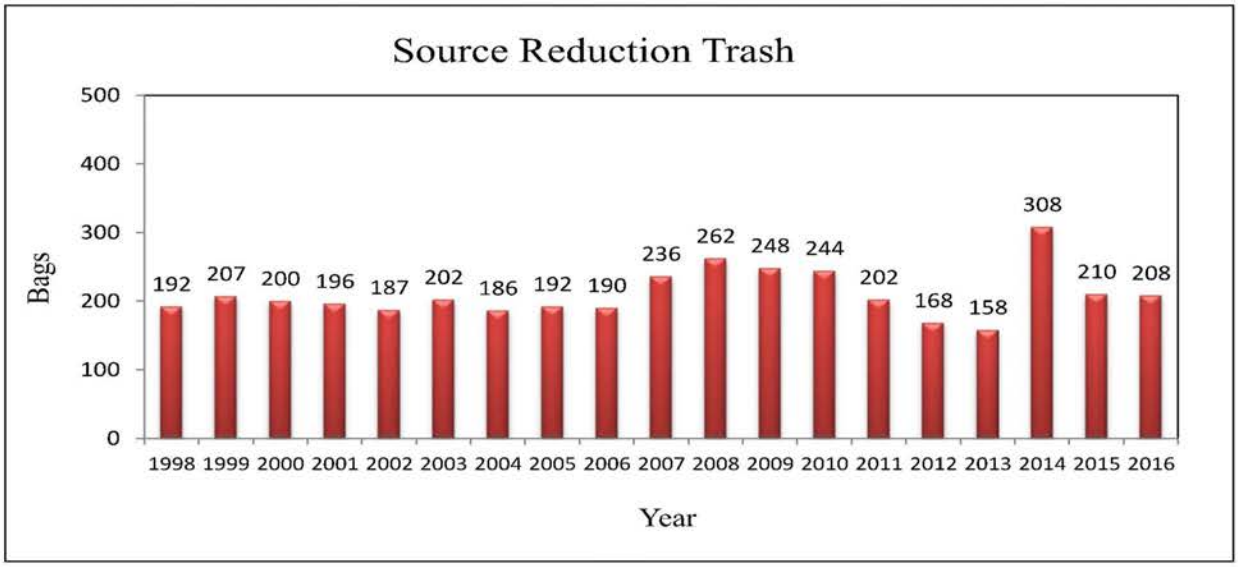
Lake Wylie

Confidential


Gasoline
Gallons
1000
800
600
400
200
0
546 553.5 586 610 544 612 519 574 544 924 496.6 434.8 360.84 378 301.2 424 410.1 397.7 357.4
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

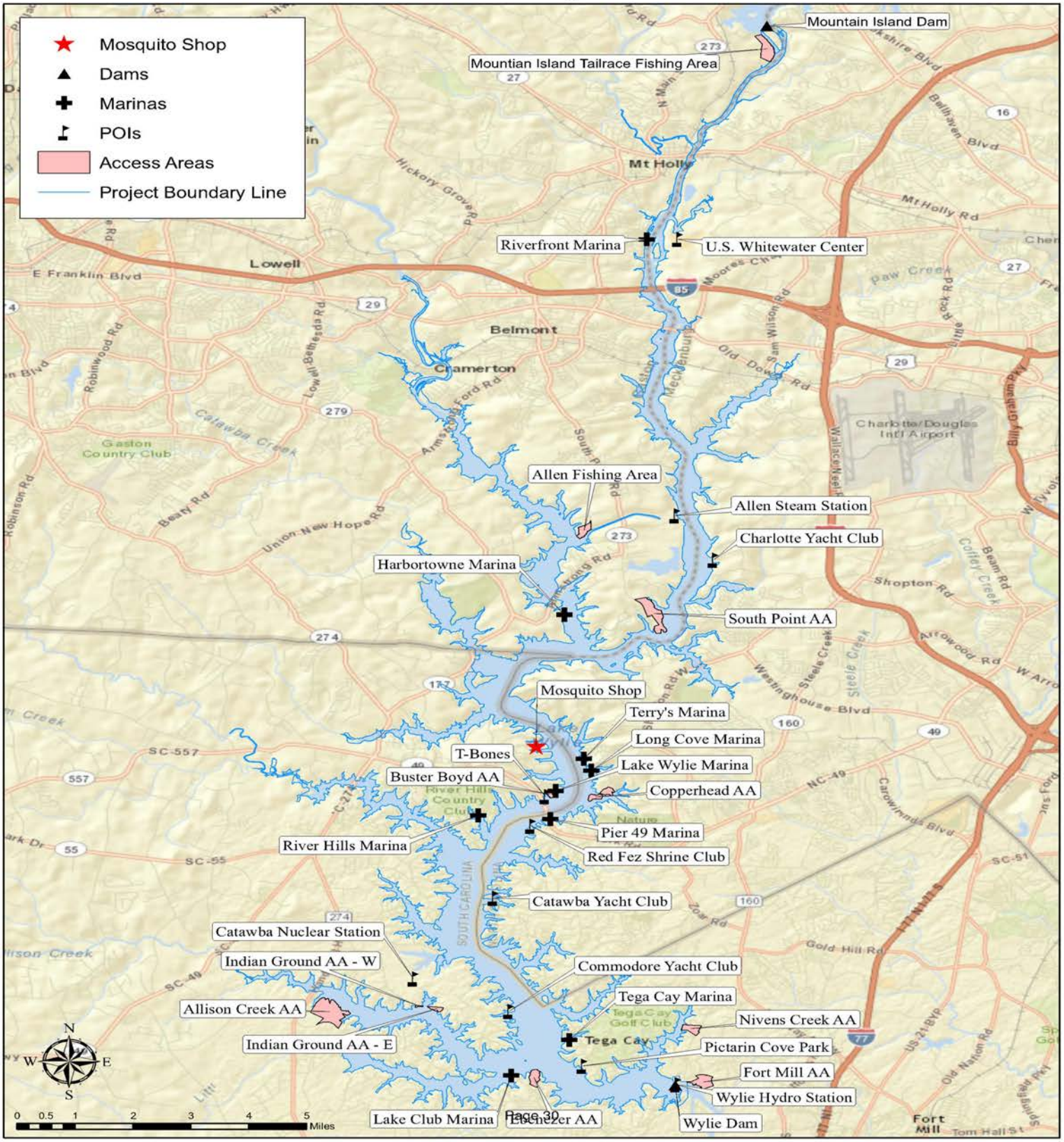

Hazards to Navigation
Hazards Removed
40
35
30
25
20
15
10
5
0
1 3 6 2 1 1 2 4 2 11 5 12 17 26 25
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

Lake Wylie


Source Reduction Trash
Bags
500
400
300
200
100
0
192
207
200
196
187
202
186
192
190
236
262
248
244
202
168
158
308
210
208
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

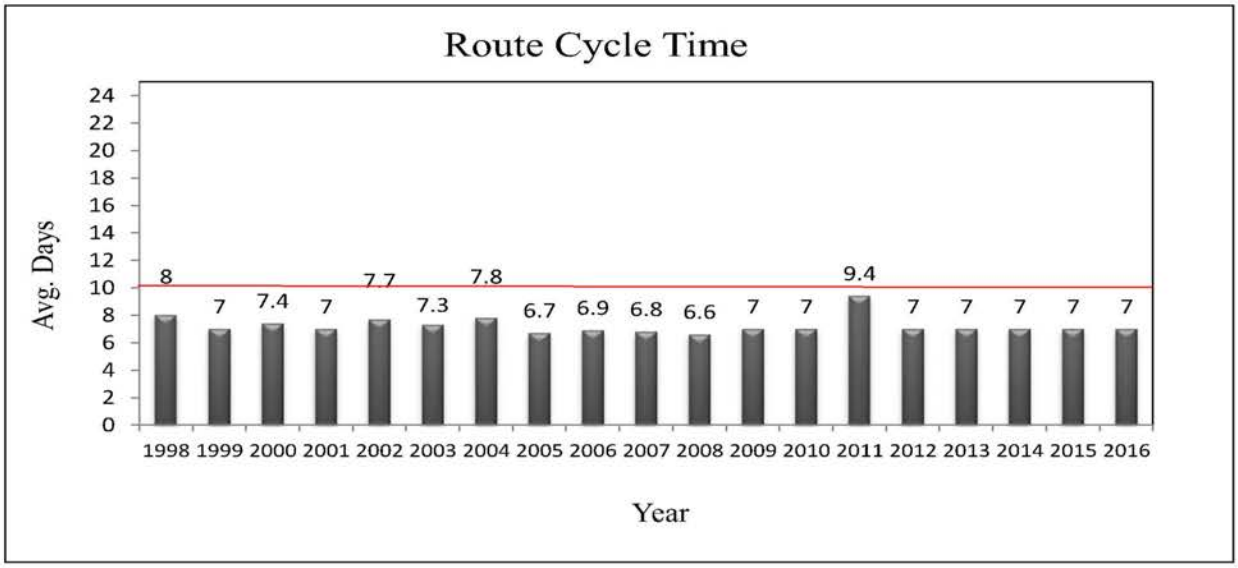
Lake Wylie

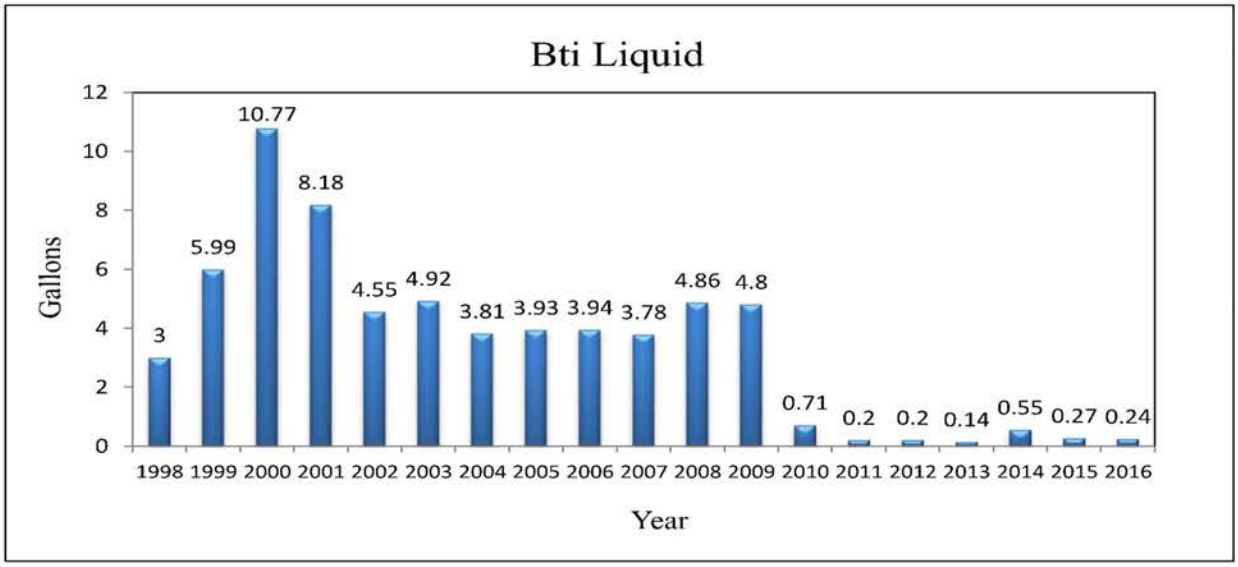
Lake Wylie

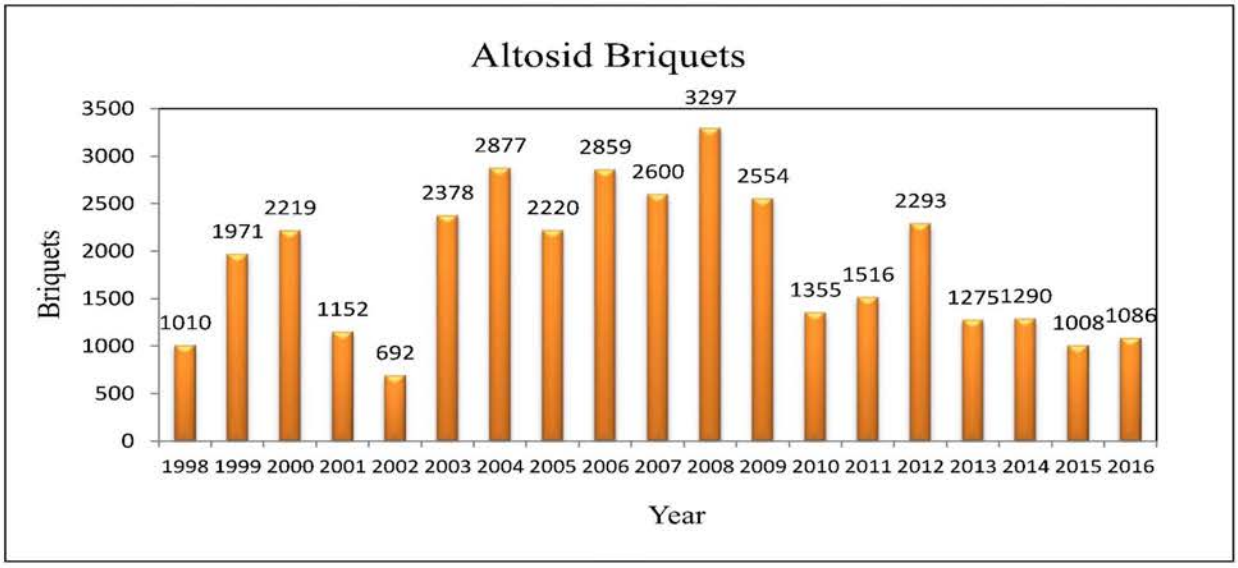

Mosquito Shop
Dams
Marinas
POIs
Access Areas
Project Boundary Line
Mountain Island Dam
Mountian Island Tailrace Fishing Area
Riverfront Marina
U.S. Whitewater Center
Allen Fishing Area
Allen Steam Station
Charlotte Yacht Club
Harbortowne Marina
South Point AA
Mosquito Shop
Terry's Marina
Long Cove Marina
T-Bones
Lake Wylie Marina
Buster Boyd AA
Copperhead AA
Pier 49 Marina
River Hills Marina
Red Fez Shrine Club
Catawba Yacht Club
Catawba Nuclear Station
Indian Ground AA - W
Commodore Yacht Club
Tega Cay Marina
Allison Creek AA
Nivens Creek AA
Indian Ground AA - E
Pictarin Cove Park
Fort Mill AA
Wylie Hydro Station
Lake Club Marina
Ebenezer AA
Wylie Dam
Lowell
Belmont
Cramerton
Mt Holly
Fort Mill
Tega Cay
Charlotte/Douglas Int'l Airport
Gaston Country Club
River Hills Country Club
Tega Cay Golf Club
Nature Preserve
N
S
E
W
0 0.5 1 2 3 4 5 Miles

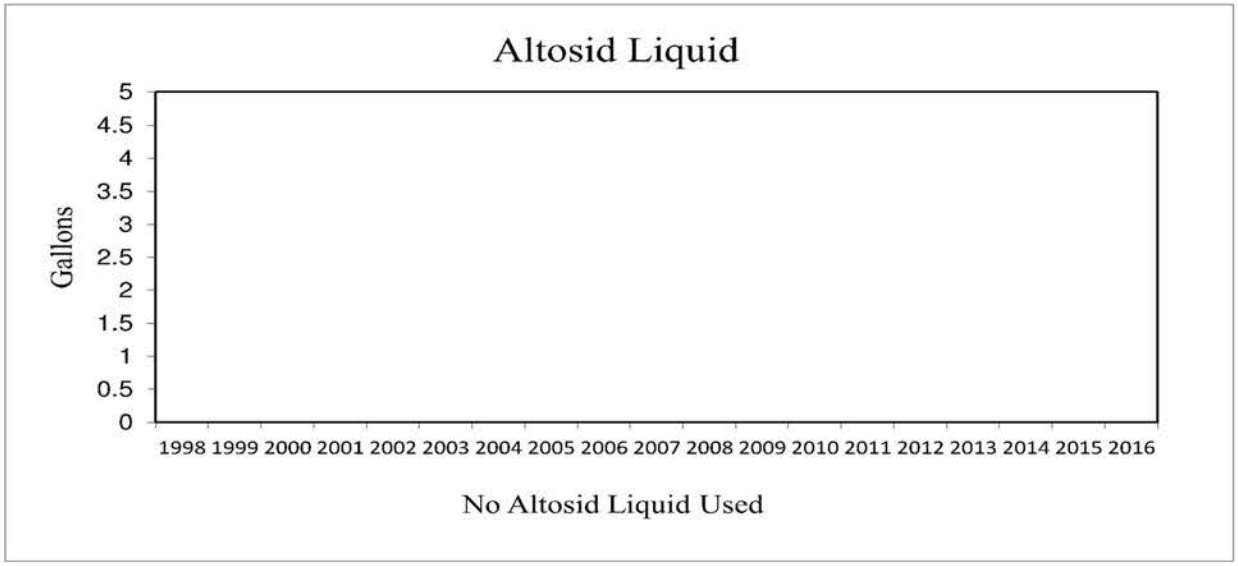
Lake Wateree

Lake Wateree was created with the operation of Wateree Hydroelectric Station, in 1920. The lake is approximately 13,864 acres with 242 miles of shoreline, making it the largest of the lower Catawba River lakes. Lake Wateree is located in South Carolina, about 30 miles northeast of Columbia. The lake provides drinking water for Lugoff and Camden. Lake Wateree is surrounded by three counties: Fairfield, Kershaw, and Lancaster, South Carolina. One mosquito control boat crew is assigned to Lake Wateree.

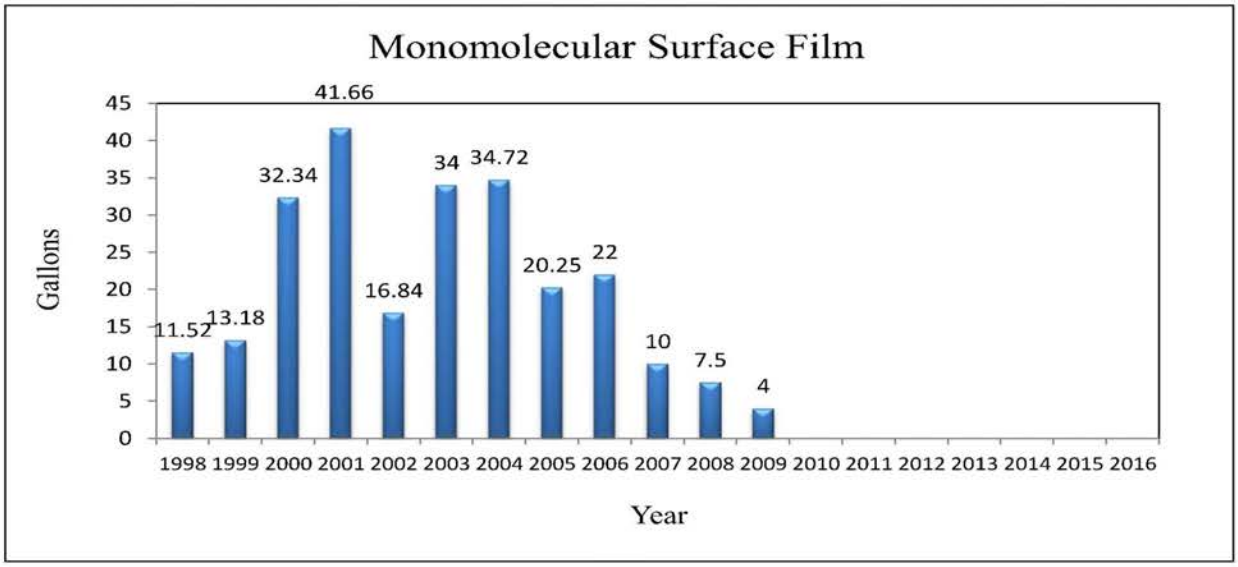


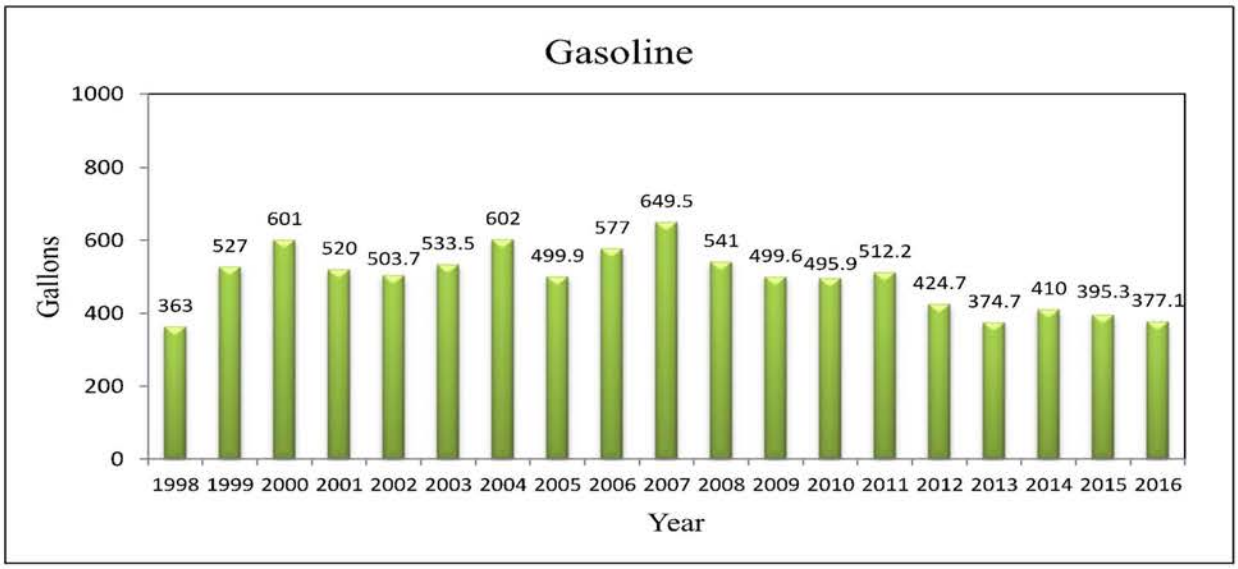




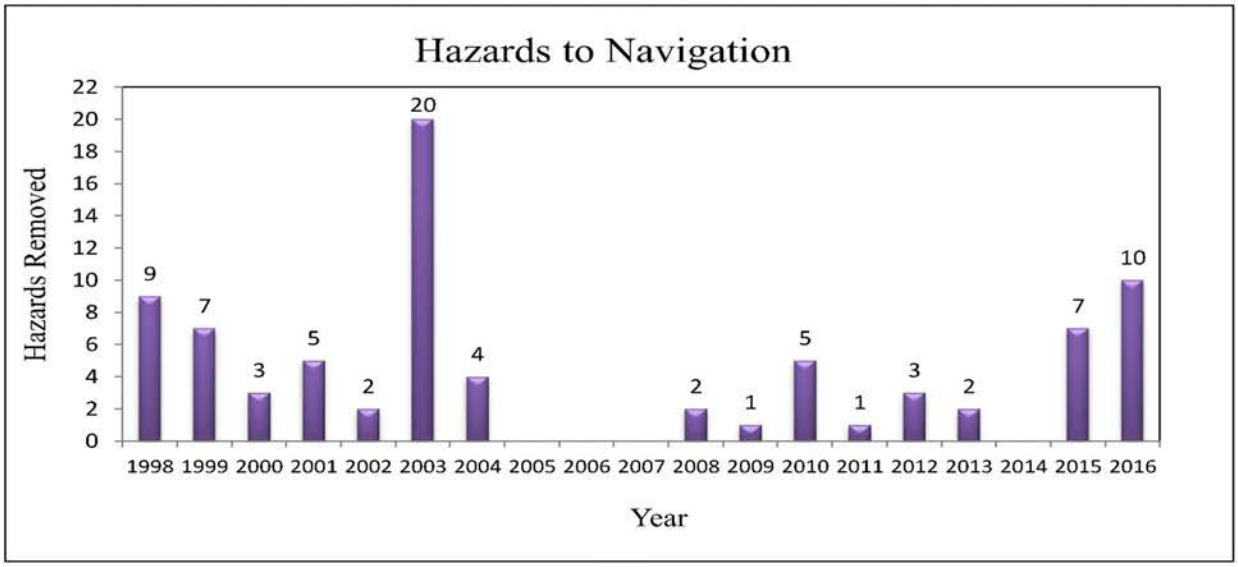


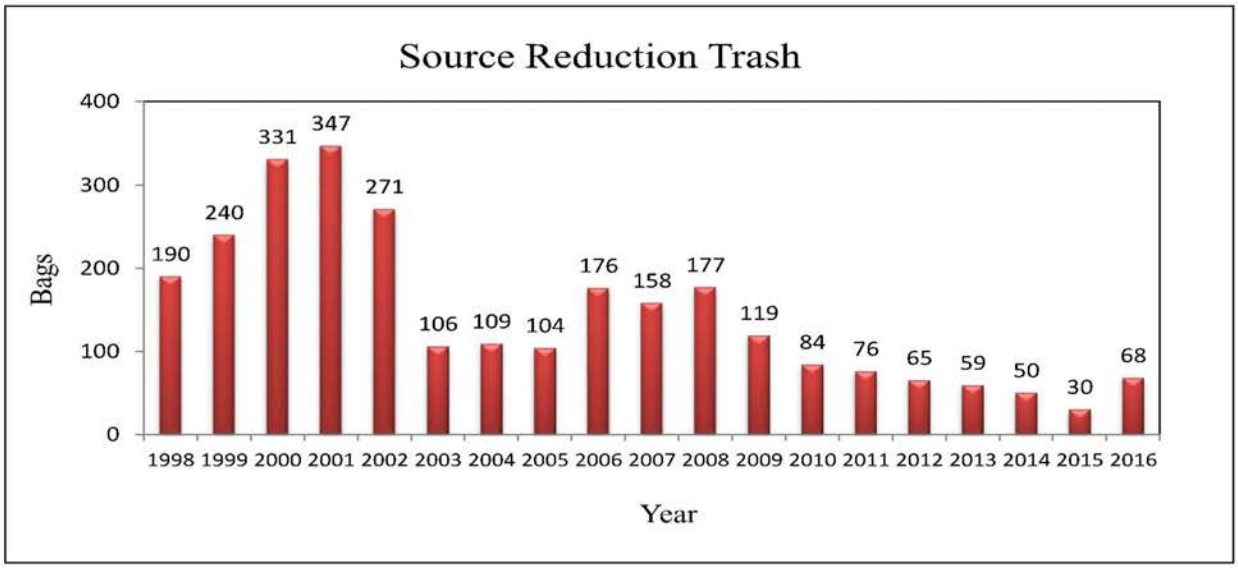
Lake Wateree





Lake Wateree





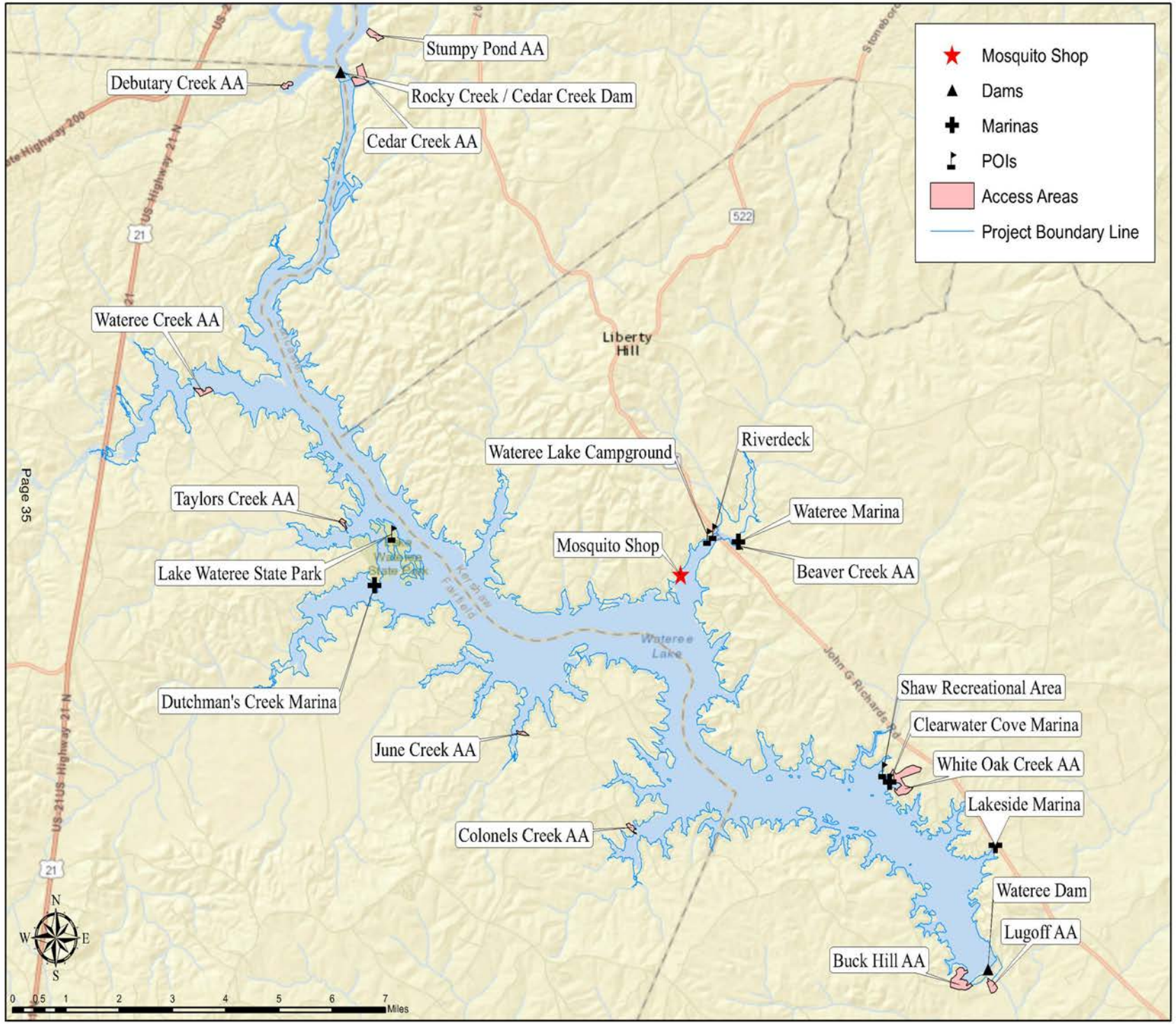
Lake Wateree

Confidential

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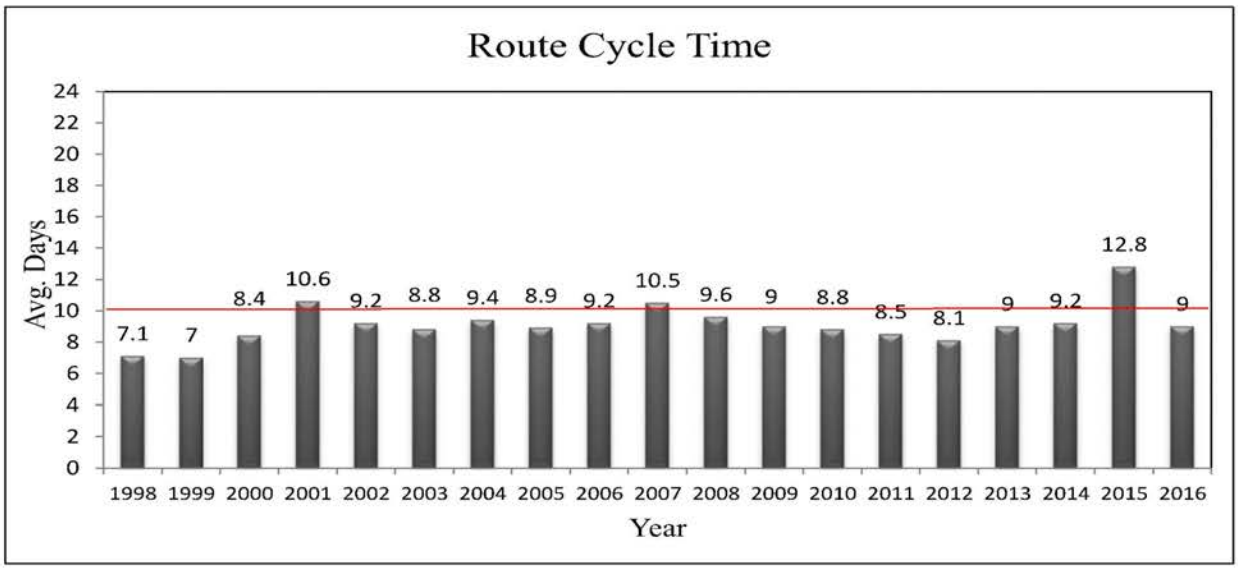
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3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-5 Page 36 of 47

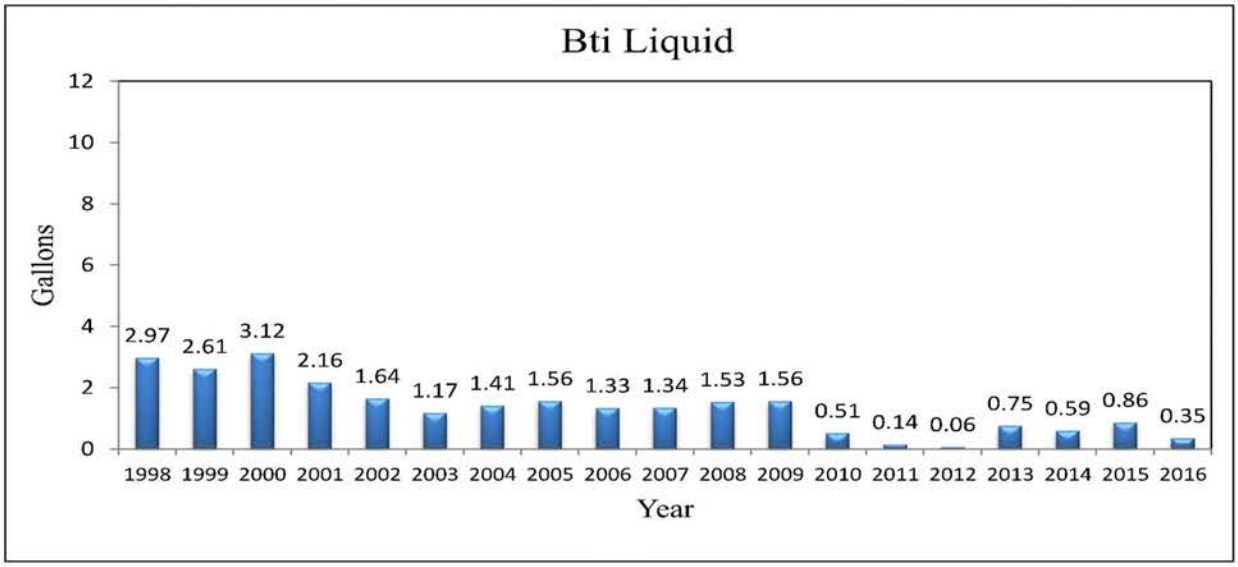
Lake Wateree

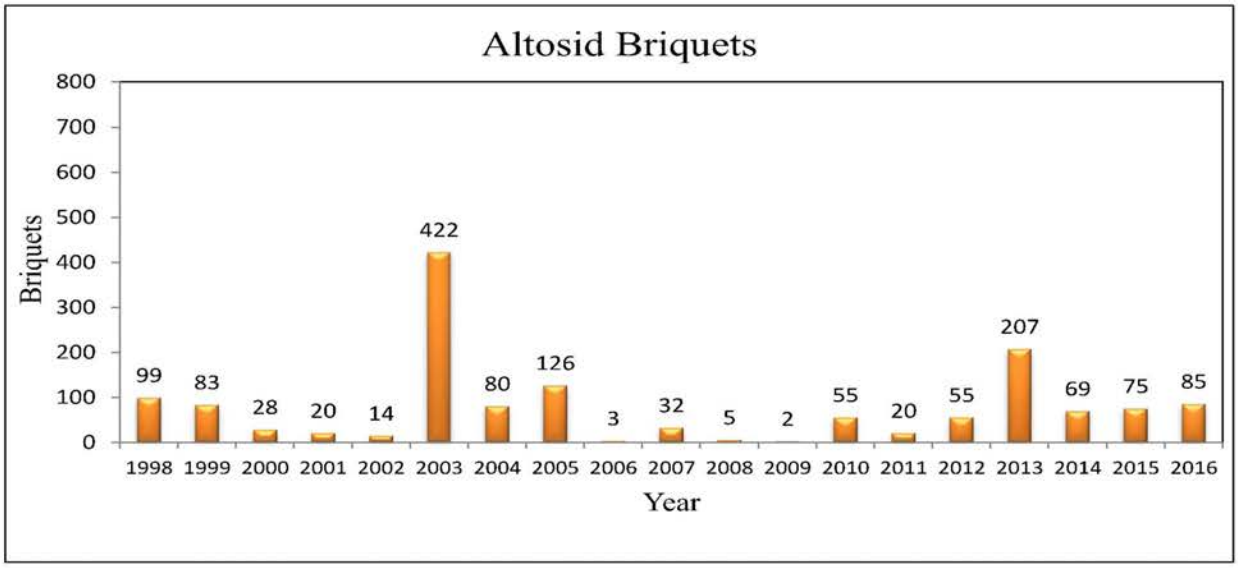


Lake Keowee

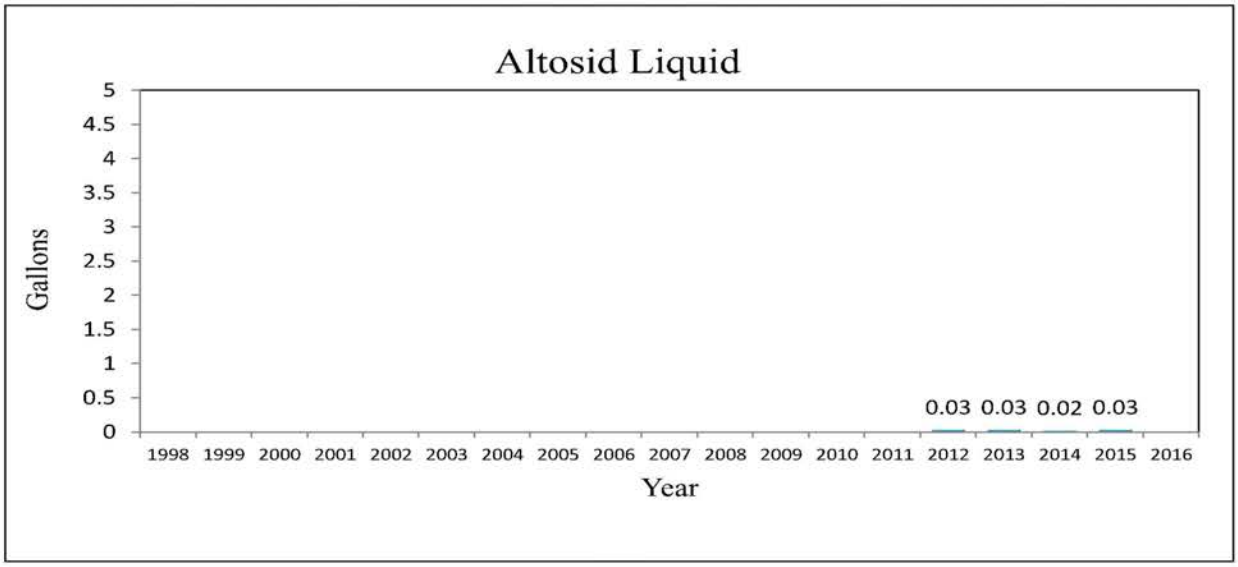
Completed in 1971, Lake Keowee consists of 18,500 acres of water and 300 miles of shoreline. Lake Keowee is located in northwestern South Carolina, predominately in Oconee County, also extending into Pickens County. Lake Keowee was the first lake developed for Duke Energy's Keowee-Toxaway Complex. The complex consists of Oconee Nuclear Station, and the Keowee, Jocassee and Bad Creek Hydroelectric Stations. Lake Keowee provides drinking water for Greenville and Seneca. One mosquito control boat crew is assigned to Lake Keowee.

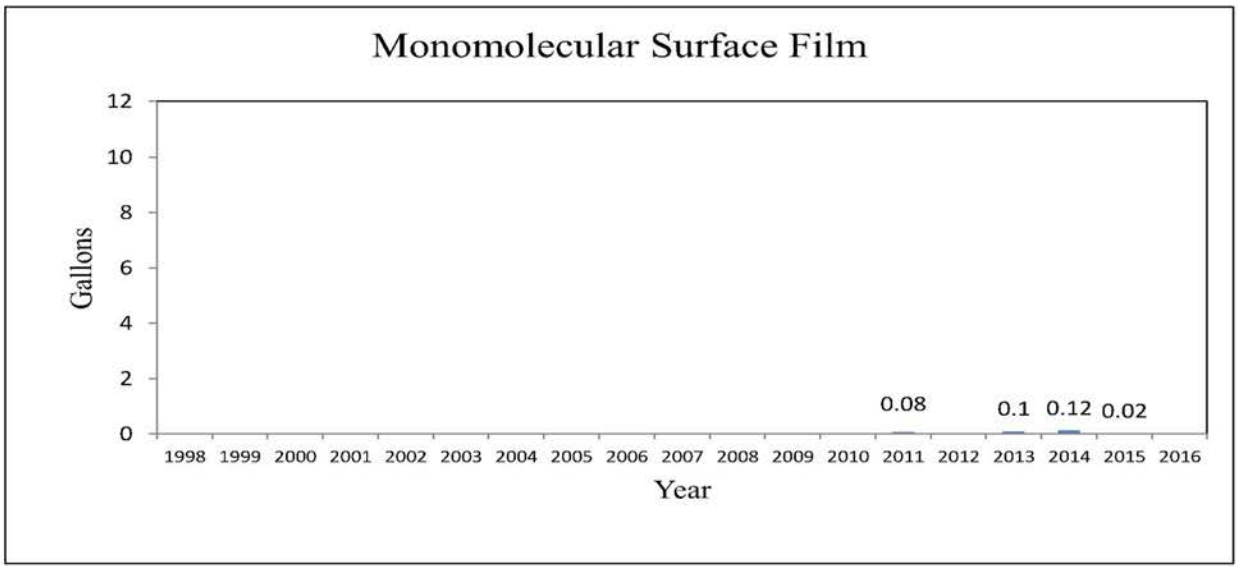



Bti Liquid
Gallons
12
10
8
6
4
2
0
2.97
2.61
3.12
2.16
1.64
1.17
1.41
1.56
1.33
1.34
1.53
1.56
0.51
0.14
0.06
0.75
0.59
0.86
0.35
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

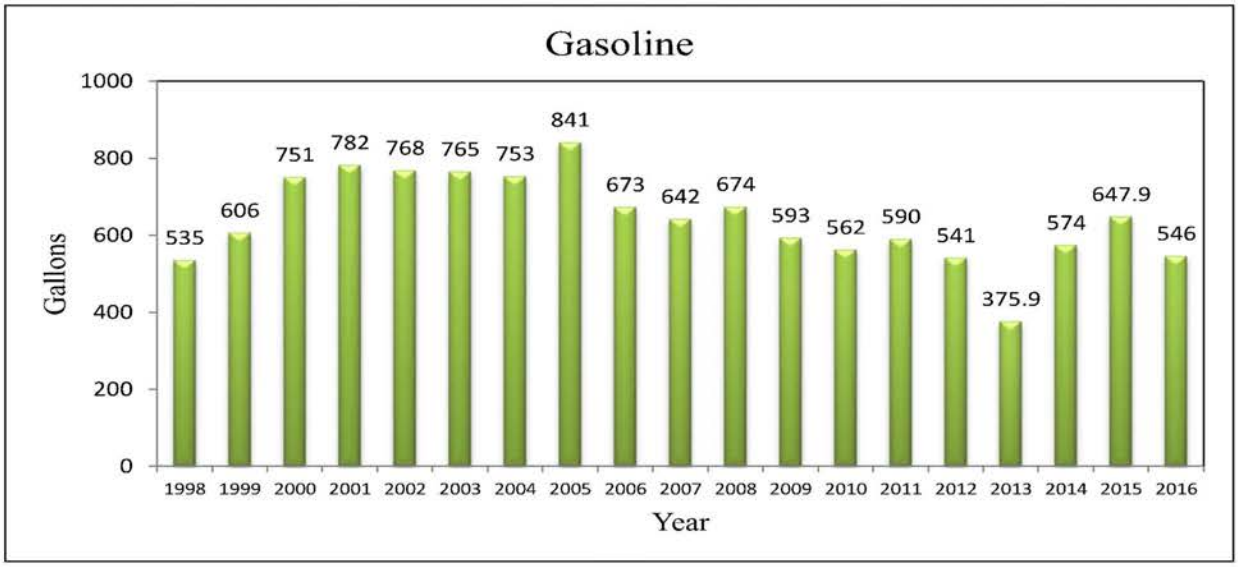

Altosid Briquets
Briquets
800
700
600
500
400
300
200
100
0
99
83
28
20
14
422
80
126
3
32
5
2
55
20
55
207
69
75
85
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

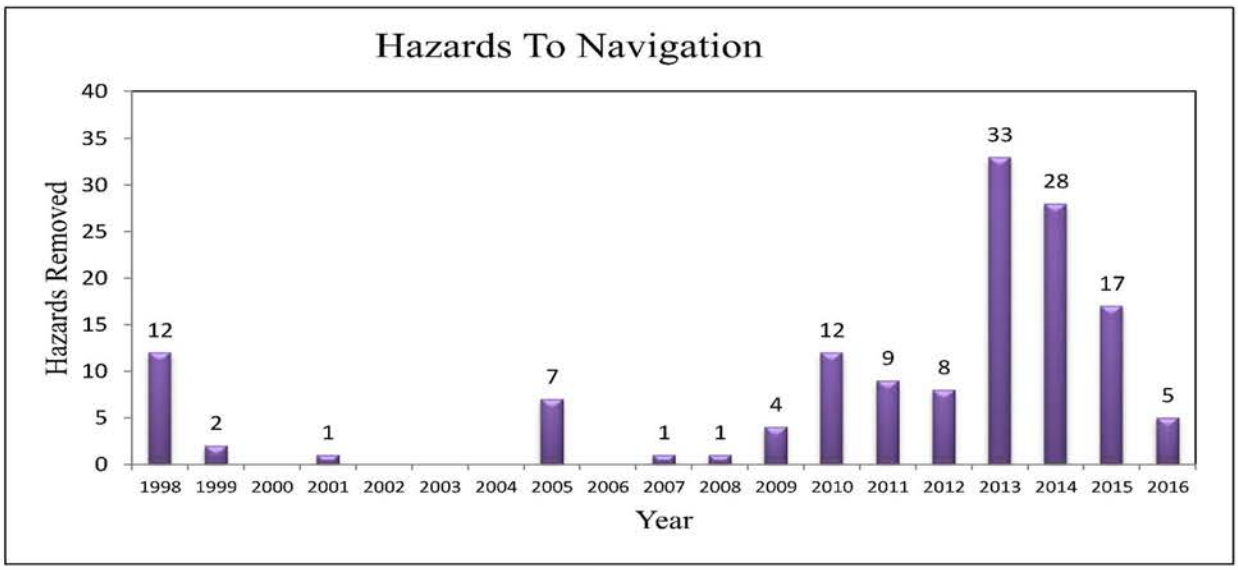
Lake Keowee


Altosid Liquid
Gallons
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0.03 0.03 0.02 0.03
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

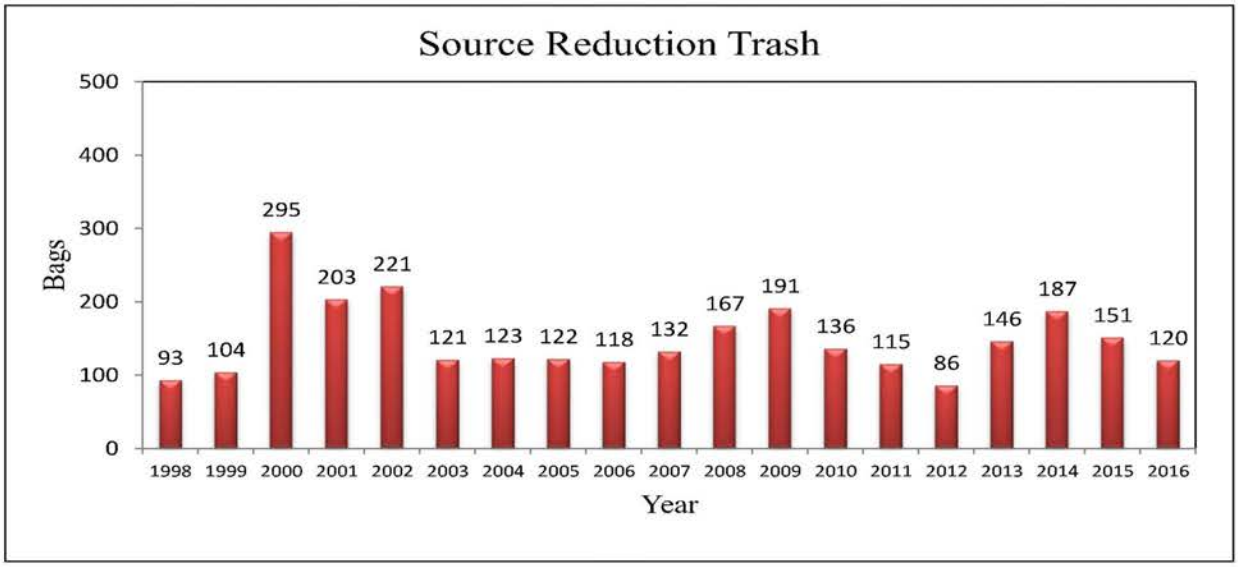

Monomolecular Surface Film
Gallons
12
10
8
6
4
2
0
0.08
0.1 0.12 0.02
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

Lake Keowee


Gasoline
Gallons
1000
800
600
400
200
0
535
606
751
782
768
765
753
841
673
642
674
593
562
590
541
375.9
574
647.9
546
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year


Hazards To Navigation
Hazards Removed
40
35
30
25
20
15
10
5
0
12
2
1
7
1
1
4
12
9
8
33
28
17
5
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

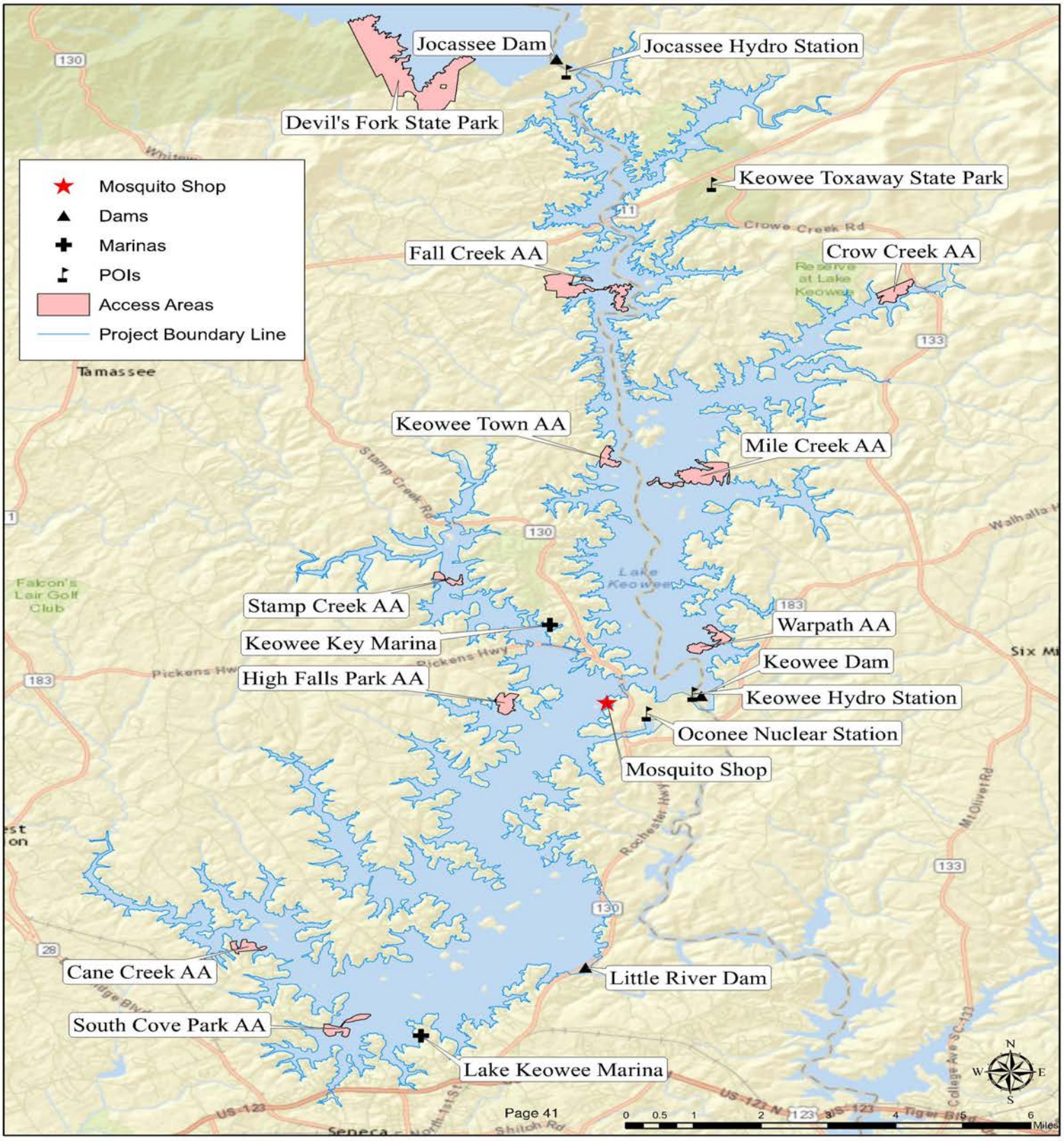
Lake Keowee



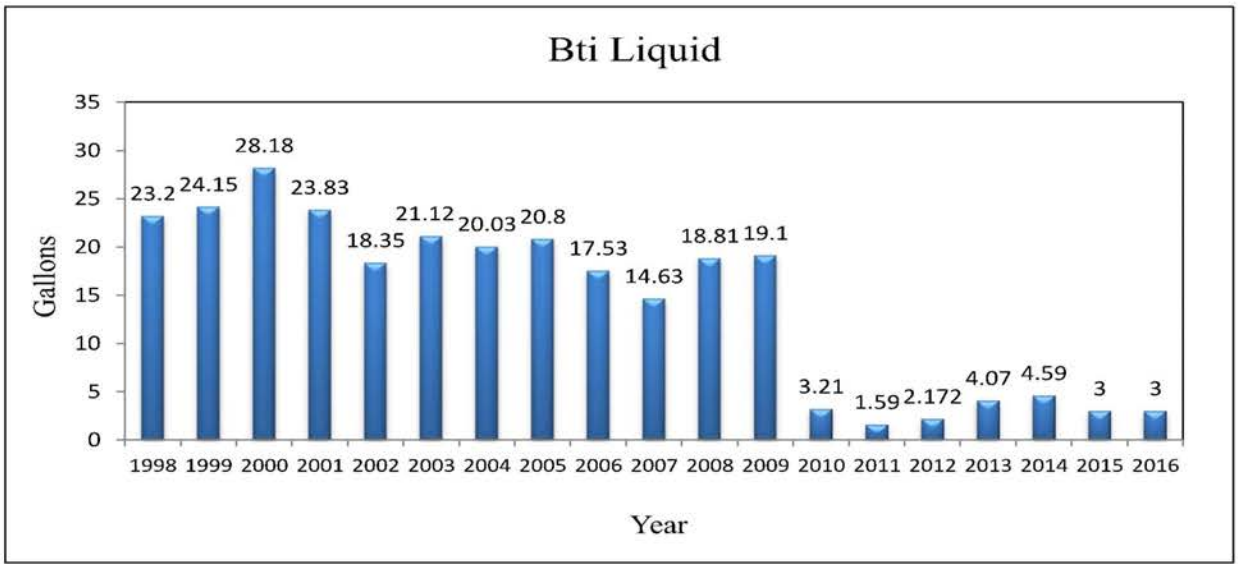
Lake Keowee

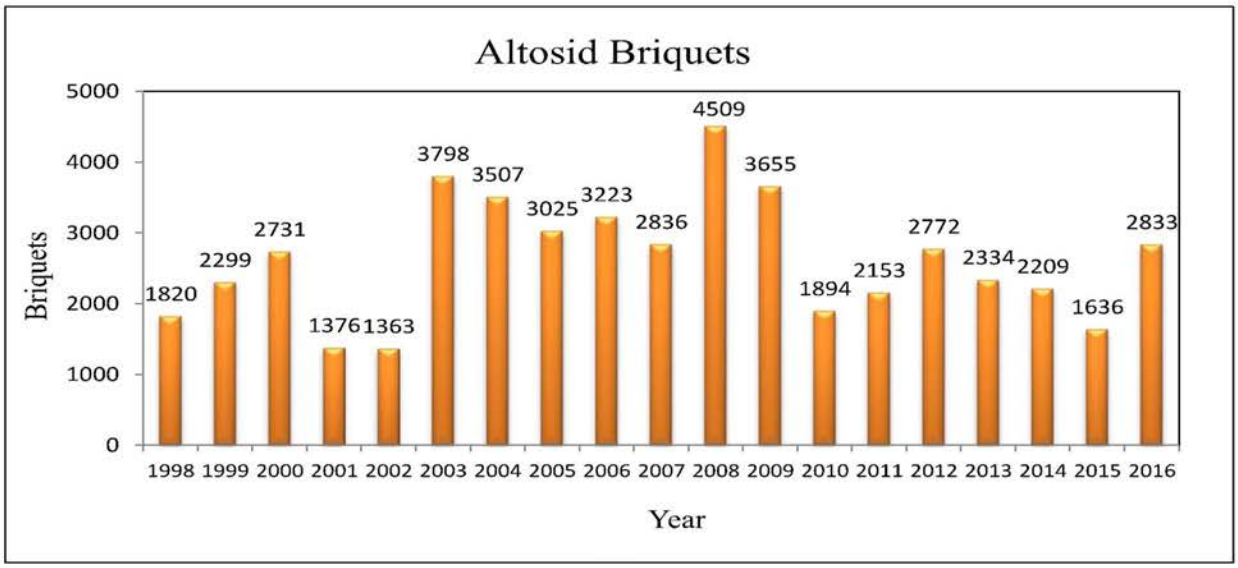
Confidential

Lake Keowee

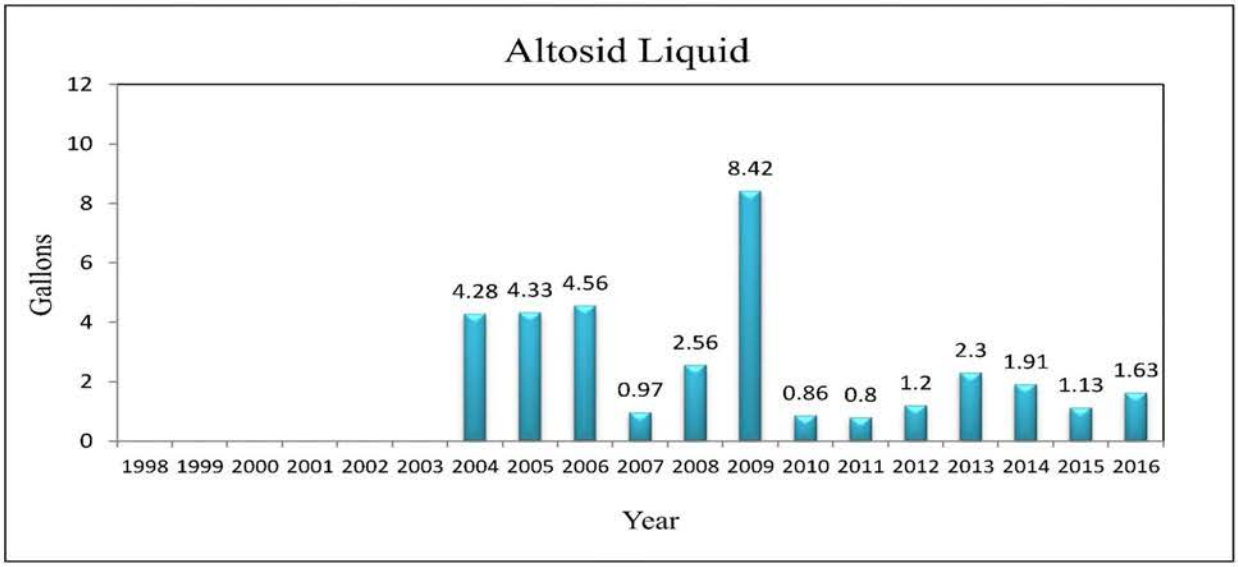

Jocassee Dam
Jocassee Hydro Station
Devil's Fork State Park
Keowee Toxaway State Park
Fall Creek AA
Crow Creek AA
Keowee Town AA
Mile Creek AA
Stamp Creek AA
Keowee Key Marina
High Falls Park AA
Warpath AA
Keowee Dam
Keowee Hydro Station
Oconee Nuclear Station
Mosquito Shop
Cane Creek AA
Little River Dam
South Cove Park AA
Lake Keowee Marina
Mosquito Shop
Dams
Marinas
POIs
Access Areas
Project Boundary Line
Tamassee
Crowe Creek Rd
Stamp Creek Rd
Pickens Hwy
Rochester Hwy
Mt Oliver Rd
US-123
Seneca
Falcon's Lair Golf Club
Reserve at Lake Keowee
Lake Keowee
Page 41
0 0.5 1 2 3 4 5 6 Miles
N
W
E
S

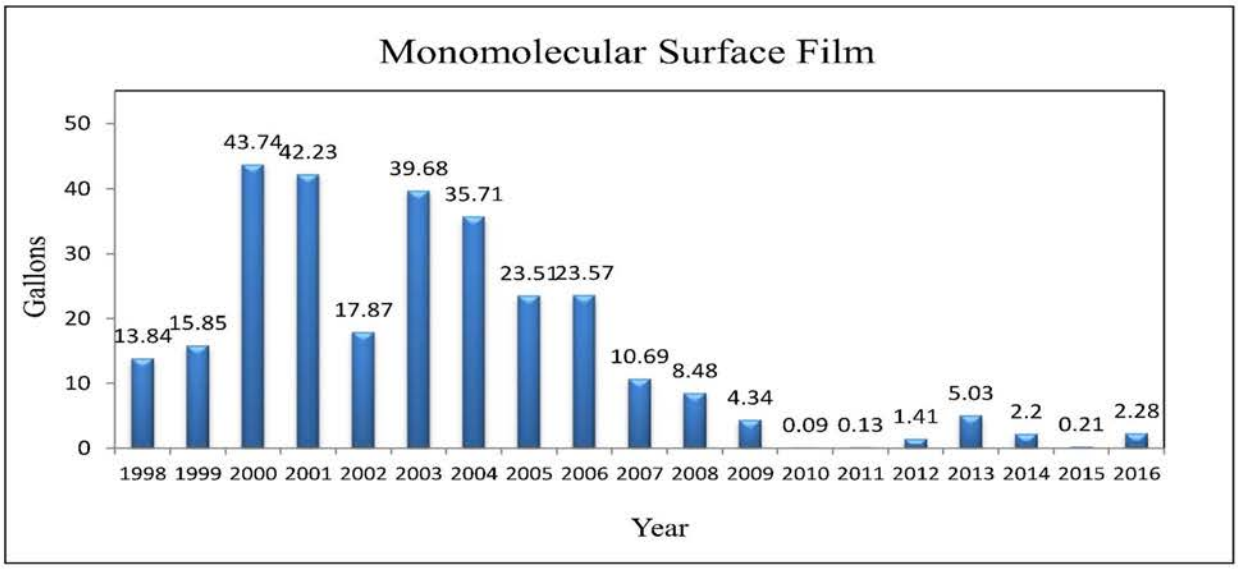
Nineteen Year Summary Totals
1998-2016



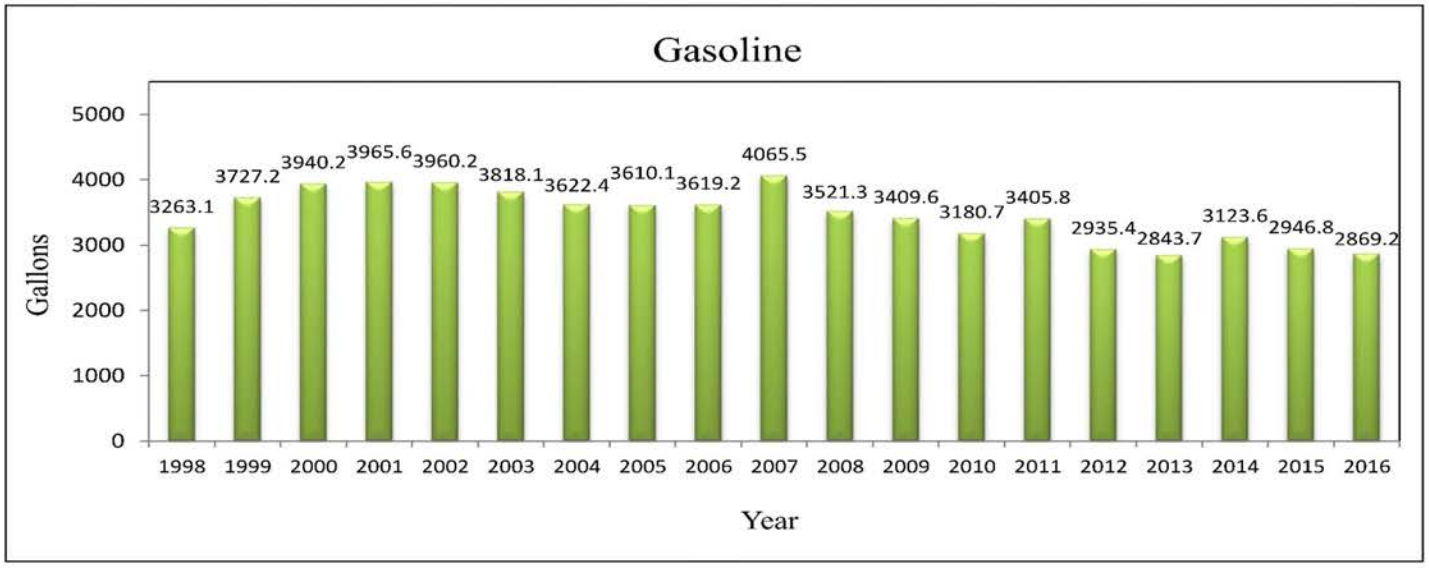


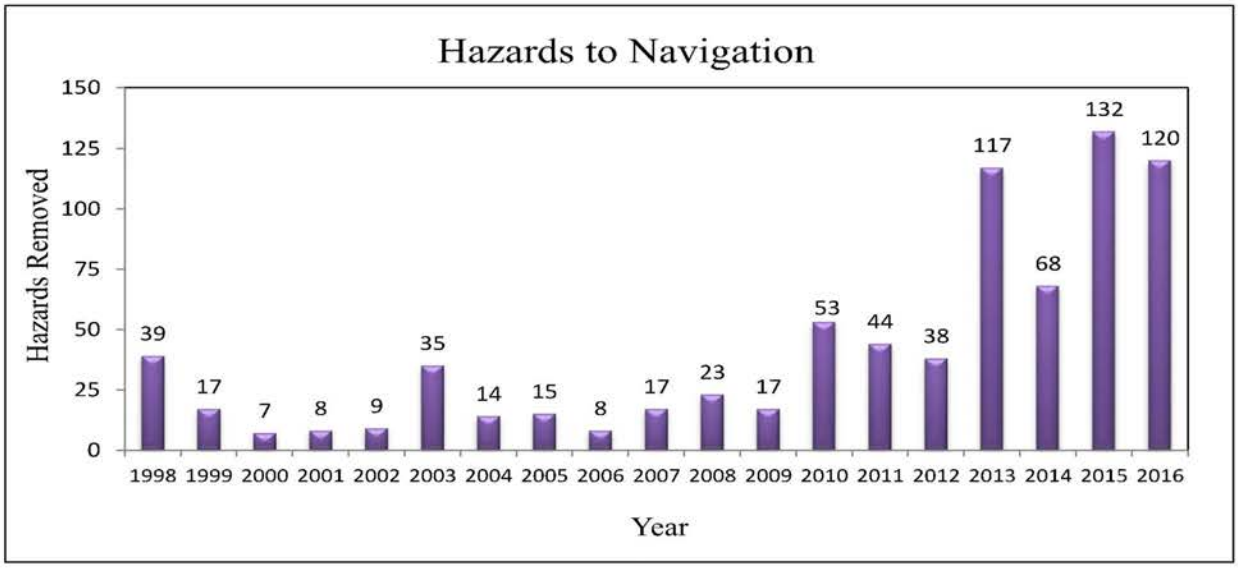
Totals


Altosid Liquid
Gallons
Year
0
2
4
6
8
10
12
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
4.28 4.33 4.56 0.97 2.56 8.42 0.86 0.8 1.2 2.3 1.91 1.13 1.63

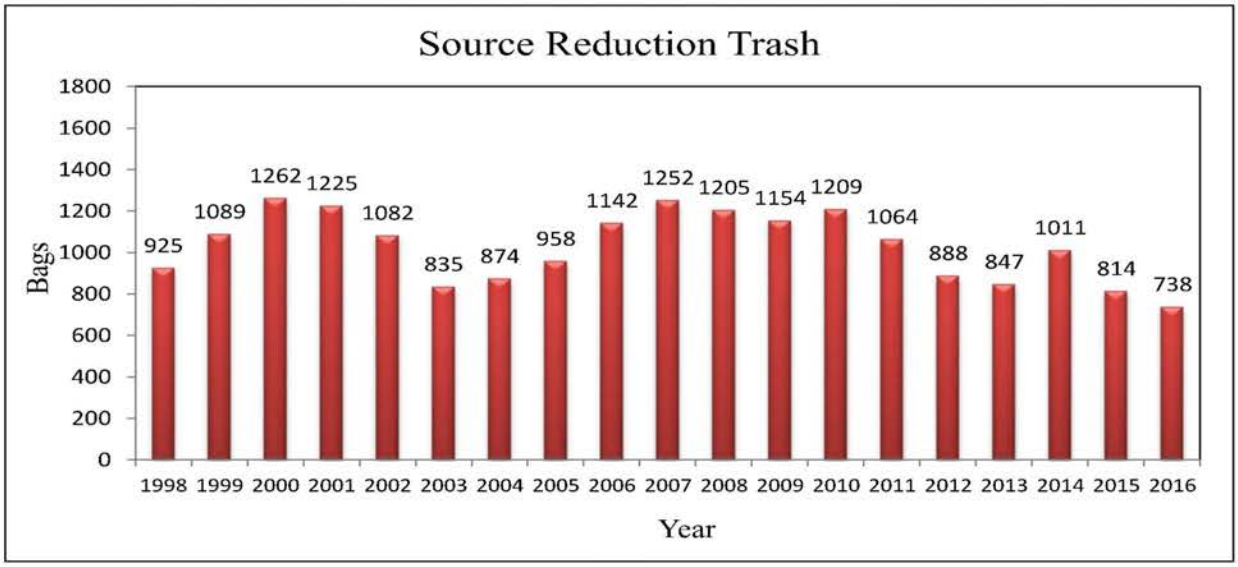

Monomolecular Surface Film
Gallons
Year
0
10
20
30
40
50
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
13.84 15.85 43.74 42.23 17.87 39.68 35.71 23.51 23.57 10.69 8.48 4.34 0.09 0.13 1.41 5.03 2.2 0.21 2.28

Totals


Gasoline
Gallons
5000
4000
3000
2000
1000
0
3263.1
3727.2
3940.2
3965.6
3960.2
3818.1
3622.4
3610.1
3619.2
4065.5
3521.3
3409.6
3180.7
3405.8
2935.4
2843.7
3123.6
2946.8
2869.2
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year


Hazards to Navigation
Hazards Removed
150
125
100
75
50
25
0
39
17
7
8
9
35
14
15
8
17
23
17
53
44
38
117
68
132
120
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

Totals


Source Reduction Trash
Bags
1800
1600
1400
1200
1000
800
600
400
200
0
925
1089
1262
1225
1082
835
874
958
1142
1252
1205
1154
1209
1064
888
847
1011
814
738
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
Year

Totals

Confidential

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DUKE ENERGY MOSQUITO CONTROL PROGRAM DAILY WORK SHEET--2016 -- LAKE_____

Crew_____&_____, Boat No._____

ADDRESS: Duke Energy Environmental Center, (MG03A3), 13339 Hagers Ferry Road, Huntersville, NC 28078

This spray activity is directed under the supervision of Kenneth L. Manuel, N.C. Cert. Pest. Appl. Lic. **No. 881** & S.C. Cert.Pest. Appl. Lic. **No. C0005409** (Public Health), Tommy W. Bowen, N.C. Cert. Pest. Appl. Lic. **No. 891** & S.C. Cert. Pest. Appl. Lic. **No. C0005454** (Public Health), Wade Harmon, N.C. Pest. Appl. Lic. **No. 1494** & S.C. Cert. Pest. Appl. Lic. **No. C0029677,** Jack R. Hudish, N.C. Pest. Appl. Lic. **No. 1326** & S.C. Cert. Pest. Appl. Lic. **No. C0013354** and Kermitt Taylor, N.C. Pest. Appl. Lic. **No. 1493** & S.C Cert. Pest. Appl. Lic. **No. C0009686.** Manuel can be contacted at (980) 875-5424 or mobile (704) 996-5221. Bowen can be contacted at: (980) 875-5422 or mobile phone (704) 996-5219. Hudish can be contacted at (864) 873-3425 or mobile phone (864) 710-0060. Harmon can be contacted at mobile number (704) 634-7741 and Taylor can be reached at mobile number (704) 634-7743. The EPA and state approved mosquito larvicides applied are : VectoBac 12AS, Altosid briquets, Altosid XR Extended Residual Briquets, Altosid liquid larvicide, and Agnique larviciding oil. **See reverse of this shee for larvicide details.**

DAY	DATE	Bti	Altosid Liq	Altosid	Agnique	Trash	Weather	Gas	AREA TREATED
		ounces	ounces	briquets	ounces	Bags	Fair/Rain	Gallons	CHECK THE BOX AT THE END OF EACH ROUTE
									RECORD THE NUMBER OF ROUTE DAYS
MONDAY									Start:
Checklist Over									End:
TUESDAY									Start:
									End:
WEDNESDAY									Start:
									End:
THURSDAY									Start:
End of Day - Clean Tank and Filter (_____Initials)									End:
FRIDAY									Start:
									End:

SPECIAL ACTIVITIES: Trees and other hazards to navigation tied off and marked (report to management); other activities.

DATE	ACTION TAKEN & TIME REQUIRED
1-	
2-	
3-	

CONTACT WITH PUBLIC:	DESCRIPTION OF PROBLEM
Name	
Address	
Phone No.	
NOTES:	DAILYworksheet

DUK_00004506

Exhibit 6

DUKE POWER COMPANY

GENERAL OFFICE
CHARLOTTE 1, N.C.

June 1, 1962

Mr. A.W. Eudy
Rt. #1
Stanley, N. C.

Dear Mr. Eudy:

I was sorry that I missed you on my two visits to your home, however, I did talk to your wife this morning about the insects that are aboundant on your premises.

The insect is a "niedge" very commonly mistaken for mosquitoes and bear close resemblance. They are widely distributed and may often be extremely aboundant in the vicinity of standing water since the larvae of most species are acquatic.

They are attracted to light and swarm in great numbers late in the evening and produce a distinct humming sound that may cause annoyance.

This family comprises about 2000 species and has no medical importance.

Our oiling crew was in your vicinity several days ago and some relief should be noticeable by now.

Yours very truly,

John A. Lyon II
Supervisor
Health & Sanitation

CC: Mr. Roy Small
Lincolnton County Health Dept.
Lincolnton, N. C.

Dear Roy: I talked to Mrs. Eudy this am. The Insect Family: Chironomidae (Tanypodidae) which is also the "Midge" Type

Exhibit 7

DUKE POWER COMPANY
GENERAL OFFICE
CHARLOTTE 1, N. C.

January 15, 1968

Mr. P. O. Brabham
1223 Jones Street
Gastonia, N. C. 28052

Dear Mr. Brabham:

We carry out an extensive larvaciding program on Lake Wylie during the mosquito breeding season. The Mill Creek area is covered routinely as is the remainder of the lake by a power boat rigged with a power sprayer. When the lake is low, the men are instructed to spray some of the larvacide on the bank in these coves so that the water will pick up the larvacide as the lake rises.

Very probably most of your mosquito problem existed in August and September of last summer. The influx of mosquitoes we had at that time was due to the breeding of flood water mosquitoes following heavy rains. It is very difficult to control these flood water species of mosquitoes since they breed in pot holes and depressions in swamps and have flight ranges of several miles. These mosquitoes are generally very annoying since they are vicious biters.

If we can be of further assistance, please call us.

Sincerely yours,

George T. Swearingen
Manager
Environmental Health

GTS/P

COPY

File under complaints

1223 Jones St.
Gastonia, N. C.
Jan. 4, 1968

Duke Power Co.
P. O. Box 2178
Charlotte, N.C. 28201

Gentlemen:

We have a cottage in a cove just off Mill Creek and this past year we were troubled greatly by mosquitos. If your men spray when the water is low, the boat cannot reach the end of the cove, consequently the spray is not effective. In such a case the men should spray from the bank in order that the breeding spots be covered.

I would appreciate your looking into this matter to see if something cannot be worked out for the coming summer.

Thank you.

Sincerely yours,
P. O. Brabham
P. O. Brabham

Received 11 Jan 68

Thank this check for $45.00
P.B.
1-5-68

Answered 15 Jan. 1968

Cat.
18-24

P. O. Brabham
1223 Jones St.
Gastonia, N.C. 28052

GASTONIA, NC
PM
JAN 4
1968
28052



Mr. Cobb
3rd floor

Duke Power Co.
P. O. Box 2178
Charlotte, N. C. 28201

Exhibit 8

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION

Clyde Marcus Jones, II, Dennis Phillips, and Deborah Phillips, on behalf of themselves and all others similarly situated,

Plaintiffs,

vs. Case No. 3:24-cv-01281-MGL

Duke Energy Corporation and Duke Energy Carolinas, LLC,

Defendants.

VIDEOTAPED TELECONFERENCE

DEPOSITION OF: WILLIAM P. BECKHAM

DATE: Friday, October 17, 2025

TIME: 11:03 a.m.

TIME ENDED: 1:16 p.m.

LOCATION: Springhill Suites by Marriott
140 Wall Street
Camden, South Carolina

REPORTED BY: YVONNE R. THURSTON-BOHANNON
Registered Merit Reporter,
Certified Realtime Reporter

Job No. CS7650966

APPEARANCES:

ATTORNEYS FOR THE PLAINTIFFS
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and

SAVAGE, ROYALL & SHEHEEN, LLP
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(864) 253-6105
(864) 591-2050 - FAX
kevindunlap@parkerpoe.com

ALSO PRESENT:
Alan Metts, Videographer
Lauren Llamas, Esquire, Duke Energy (Via Video Teleconference)

(INDEX AT REAR OF TRANSCRIPT)

actually, let -- let me ask you this.

So for a part of that time, you would have worked for the Duke mosquito control program; is that right?

A. Yes.

Q. Okay. And what years would you have worked for the program?

A. '65, '66, '67, and a little bit in '68, '69, and I mean a little bit, I had a conflict with basic training in the Army and summer school. So I would only do it a week or two before I was -- had to take a different course.

Q. Any in the 1970s?

A. I don't think so. I was --

Q. Okay.

A. -- because I returned -- I was overseas. I returned in '71. I -- if I did, I don't recall.

Q. Okay. And this indicates under the heading "Post World War II through the late 1980s" that there were -- first it indicates in that second sentence, "Only mosquito -- mosquito breeding habitats were treated."

Is that true?

A. Correct.

may have been one up in Dutchman's Creek. May have been one in Colonel's Creek or may have been one in Wateree Creek. I don't -- I don't remember. We -- we didn't -- we didn't have anything to do with them.

Q. What was the closest marina?

A. The one in Bowden -- the one in Beaver --

Q. Beaver Creek?

A. -- Creek, Bowden Marina.

Q. And is there one still there today in that approximate location?

A. I think there is.

Q. Okay. And as I -- I pointed out a few minutes ago, it says, "Only mosquito breeding habitats were treated"; is that right?

A. Yes.

Q. And so when you were doing the treatment part of the program, did you spray only in the back of coves where the water was stagnant?

A. Mostly.

Q. And when you did that, you would -- you were looking for a breeding habitat. So is it true that you would go to the back of the cove, spray that, but you were not spraying the rest of the

shoreline in the cove?

A. No.

Q. Okay. What -- what was happening?

A. (No response.)

Q. We may have just missed each other. Let me -- let me ask it a better way.

When you were spraying, you would -- you were looking for the mosquito breeding habitat which was in the back of the cove in the stagnant water, so you would go there to spray.

A. Correct.

Q. And you did not spray the rest of the shoreline in the cove, did you?

A. No.

Q. And you did not spray the rest of the shoreline on the water outside of those breeding habitats where stagnant water was located. Is that accurate?

MR. SOLOMONS: Object to the form.

THE WITNESS: Correct.

BY MR. DUNLAP:

Q. And you would not have sprayed in the open water?

A. No, we did not.

Q. When you would -- when you would spray

Q. Do you recall people talking with you and indicating that they did want the lake sprayed for mosquitos?
A. Oh, yeah.
Q. Were people happy about that?
A. Yeah.
Q. Do you ever recall people complaining if they didn't see you guys out there spraying for the mosquitos?
A. Say that again.
Q. Do you recall people complaining if they didn't see people spraying for mosquitos?
A. No, I don't remember that.
Q. Let's look at page 8. And if you look with me -- this is the next to last paragraph mentioned on that page. You'll see there in the -- the two ending sentences, it says, "On Lake Wateree for example, yellow pines were logged on the lot, cut into rough cut board at local saw mill. The mosquito control crew -- crew used the boards to build the small one room facility at the lake."
Do you see that?
A. No.
Q. I'm sorry. Look -- let me see yours.
A. No reading glasses.

Q. -- spray --
A. To spray.
Q. -- spray the water?
A. Right.
Q. Right.
Okay. And on this page which is 1815, our date range is July 22nd of 1968 through July 26th of 1968; is that right?
A. Yeah.
Q. And, again, here we have two barrels being put out except for one day which was three; is that right?
A. On the second day --
Q. Yes, sir.
A. -- on the second page?
Q. Yes, sir.
Do you see that?
A. Yeah.
Q. And, again, you see here that under the "Transformer Oil Used," there's no indication that transformer oil was used. Do you see that?
A. Correct.
Q. And, again, this says, "Wateree Lake" which is Lake Wateree; is that right?
A. Right.

Q. And so you said these two guys were coaches, I believe; is that right?
A. Correct.
Q. And so Mr. Hutchinson, was he a football coach?
A. He was. Football and baseball.
Q. And then Clyde Jones, was he also a football coach?
A. Yes, he was.
Q. Okay. And is Marcus Jones the son of Clyde Jones?
A. Yes, he is.
Q. And in terms of the gallons of gasoline used, if you look back to the -- from the first page to the second page, that looks relatively consistent to me. Does that look --
A. Yeah.
Q. -- relatively consistent to you?
So you would have been out there for about the same amount of time --
A. Yeah.
Q. -- because you used that --
A. Yeah.
Q. -- roughly the same amount of gas?
And Clyde Jones, was he the head

often. You'd pull it out and you'd take it over the side of the boat and you'd run your hand like that and it would go away, then you'd put it back in.

Q. When you say you would hear it --

A. You could hear the motor.

Q. Okay.

A. I mean, it was not pulling the oil.

Q. When did you first learn there were PCBs in Lake Wateree? Do you remember?

A. I -- I don't know.

Q. Don't know.

Did you have any knowledge about fish consumption advisories as to Lake Wateree?

A. No.

Q. Do you fish in Lake Wateree?

A. I have in the past.

Q. Has it been a while?

A. Yeah.

Q. Been years?

A. Yeah.

Q. When you were out operating the boat, did you all ever interact with people? Would they --

A. Yeah.

Q. -- talk to you and --
A. Yeah.
Q. Okay. And what do you remember about any of that? Did -- did any of them express appreciation for what you were doing or were they in a state of mind as not to care?
A. I --
Q. It's okay.
A. -- when you said interaction, Hutch was a character, the Hutchinson guy. And we'd kick -- we'd go by these people. They'd say, "How they biting, Joe?"
They ask that question all the time. I'd smile before we got there, and so --
Q. Because you knew what was coming.
A. We actually had people that was a -- there were a couple businesses and they'd throw the cans out back and the people would come out and say, "Hey, spray my cans. Spray my cans."
And they -- I mean, it looked like crap and stuff. So people were -- people would ask us, you know -- they'd say, "Hey, put it in our trees," I mean, you know. We didn't -- we wouldn't put it in the tree, but...
Q. Did you ever place barrels in the mouth

CERTIFICATE OF REPORTER

I, Yvonne R. Thurston-Bohannon, Registered Merit Reporter, Certified Realtime Reporter, and Notary Public for the State of South Carolina at Large, do hereby certify:

That the reading and signing of the foregoing deposition by the witness was not requested.

That the foregoing transcript was taken before me on the date and at the time and location stated on page 1 of this transcript; that the deponent was duly sworn to testify to the truth, the whole truth and nothing but the truth; that the testimony of the deponent and all objections made at the time of the examination were recorded stenographically by me and were thereafter transcribed; that the foregoing deposition as typed is a true, accurate and complete record of the testimony of the deponent and of all objections made at the time of the examination to the best of my ability.

I further certify that I am neither related to nor counsel for any party to the cause pending or interested in the events thereof.

Witness my hand, I have hereunto affixed my official seal October 17, 2025, at Columbia, Richland County, South Carolina.



Yvonne R. Thurston-Bohannon
Registered Merit
Reporter, CRR
My Commission expires
May 14, 2035

Exhibit 9

IN THE UNITED DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION

CLYDE MARCUS JONES, II, DENNIS PHILIPS, AND DEBORAH PHILLIPS, ON BEHALF OF THEMSELVES AND ALL OTHERS SIMILARLY SITUATED,

Plaintiffs,

vs. CASE NO. 3:24-cv-01281-MGL

DUKE ENERGY CORPORATION AND DUKE ENERGY CAROLINAS, LLC,

Defendants.

*CONFIDENTIAL DESIGNATIONS MAY BE PENDING

VTC VIDEOTAPED
DEPOSITION OF: CLYDE MARCUS JONES, II
(Appearing by VTC)
DATE: October 8, 2025
TIME: 9:06 a.m.
LOCATION: Zoom Videoconference
TAKEN BY: Counsel for the Defendants
REPORTED BY: Susan M. Valsecchi, Registered Professional Reporter, CRR
(Appearing by VTC)

Job No. CS7650959

APPEARANCES OF COUNSEL:

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BY: KEVIN A. DUNLAP
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kevindunlap@parkerpoe.com

A. Prior to the lawsuit?
Q. Prior to informing them that you were going to bring the lawsuit.
A. Um, so there was conversations about the contamination of the lake per the advisory by consumption of the fish in the lake.
Q. And when did that come out?
A. When did the --
Q. The advisory you're referring to.
A. Oh. I'm not exactly sure when the exact date was, but, um -- yeah, I'm not -- I'm not exactly sure when that date was.
Q. So when did you have these conversations with your family members about the alleged PCB contamination and fish advisories?
MS. FICKLING: Objection to form.
Go ahead.
THE WITNESS: So I did not learn of PCBs in the lake until reading the study about PCBs in the lake.
BY MR. LONG:
Q. And when was that, approximately?
A. Um, it would have to be late 2021, '22.
Q. How did that study come to your attention?

was introduced?

A. I'm sorry?

Q. That was how your -- you got knowledge of PCBs in the lake -- was reading that study?

A. As it relates to PCBs.

Q. So are there any other conversations that you can relate to me that you had with your family about this lawsuit, PCBs in the lake, or fish consumption advisories?

MS. FICKLING: Objection to form.

Go ahead.

THE WITNESS: So consumption of fish, I would add my father, my deceased father, in that as well. We discussed the advisory after it was issued.

BY MR. LONG:

Q. Okay. Any other conversations with your family members that you can recall about those issues?

A. I'm sure we had conversations, but I don't recall.

Q. And why is it the case that your daughter Kathryn Jones Demetri is not a plaintiff in this lawsuit?

MS. FICKLING: Objection to form.

out fishing?

A. I went fishing off the coast of South Carolina a year or two ago, I think maybe -- more than a year, but it seems like about a couple years ago.

Q. When's the last time you went fishing in any South Carolina lake?

A. It's been a number of years.

Q. And why has it been so long since you went fishing on any South Carolina lake?

A. Well, I don't randomly go to any lake. The lake that I would fish on, Lake Wateree, I haven't fished because of the -- the warnings of contamination.

Q. When's the last time that you fished in Lake Wateree?

A. It would have been -- as I recall best, I believe the last time would have been early 2001, perhaps.

Q. I just want to make sure I heard you correctly. Did you say the last time that you fished in Lake Wateree was early 2001?

A. I'm sorry, thank you. 2021, yes.

Q. Okay. So prior to early 2021, when you did fish in Lake Wateree, was that competitively?

For fun? What were the circumstances?
A. For pleasure, yes.
Q. And when you would fish in Lake Wateree, was that catch and release for you?
MS. FICKLING: Objection to form.
THE WITNESS: After learning of the contamination, certainly.
BY MR. LONG:
Q. Okay. And before learning of the contamination in 2021, what was your practice with respect to fishing?
MS. FICKLING: Objection to form.
THE WITNESS: Would you catch and release prior to 2021 as well?
MS. FICKLING: Objection to form.
Go ahead.
THE WITNESS: Not exclusively, but yes.
BY MR. LONG:
Q. Okay. And you would also eat some of the fish that you were able to catch?
A. No.
Q. This is prior to 2021.
A. Uh-huh.
Q. Did you eat any of the fish that you caught?

A. No.
Q. Was there --
A. You asked me if I fished --
Q. Okay.
A. -- prior.
Q. So --
A. And then consumption's two different things, correct?
Q. Right.
A. Okay.
Q. So was there any -- any consumption of any fish that you ever caught out of Lake Wateree at any time?
A. Yes.
Q. There was?
A. Yes.
Q. Okay. When was the period of time that you would eat the fish that you caught out of Lake Wateree?
A. I would say prior to 2010.
Q. What made you stop eating the fish that you caught in 2010 out of Lake Wateree?
A. The knowledge from the South Carolina Department of Health and DNR about the contamination of the lake.

Q. And how did that knowledge in 2010 come to you?

A. I recall seeing the signs on the lake about the contaminated fish.

Q. Best you can recall, what did the signs that you saw in 2010 say?

A. That consumption of fish in Lake Wateree posed a health hazard.

Q. Did you ask any questions of anyone when you saw those warnings posted in 2010?

A. It was pretty explicit.

Q. So I take it -- take it, no, you didn't ask any questions at that time about what you were reading on those signs?

MS. FICKLING: Objection to form.

THE WITNESS: At that very moment, no. As time passed, obviously I tried to learn more about exactly what the contamination was.

BY MR. LONG:

Q. Okay. So between 2010 and 2021, you continued to fish in Lake Wateree; is that right?

A. I had caught fish in between that time.

Q. Okay. But all of those you would just release, not consume?

A. Correct.
Q. Okay. When you would fish in Lake Wateree, where did you do your fishing?
A. At my residence.
Q. Off of one of the docks?
A. No, not necessarily.
Q. But sometimes off the docks?
MS. FICKLING: Objection to form.
THE WITNESS: Usually not.
BY MR. LONG:
Q. Okay. Usually off of the shore?
A. Usually.
Q. And have you ever fished anywhere else in Lake Wateree other than off of your property?
A. Not that I recall.
Q. Okay. And did you fish regularly from the time that you purchased the property with your family in 20 -- 2001 up until 2010?
A. My dad and I would enjoy fishing, and I enjoyed fishing with my girls as well.
Q. And how regularly were you fishing at Lake Wateree in that 2001 to 2010 time frame?
A. As often as we could.
Q. And did the frequency of your fishing change after you learned of the fish consumption

advisory in 2010?

A. I would say the consumption of the fish changed, yes.

Q. Fair enough, I heard that, but I was asking about the frequency of the fishing activity.

Did the frequency of the fishing activity change after you learned of the fish consumption advisory in 2010?

A. I would say it was similar.

Q. And how often or how frequent was it the case after 2010 that you would engage in some sort of fishing activity at Lake Wateree?

A. I don't -- I don't know a specific amount of times.

Q. Has that changed up until this date?

A. Yes.

MS. FICKLING: Objection to form.

BY MR. LONG:

Q. Okay. When did it change?

A. After learning about the PCBs in the lake.

Q. 2021 -- sorry, 20 -- 2021/2022, thereabouts?

A. Yes.

Q. When the property was bought in 20 --

MS. FICKLING: Objection to form.

THE WITNESS: My recollection of the contamination was just that the lake was contaminated. I didn't know about -- about how the lake was contaminated.

BY MR. LONG:

Q. Have you ever had your property at Lake Wateree sampled or tested for PCBs?

A. Have I?

Q. Yes.

A. I have not.

Q. Do you know whether any such sampling or testing of your property has occurred?

A. Yes, I'm aware.

Q. And do you know approximately when that occurred?

A. No.

Q. And do you know who was involved in the sampling or testing of your property for PCBs?

A. I do not know.

Q. How did you become aware that your property was sampled or tested for PCBs?

A. I saw an individual testing.

Q. Did you speak to this individual?

A. I did.

Q. Did this individual have a name?
A. I do not recall.
Q. Did this individual give you a card?
A. I don't recall receiving a card.
Q. Did this individual have a vehicle with any signage on it?
A. I don't recall that either.
Q. Was there just one individual doing this testing for PCBs at your property?
A. Yes.
Q. And how did you become aware that the testing included for the constituent PCBs?
A. Repeat the question, please.
Q. How did you become aware that the testing this individual was doing was for PCBs?
A. As I recall, the individual acknowledged that.
Q. When you asked them why they were there and what they were doing?
MS. FICKLING: Objection, form.
Go ahead.
THE WITNESS: Yeah, that's my recollection.
BY MR. LONG:
Q. Okay. Was there anybody with you when

you had this conversation with this individual?

A. No.

Q. And this conversation with the individual occurred after this lawsuit was filed or before?

A. It was after my conversation with counsel. I don't know about as it relates to when this complaint was filed, which came first.

Q. Was it your understanding that the purpose of the testing of your property for PCBs was in connection with this litigation?

MS. FICKLING: Objection to form.

THE WITNESS: I'm sorry, one more time.

BY MR. LONG:

Q. Was it your understanding that the purpose for the testing of your property for the PCBs was in connection with this litigation?

A. That was an assumption, but nobody necessarily told me that.

Q. And have you heard anything about the results of said sampling?

A. I'm not aware of any results from that.

Q. Were you provided any information at all about the conclusions that were reached as a result of the sampling?

A. I don't recall any results, no.
Q. Were you curious about the results?
A. Sure.
Q. And did you think to ask your lawyers about this sampling and the sampling results? Did you think about that?
MS. FICKLING: Objection to form.
THE WITNESS: Is that not covered in --
BY MR. LONG:
Q. No, I'm talking --
A. -- my privilege?
Q. I'm -- I'm not asking about a conversation you've had with them. I'm asking about your own opinion.
A. Oh, okay.
Q. Did you think about asking for the results?
MS. FICKLING: Objection to form.
Go ahead.
THE WITNESS: I don't recall asking for the results, no.
BY MR. LONG:
Q. Did you think about asking for them, is the question.
MS. FICKLING: Objection to form.

THE WITNESS: It was several years ago, and I'm not real sure what I was thinking about at the time.

BY MR. LONG:

Q. Have you thought about the results since?

A. No, I'm -- I have not.

Q. Did you ever see any paperwork related to that testing?

MS. FICKLING: Objection to form.

THE WITNESS: I have -- have not seen any paperwork, no.

BY MR. LONG:

Q. Have you seen -- or let me ask you this. Were you charged for the cost of such testing?

A. No, I was not.

Q. Do you know whether those samples that were taken, whether they are still being preserved somewhere?

A. I do not know.

Q. Do you know of any other events involving the sampling or testing of your property for PCBs other than that instance?

A. Other than the Duke study as well?

your renters at your property regarding use of the lake?

A. None that I'm aware of. You know, I -- I realize there's a couple of things that need to be done, but I don't -- I didn't put anything specifically on the site myself.

Q. Did you specifically have any conversations with your renters about PCBs in the lake?

A. I have not.

Q. Have you warned any renter about their use of the lake because of PCBs in the lake?

A. Not to my knowledge.

Q. Why not?

A. I just -- I haven't thought about that.

Q. Turn over one more page to a part that starts, again, "Amenities," and in the upper left-hand corner it has a section on Safety.

Do you see that?

A. I do.

Q. Okay. Just read that section on safety to yourself, if you would.

A. Okay.

Q. Okay. Is this information on safety reflecting information that you provided to Vrbo,

of what is actually there in what capacity.

Q. Is there still fishing equipment at the property that renters can use?

A. Yes.

Q. And is there still water toys and floats at the property for renters' children to use?

A. To my knowledge. Again, we don't provide the water toys and floats, but often people that rent will leave stuff like that.

Q. Did you have any discussions with any of your renters about fishing from your property?

A. None that I can remember.

Q. Did you give any kind of warnings to any of your renters about fish consumption advisories in Lake Wateree?

A. I'm pretty sure I stated that already.

Q. Specifically as to fish consumption advisories, did you tell them not to eat the fish?

A. I don't recall telling them that. The public signs, I think, speak for themselves.

Q. Okay. But you specifically did not warn your renters against eating the fish, correct?

A. I had no conversations to renters about the fish in the lake.

Q. And why is that?
A. I think the general public is allowed to make their own decisions on whether they fish or not in Lake Wateree.
Q. Could you turn over two more pages to the rating section. It's the one that starts -- and it's horizontal, not portrait.
A. Sure.
Q. It says, 10, Exceptional, 61 reviews.
Do you see that?
A. I do.
Q. And were you aware that your property had received exceptional reviews from those who rented through Vrbo?
A. I was not.
Q. Does it surprise you to learn that?
MS. FICKLING: Objection to form.
THE WITNESS: As I stated earlier, it's a beautiful property.
BY MR. LONG:
Q. Do you ever read through feedback you get on your property from renters posted to Vrbo?
A. Rarely.
Q. You have done, though?
A. I don't recall, but communications that

Q. Yeah. Who were these people your father knew that told him what the material was?

MS. FICKLING: Objection to form.

THE WITNESS: I don't recall him stating any specific names per se, just friends.

BY MR. LONG:

Q. Have you ever had concerns about mosquitos at your property at the lake?

A. So mosquitos themselves --

Q. Yes.

A. -- don't bother me too much.

Q. So did you ever spray or try to control the mosquitos at the property at the lake?

A. I did not.

Q. Have you ever received complaints about mosquitos at your property from anybody else that uses the property?

A. Not to my knowledge.

Q. Have you ever complained to anyone about mosquitos at Lake Wateree?

A. When you're around a large body of water, there's -- always seems to be a lot of bugs. And so we're always kind of complaining about the bugs and always complaining when they're active

around, sometimes you're swatting bugs or flies or perhaps mosquitos. I don't really know the difference.

Q. Did you complain to any entity or other individual about these mosquitos or bugs at the lake?

MS. FICKLING: Objection to form.

THE WITNESS: I don't recall a complaint. I think it's just kind of a known thing when you're around a large body of water, that they're usually present.

BY MR. LONG:

Q. Do you know if anyone ever objected to the mosquito control program that Duke Energy ran?

A. I -- I think the -- the study itself objects to the program.

Q. Okay. Was there anyone while the program was running that objected to the study -- I'm sorry, that objected -- let me rephrase the question. It got tangled.

A. That's okay.

Q. You know the program, the mosquito control program, is not running any more?

MS. FICKLING: Objection to form.

THE WITNESS: It ended 2016.

BY MR. LONG:

Q. Right. Do you know whether anyone ever complained about the mosquito control program while it was in operation?

MS. FICKLING: Objection to form.

THE WITNESS: The program or the -- or the results of the program?

BY MR. LONG:

Q. Were there any complaints about the mosquito control program at all while it was running?

MS. FICKLING: Objection to form.

THE WITNESS: Not that I recall.

BY MR. LONG:

Q. I want to talk to you now about the Wateree homeowners association.

A. Uh-huh.

Q. Are you currently a member?

A. Currently.

Q. Okay. When did you become a member of the Wateree homeowners association?

A. Recently.

Q. How recently?

A. In the last week or so.

Q. Why did you join?

CERTIFICATE OF REPORTER

I, Susan M. Valsecchi, Registered Professional Reporter and Notary Public for the State of South Carolina at Large, do hereby certify that the foregoing transcript is a true, accurate, and complete record.

I further certify that I am neither related to nor counsel for any party to the cause pending or interested in the events thereof.

Witness my hand, I have hereunto affixed my official seal this 9th day of October, 2025, at Columbia, Richland County, South Carolina.



Susan M. Valsecchi, RPR, CRR
My Commission expires
November 12, 2034

Exhibit 5

Entire home

Serenity with a Sunset

Lakefront vacation home in Camden with kitchen



10 **Exceptional**

See all 61 reviews >

EXHIBIT 8W
PENGAD 800-631-6989
#5 JONES
10-8-25

4 bedrooms 3 bathrooms Sleeps 13 2100 sq ft

Popular amenities

- Dryer
- Washer
- Kitchen
- Parking available
- Barbecue grill
- Outdoor Space

See all >

Explore the area



- Lake Wateree State Park
- Lake Wateree — 2 min drive
- Carolina Motorsports Park — 42 min drive

See all about this area >

Camden, SC
View in a map >

Add dates for prices

Check-in
Select date

Check-out
Select date

Travelers
1 room, 2 travelers

Check availability

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Where to? Camden, South Carolina, United States ...

Dates Oct 10 - Oct 12

Travelers 2 travelers

Search

← See all properties

Save

Entire home

Serenity with a Sunset

Lakefront vacation home in Camden with kitchen



Overview Amenities Policies Location

3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-9 Page 28 of 100

Overview | Amenities | Policies | Location

10 Exceptional

See all 61 reviews >

4 bedrooms

Sleeps 13

3 bathrooms

2100 sq ft

Popular amenities

Dryer

Washer

Kitchen

Parking available

Barbecue grill

Outdoor Space

See all >

Explore the area



Lake Wateree State Park

Lake Wateree 2 min drive

Carolina Motorsports Park 42 min drive

See all about this area >

Camden, SC

View in a map >

Add dates for prices

Check-in
Select date

Check-out
Select date

Travelers
1 room, 2 travelers

Check availability

3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-9 Page 29 of 100

Rooms & beds

4 bedrooms (sleeps 13)



Bedroom 1

1 Queen Bed



Bedroom 2

1 Queen Bed



Bedroom 3

1 Double Bed



Bedroom 4 +4

6 Twin Beds and 2 Double Futons

3 bathrooms

Bathroom 1

Soap · Towels provided · Bathtub or shower · Toilet · Hair dryer

Bathroom 2

Soap · Towels provided · Bathtub or shower · Toilet

Bathroom 3

Soap · Towels provided · Toilet · Shower only

3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-9 Page 30 of 100

Spaces

- Porch or lanai
- Kitchen
- Garden
- Dining area

See all rooms and beds details

About this property

Serenity with a Sunset

Location: 1778 Sailing Club Road (Google is incorrect- which says 1784)
Main floor: Large porch with lots of seating, 3 bedrooms (Q, Q, F), 2 full baths (tub/shower), greatroom, eat-in kitchen, laundry & pantry. Top floor: open floor (5 T, 1 futon with top T bunk), sitting area with tv, full bath (shower-no tub).
Under house: all open space with seating. Outdoors: large parking area, large yard, large beach with shade, large dock. AMAZING view of lake.

Our prices include all fees. No hidden fees.

3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-9 Page 31 of 100

Rooms & beds

4 bedrooms (sleeps 13)



Bedroom 1

1 Queen Bed



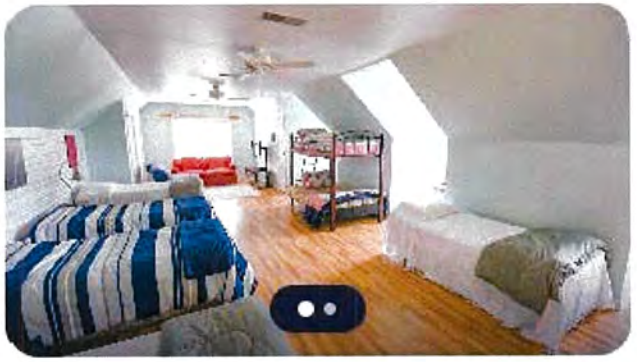
Bedroom 2

1 Queen Bed



Bedroom 3

1 Double Bed



Bedroom 4

6 Twin Beds and 2 Double Futons

Open upstairs room- sleeps 8

Rooms & beds



Bedroom 3

1 Double Bed



Bedroom 4

6 Twin Beds and 2 Double Futons
Open upstairs room- sleeps 8

3 bathrooms

Bathroom 1

Soap · Towels provided · Bathtub or shower · Toilet · Hair dryer
In Main bedroom. 2-sink vanity

Bathroom 2

Soap · Towels provided · Bathtub or shower · Toilet
Hall

Bathroom 3

Soap · Towels provided · Toilet · Shower only
Upstairs

Spaces

Dining area
Seating for 11 people
Table seats 8, bar seats 3, porch table seats 4

Kitchen

Lawn/garden

Porch/veranda
Porch

Overview | Amenities | Policies | Location

About this property

Serenity with a Sunset

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Under house: all open space with seating. Outdoors: large parking area, large yard, large beach with shade, large dock. AMAZING view of lake.

Our prices include all fees. No hidden fees.

Amenities

- Kitchen
- Washer
- Dryer
- Free WiFi
- Air conditioning
- Outdoor Space

See all 63 amenities

Have a question?

Beta

Get instant answers with AI powered search of property information and reviews.

Ask a question
Is there free parking?

3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-9 Page 34 of 100

Amenities

Essentials

- Wireless internet
- Free wifi
- Internet
- Towels provided
- Linens provided
- Air conditioning
- Hair dryer
- Toilet paper
- Paper towels
- Basic soaps
- Heating

Kitchen

- Kitchen
- Refrigerator
- Dishwasher
- Microwave
- Stove
- Oven
- Grill
- Kitchen island
- Dishes & utensils
- Dining table
- Coffee maker
  Pot and pod
- Coffee grinder
- Kettle
- Blender
- Ice maker
- Toaster
- Lobster pot

Outside

- Fire pit
- Outdoor furniture
- Beach chairs
- Kayak/canoe
  2 Kayaks, 1 paddle board
- Water sports gear
  There is a dock large enough for at least 2 boats. Guests may use Wateree Marina for boat ramp. (see watereemarina.com)

Entertainment

Amenities

Entertainment

Games
Board games, corn hole, cards, poker chips, puzzles

Books

Television
Greatroom=Smart tv. Main bedroom=TV with Roku. Upper floor=TV with Roku

Smart TV

DVD player
Upstairs only

Video library
We do have some dvd's.

Baby & toddler

Baby gate

Books for kids

Laundry

Washing machine

Dryer

Iron & board

Parking

Parking
Large driveway

Safety

Carbon monoxide detector not reported (host has not indicated whether there is a carbon monoxide detector on the property; consider bringing a portable detector)

Smoke detector (host has indicated there is a smoke detector on the property)
Every room

Deadbolt lock

Fire extinguisher
Pantry

First aid kit
Hall closet

Exterior lighting

Emergency exit route
Upstairs has emergency ladder if needed.

Fire station contact
911

Hospital contact
911

Police contact
911

Accessibility

Wheelchair inaccessible

Amenities

Parking
Large driveway

Safety

Carbon monoxide detector not reported (host has not indicated whether there is a carbon monoxide detector on the property; consider bringing a portable detector)

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Hall closet

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Fire station contact
911

Hospital contact
911

Police contact
911

Accessibility

Wheelchair inaccessible

Location type

Waterfront

Lake

Lake view

Nearby activities

Boating

Marina

Suitability

Minimum age limit for renters

Pets

No pets allowed

Notes

There is an extra refrigerator, table umbrellas, fishing equipment, beach chairs and a few water toys/floats, in storage area under house.

Similar properties



Lake Front 6 Bedroom Home on Beautiful Lake Wateree.

Ridgeway

- ✓ Kitchen
- ✓ Washer
- ✓ Dryer
- ✓ Air conditioning

10/10 (44 reviews)



Impeccable Home w/ Dock & Pool on Lake Wateree!

Camden

- ✓ Pool
- ✓ Kitchen
- ✓ Washer
- ✓ Dryer

9.6/10 (35 reviews)



Charming Waterfront Ridgeway Cabin w/ Dock!

Ridgeway

- ✓ Kitchen
- ✓ Free WiFi
- ✓ Air conditioning
- ✓ Outdoor Space

9.8/10 (47 reviews)



The Estate: 4-BR, 6000 SF

Camden

- ✓ Hot Tub
- ✓ Kitchen
- ✓ Washer
- ✓ Dryer

9.4/10 (18 reviews)



Re
V
Li
✓
✓
✓
✓
9.8

House Rules

Check in after 3:00 PM

Check out before 11:00 AM

Minimum age to rent: 21

Children
Children allowed: ages 0-17

Events
No events allowed

Pets
No pets allowed

Smoking
Smoking is not permitted

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Important information

You need to know

Extra-person charges may apply and vary depending on property policy

Government-issued photo identification and a credit card, debit card, or cash deposit may be required at check-in for incidental charges

Special requests are subject to availability upon check-in and may incur additional charges; special requests cannot be guaranteed

Onsite parties or group events are strictly prohibited

Host has not indicated whether there is a carbon monoxide detector on the property; consider bringing a portable detector with you on the trip

Host has indicated there is a smoke detector on the property

Safety features at this property include a fire extinguisher, a first aid kit, and a deadbolt lock

We should mention

This property does not have elevators

About the neighborhood

Camden

Located in Camden, this vacation home is on the waterfront. Camden Archives and Museum and Historic Camden Revolutionary War Site are cultural highlights, and some of the area's landmarks include Battle of Hanging Rock Monument and Bethesda Presbyterian Church. Looking to enjoy an event or a game while in town? See what's happening at Carolina Motorsports Park or Springdale Race Course. Take an opportunity to explore the area for water adventures such as motor boating.

View more Vacation Homes in Camden



Camden, SC
View in a map

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Overview Amenities Policies Location

View more Vacation Homes in Camden



Camden, SC
View in a map

What's nearby

Lake Wateree - 2 min drive - 1.0 km

Springdale Race Course - 34 min drive - 30.7 km

Bethesda Presbyterian Church - 37 min drive - 33.2 km

Historic Camden Revolutionary War Site - 40 min drive - 35.2 km

Carolina Motorsports Park - 42 min drive - 31.3 km

Restaurants

The Retreat At Lake Wateree - 62 min drive

Windmill Restaurant - 59 min drive

Creekside Grill & Ale - 8 min drive

Club Clyde - 74 min drive

Beaver Creek Restaurant - 8 min drive

Getting around

Camden Station - 28 min drive

Columbia Metropolitan Airport (CAE) - 73 min drive

Frequently asked questions

- **Is Serenity with a Sunset pet-friendly?**
- **What time is check-in at Serenity with a Sunset?**
- **What time is check-out at Serenity with a Sunset?**
- **Where is Serenity with a Sunset located?**

3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-9 Page 40 of 100

10 Exceptional
61 reviews

Reviews are presented in chronological order, subject to a moderation process, and verified unless otherwise labeled.

Learn more

10 - Excellent	57
8 - Good	4
6 - Okay	0
4 - Poor	0
2 - Terrible	0

10/10 Cleanliness

10/10 Check-in

10/10 Communication

10/10 Location

9.8/10 Listing accuracy

10/10 Excellent

Robin M.
Jan 13, 2025

Liked: Cleanliness, check-in, communication, location, listing accuracy

Girls weekend

Our stay here was excellent! The house was very clean and we had a great time. The view of the lake was beautiful and had a beach area that is great for families. We will definitely stay here again!

Stayed 2 nights in Jan 2025

0

10/10 Excellent

Jennifer M.
Apr 27, 2025

Liked: Cleanliness, check-in, communication, location, listing accuracy

Lovely home!

Great lake property. Loved sitting on the porch w coffee in the mornings.

Stayed 3 nights in Apr 2025

0

10/10 Excellent

Dina C.
Jun 8, 2025

Liked: Cleanliness, check-in, communication, location, listing accuracy

Had another great year!! Always choose this house because it's the best. Fits our needs perfectly!!

Stayed 7 nights in Jun 2025

0

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0

See all reviews

About the host

Hosted by Marc Jones



Marc and Kathryn Jones live in Camden, SC.

Why they chose this property

Built in 2003 and named for the owners' deep Gamecock ties, "The Roost" gives its visitors a spectacular view of Lake Wateree any time of day. With the sunrise, observe the egret or duck as he takes his early morning route across the serene lake. Mornings are only disturbed by the of the occasional fisherman's lure. Throughout the lazy day, there is always a view of a few sailboats resting at the dock of the sailing club just across the cove. Breezy days often bring their captains out to play and practice their nautical skills. Evenings are not for only observing, but for participating in one of the most breath-taking sunsets anywhere. From the porch, from the shore, or from the dock the sunset view is a spiritual experience.

What makes this property unique

The view and the beach!

Languages:

English

Tell us how we can improve our site

Share feedback

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Hotels

Cabin Rentals Blue Ridge Mountains
Apartments Destin
Cabin Rentals Tamarack Ski Resort
rentals with pool in Cannon Beach
oceanfront rentals in Miami Beach
pet-friendly rentals in Myrtle Beach

Vacation Rentals

Festival Ranch Vacation Rentals
Stinson Beach Vacation Rentals
Stoneybrook Golf & Country Club Vacation Rentals
Chandler Vacation Rentals
Varenna Vacation Rentals
Channelside Bay Plaza Vacation Rentals
The Gulch Vacation Rentals
Bodega Bay Vacation Rentals
North Shore Vacation Rentals
Coronado Vacation Rentals
Whitefish Bay Vacation Rentals
Wildwood Crest Vacation Rentals
Callington Vacation Rentals
Coffins Beach Vacation Rentals
Precious Moments Chapel Vacation Rentals
Jessie M. Honeyman State Park Vacation Rentals
Bristol Vacation Rentals
Myrtle Beach Vacation Rentals
Panama City Beach Vacation Rentals
Camelback House Vacation Rentals
Parkside Vacation Rentals
Rainbow Beach Vacation Rentals
Westlake Village Vacation Rentals
Oroville Vacation Rentals

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Vacation rental guides
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Vrbo Travel Insurance

Company

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Overview Amenities Policies

Save

Entire home

Serenity with a Sunset

10 Exceptional

See all 61 reviews >

Loved by Guests

Guests rate this one of the best homes on Vrbo, giving it exceptional reviews.

4 bedrooms | 3 bathrooms | Sleeps 13 | 2100 sq ft

Popular amenities

- Dryer
- Parking available
- Barbecue grill
- Washer
- Kitchen
- Outdoor Space

See all property amenities >

Explore the area

Free cancellation
Before Tue, Dec 2

Thu, Jan 1 → Mon, Jan 5

December 2025

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2026

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Clear dates Submit

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Vrbo

Where to?
Serenity with a Sunset

Dates
Nov 7 - Nov 10

Tra
2

Filters | Popular | Price | Rooms & spaces | Sort by recommended | Compare properties

80 properties

How our sort order works

Members always get our best prices when signed in

Sign in | Learn more

You picked this property →



Camden

Serenity with a Sunset

House · Sleeps 13 · 4 bedrooms · 3 bathrooms

Nov 7 - Nov 10

10 Exceptional
61 reviews

We are sold out for your dates

Available for similar dates

Wed, Dec 31 - Sat, Jan 3 | Thu, Jan 1 - Sun, Jan 4 | Fri, Jan 2 - Mon, Jan 5

3:24-cv-01281-MGL Date Filed 11/03/25 Entry Number 90-9 Page 45 of 100

Overview Amenities Policies

Save

Entire home

Serenity with a Sunset

10 Exceptional

See all 61 reviews >

Loved by Guests

Guests rate this one of the best homes on Vrbo, giving it exceptional reviews.

4 bedrooms | 3 bathrooms | Sleeps 13 | 2100 sq ft

Popular amenities

- Dryer
- Washer
- Parking available
- Kitchen
- Barbecue grill
- Outdoor Space

See all property amenities >

Explore the area



Lake Wateree State Park

Free cancellation

Before Wed, Dec 3

Your dates are available

Start date Jan 2

End date Jan 5

Travelers 2 travelers

$514

$1,541 for 3 nights

All fees included

Starting at $84/mo or 0% APR with affirm. Learn more

Request to book

You will not be charged yet

Contact host

Property # 1127295

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Entire home

Serenity with a Sunset

10 Exceptional

See all 61 reviews >

Loved by Guests

Guests rate this one of the best homes on Vrbo, giving it exceptional reviews.

4 bedrooms | 3 bathrooms | Sleeps 13 | 2100 sq ft

Popular amenities

- Dryer
- Washer
- Kitchen
- Parking available
- Barbecue grill
- Outdoor Space

See all property amenities >

Explore the area



- Lake Wateree State Park
- Lake Wateree — 2 min drive
- Carolina Motorsports Park — 42 min drive

This property is not available for your dates on Vrbo. Try new dates to check availability.

See available properties for these dates
View search results

Sat, Dec 27 → **Mon, Dec 29**

October 2025

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November 2025

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Clear dates | Submit

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Entire home

Serenity with a Sunset

10 Exceptional

See all 61 reviews >

Loved by Guests

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Popular amenities

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See all property amenities >

Explore the area



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November 2025

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2025

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Clear dates | Submit

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Entire home

Serenity with a Sunset

10 Exceptional

See all 61 reviews >

Loved by Guests

Guests rate this one of the best homes on Vrbo, giving it exceptional reviews.

4 bedrooms | 3 bathrooms | Sleeps 13 | 2100 sq ft

Popular amenities

- Dryer
- Washer
- Kitchen
- Parking available
- Barbecue grill
- Outdoor Space

See all property amenities >

Explore the area



- Lake Wateree State Park
- Lake Wateree — 2 min drive

This property is not available for your dates on Vrbo. Try new dates to check availability.

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Sat, Dec 27 → **Mon, Dec 29**

January 2026

S	M	T	W	T	F	S
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4	5	6	7	8	9	10
11	12	13	14	15	16	17
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February 2026

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15	16	17	18	19	20	21
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Clear dates | Submit

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Guest reviews

Loved by Guests

10/10 Exceptional

61 reviews

What guests liked

- The house was very clean and well-maintained. (2 reviews)
- The property provided a comfortable and enjoyable experience for families with kids who had a blast. (2 reviews)
- The beach at the property was perfect for relaxation and a great spot for a lake weekend. (2 reviews)

From real guest reviews summarized by AI.

Cleanliness	Check-in	Communication	Location	Listing accuracy
10	10	10	10	9.8

Search reviews

Sort by: Most Recent

Traveler type: All

10/10 Excellent

Verified traveler
Traveled with family and young children
Sep 22, 2025

Liked: cleanliness, check-in, communication, location

Nice property. We thoroughly enjoyed our family vacation. Beautiful sunsets and nice beach

Stayed 3 nights in Sep 2025

Guest reviews

8/10 Good

DeeDee H.
Traveled with family and young children
Jul 20, 2025

Liked: cleanliness, check-in, communication, location, listing accuracy

Lovely house with plenty of beds but not enough sitting room if you're a big family and stuck inside due to weather. The only real complaint we had was there was 1/2 a roll of toilet paper left in each bathroom and 1 extra in the hall closet. We bought a 12 pack and stocked up for the next family! And less than 1/2 a roll of paper towels. We bought a 2 pack and left what we didn't use. The beach area was full of trash and dead fish but we cleaned that up. Enough of the cons!For the pros: This place has a large sitting area under the house, we used that space every evening. The porch is fantastic for morning coffee. The best part was the easy access to the water! We lounged in the water all day long. It was exactly what we hoped for. Fishing off the pier was a bonus. Albeit the pier needs a little repair.Great stay for our family getaway. We would definitely book here again.

See less

Stayed 3 nights in Jul 2025

10/10 Excellent

Meagan J.
Traveled with family and young children
Jun 15, 2025

Liked: cleanliness, check-in, communication, location, listing accuracy

Just left an incredible vacation at this amazing house! The house was clean, well stocked, and a great setup for large families. The beach was the perfect spot for the kids to play and adults to relax. Marc and Kathryn were amazing to work with and replied quickly anytime we had a question. Already planning to rebook for next summer. My husband said his favorite part was pretending to rub Howard's Rock and run down the hill - GO TIGERS!

Stayed 6 nights in Jun 2025

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Guest reviews

10/10 Excellent

Dina C.
Traveled with family and young children
Jun 8, 2025

Liked: cleanliness, check-in, communication, location, listing accuracy

Had another great year!! Always choose this house because it's the best. Fits our needs perfectly!!

Stayed 7 nights in Jun 2025

10/10 Excellent

Brad S.
Traveled with family
May 8, 2025

Liked: cleanliness, check-in, communication, location, listing accuracy

Stayed 4 nights in Apr 2025

10/10 Excellent

Jennifer M.
Apr 27, 2025

Liked: cleanliness, check-in, communication, location, listing accuracy

Lovely home!

Great lake property. Loved sitting on the porch w coffee in the mornings.

Stayed 3 nights in Apr 2025

10/10 Excellent

Robin M.
Traveled with group
Jan 13, 2025

Liked: cleanliness, check-in, communication, location, listing accuracy

Girls weekend

Our stay here was excellent! The house was very clean and we had a great time. The view of the lake was beautiful and had a beach area that is great for families. We will definitely stay here again!

Stayed 2 nights in Jan 2025

Guest reviews

10/10 Excellent

Kawsar T.
Dec 5, 2024

Liked: cleanliness, check-in, communication, location, listing accuracy

Great house!

A beautiful house, clean lots of things to do inside on a cold winter day. Beautiful view of the lake and sunset. My family greatly enjoyed our time there.

Stayed 2 nights in Nov 2024

10/10 Excellent

Angela G.
Traveled with family and young children
Jul 29, 2024

Liked: cleanliness, check-in, communication, location, listing accuracy

Relaxing

Overall a relaxing weekend. The house had everything we needed.

Stayed 3 nights in Jul 2024

10/10 Excellent

Renee H.
Traveled with family and young children
Oct 30, 2023

Liked: cleanliness, check-in, communication, location, listing accuracy

Great House!

My family had a great time. The house was awesome and the lake was so nice. The kids had a blast fishing and swimming.

Stayed 5 nights in Oct 2023

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10/10 Excellent

Anabella F.
Traveled with partner, traveled with group
Sep 17, 2023

Liked: cleanliness, check-in, communication, location, listing accuracy

Best lake property I've ever stayed

The photos of this house do not give the property justice! The view was spectacular and the beach at the bottom was the perfect hangout spot for a lake weekend! The hosts were also kind enough to supply us some birthday decorations for my boyfriends birthday! The room setups were perfect for our big group, and the property had a nice area for us to safely put our jet ski in the water without having to go to a boat launch! Everyone in our group loved the house, and we will definitely be returning! Can't wait until our next stay!

See less

Stayed 2 nights in Sep 2023

10/10 Excellent

za9L3faho8yzWdPKNpD9To7iRkL0Kq+g9gESIkyzNNmgtPxgvPeTEilPAAAAcDBuBgkqhkiG9w0BBwagY3.
May 11, 2023

Liked: cleanliness, check-in, communication, location, listing accuracy

Everything you need to relax

It was a great experience to stay in this house for a weekend. The house is spacious, very clean, very well equipped and the owner is very responsive.

Stayed 2 nights in Apr 2023

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Guest reviews

10/10 Excellent

Bryan M.
Apr 23, 2023

Liked: cleanliness, check-in, communication, location, listing accuracy

Amazing

Our group loved our stay here. It was great for us and will be great for a large group, particularly with children and teens. The entire upstairs floor is essentially an open suite geared toward this, within earshot of the main floor. Views over the water are breathtaking, particularly at sunset. The yard is massive and offers plenty of space to roam and play. We're already discussing and looking forward to our return trip!

Stayed 2 nights in Apr 2023

10/10 Excellent

kathy t.
Dec 26, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

Great house for big families.

Home was just what we needed for an extended family holiday getaway. Spacious, clean and very comfortable. Hosts were extremely helpful with all of our needs.

Stayed 3 nights in Dec 2022

10/10 Excellent

MICHAEL H.
Dec 6, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

Comfortable home with beautiful view

The home was was well laid out for our group of seven. It could have easily accommodated several more people. The place had everything we needed to make meals. The huge yard gently sloped to a sandy beach. The view was as stunning and we really liked the privacy of the home. We hope to stay there again.

Stayed 2 nights in Nov 2022

10/10 Excellent

Lauren O.
Oct 28, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

The most hospitable and generous

The Jones family went above and beyond to make sure the stay was comfortable and enjoyable. We couldn't be more thankful.

Stayed 2 nights in Oct 2022

10/10 Excellent

Angela C.
Aug 3, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

Fantastic setting!

The property worked out great for our family. The beach is was great for little ones who visited and the front porch is great to relax on! It's on a quiet cove with beautiful views of sunrise and sunset. Would definitely stay again.

Stayed 3 nights in Jul 2022

10/10 Excellent

Dina C.
Jun 16, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

Great week at lake wateree

Great experience renting lake house. Thank you so much for sharing your home. We had a wonderful time

Stayed 7 nights in Jun 2022

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10/10 Excellent

Michael B.
May 19, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

Beautiful home

This stay was awesome! Home is very nice, and so much to do at the residence! We really enjoyed this home, and I highly recommend staying here....

Stayed 3 nights in May 2022

10/10 Excellent

Tyler J.
May 1, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

BEAUTIFUL HOME!!

My group and I had a wonderful time this weekend at this Lake House. The only thing that we didn't like was walking up the hill from the boat, it definitely gave our legs a work out! 10/10 recommend this!!

Stayed 2 nights in Apr 2022

10/10 Excellent

Craig G.
Jan 31, 2022

Liked: cleanliness, check-in, communication, location, listing accuracy

Everything you need for a great weekend

Excellent

Stayed 2 nights in Jan 2022

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10/10 Excellent

David W., Simpsonville, SC USA
Nov 7, 2021

Liked: cleanliness, check-in, communication, location

Stunning Property

Booked this property for our friends and family to gather together for the weekend while attending the Gamecocks & Gators football game. Not only was it a wonderful experience to watch our Gamecocks beat the Gators, but to be able to stay at this beautiful property with a short drive from Columbia made it even better. Such stunning views from every area of the property and tons of room to house 11 people. We are all already planning our next trip to book this property during the warmer months. The only thing we would recommend is that the online information be updated as some items noted are no longer valid and a bit confusing.. However, that didn't change our experience or our thoughts to give this property a lesser rating as ehe owners were excellent with responding to our questions and working with us for any additional accommodations. Will definitely be looking into booking this property again in 2022.

See less

Stayed 3 nights in Nov 2021

10/10 Excellent

Joel R.
Sep 20, 2021

Liked: cleanliness, check-in, communication, location, listing accuracy

Great location

Second time staying here perfect for family gatherings.

Stayed 4 nights in Sep 2021

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10/10 Excellent

Nicole P.
Aug 16, 2021

Liked: cleanliness, check-in, communication, location, listing accuracy

Fantastic Vacation

This is our second summer at this property and it is wonderful. Everything was easy and accurate. The view is amazing and the property is clean with lots of sleeping room! Great when you have kids! Thank you for a wonderful vacation before school started!

Stayed 7 nights in Aug 2021

10/10 Excellent

Glenn H., Florence, SC
Jul 16, 2021

Liked: cleanliness, check-in, communication, location, listing accuracy

This place was beautiful.

There were lots of extra toys that were not listed. Kayaks, paddle board, and a pool table which we enjoyed playing every night while listening to music. The driveway is a little steep especially when trying to get up while pulling my boat. I would recommend putting your boat in the water first before getting to the house. Overall this place is beautiful and relaxing.

Stayed 7 nights in Jul 2021

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10/10 Excellent

Sue M.
Jul 2, 2021

Liked: cleanliness, check-in, communication, location, listing accuracy

Great choice

As one previous reviewer said, the pictures don't do this property justice. Stunning lot. Not knowing what might be available, I took all the kitchen equipment I thought I would need, but the kitchen is well equipped. The owner is VERY responsive. The downstairs air went out one evening. I texted him late that evening and a repairman was at our door first thing the next morning and had it back up and running right away. We rented a pontoon from the nearby marina for a day and docked at Beaver Creek Grill for lunch. Might look rough but the service was great and everyone's food was delicious. The only problem I had on our trip was climbing the hill and the stairs, but that is because I'm almost seventy and have had two knee and hip replacements and almost all the lake homes are on hills and built high. No problem for rest of our party. Overall just great experience. Thank you for sharing your home.

See less

Stayed 7 nights in Jun 2021

10/10 Excellent

Sheri A.
May 2, 2021

Liked: cleanliness, check-in, communication, location, listing accuracy

Weekend getaway

Lovely lake home in great location with beautiful views of Lake Wateree. The owners were responsive to questions about the property and easy to work with.

Stayed 2 nights in Apr 2021

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Guest reviews

10/10 Excellent

Verified traveler
Mar 28, 2021

Liked: cleanliness, check-in, communication, location, listing accuracy

Perfect lakeside home

Marc and Kathryn were attentive and extremely accommodating with us. So much to do at the house and so much more to do on the lake. Definitely recommend highly!

Stayed 4 nights in Mar 2021

10/10 Excellent

Verified traveler
Nov 23, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Relaxing Rental Home

We had a wonderful time at your beautiful lakefront home. Thank you for the use of your kayaks and paddle boat! The family enjoyed many outside activities. It was so relaxing to rest there in between busy activities for the wedding! Thank you for the use of your home. The only issue we had was lack of towels. We left a few for future renters to use!

Stayed 3 nights in Nov 2020

10/10 Excellent

JP K.
Oct 22, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Never wanted to leave!

The house was incredible - big open spaces to hang out. View of the lake and yard make you feel like you're at a private resort. They aren't kidding about the sunset, it is magical. We brought a golf team for a college event here and everyone slept comfortably. Great weekend getaway for anyone! Porch is so peaceful to sip on a hot tea or have breakfast first thing in the morning. Hosts were spot on with everything explained. Hope we can come back some time!

Stayed 2 nights in Oct 2020

10/10 Excellent

Greg W., Inman
Oct 12, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Guys weekend

Awesome place to hangout with friends and family. Great fishing spot!

Stayed 2 nights in Sep 2020

10/10 Excellent

Joel R.
Oct 6, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

We vacation each fall with family 6 adults 3 children it was great as advertised we will rent agaian

It was great

Stayed 3 nights in Sep 2020

10/10 Excellent

Paige B.
Sep 15, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

A must on Wateree!

The house and location was great. We really enjoyed the beach area. The owners were extremely friendly and accommodating. We would absolutely book another stay!

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Guest reviews

10/10 Excellent

stacey s.
Aug 9, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Perfect

Absolutely perfect!!! Couldn't ask for a better place to have a vacation with the family. Thank you for opening up your home to us hope to stay again.

Stayed 3 nights in Jul 2020

10/10 Excellent

Lynn L.
Aug 9, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Ultimate Lakehouse

This lakehouse was in a perfect location. Dock for boat and great depth for swimming (for young and old) . It has its own private beach. The house was clean and well stocked although we brought most everything we needed. Short drive to local restaurants and small stores. You couldn't ask for a better place to vacation. Bring your own tiger paws. There are Gamecocks everywhere!😂

Stayed 4 nights in Jul 2020

10/10 Excellent

Angela H., Charlotte, NC
Aug 4, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Absolutely Amazing

This is our new favorite spot for cousins weekend. Enough space for everyone & in the perfect location. The marina is just around the corner which made it convenient for our two boats & fun spot to listen to music on our sunset cruise. No boat no problem, sit on the dock, the beach or the porch to watch the sunset & listen to music just across the canal. The owners were great to work with & always available. Thank you again! Can't wait to go back! Angie

Stayed 3 nights in Jul 2020

10/10 Excellent

Casey V.
Jul 5, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Summer lake vacation

We really enjoyed our stay! The house was great, had lots of room and everything we needed and more. The only issue we had was that the driveway was steep and difficult to get a boat and trailer in and out, other than that it was perfect! Thanks for a great vacation!

Stayed 5 nights in Jun 2020

8/10 Good

john d.
Jul 5, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Vacation review

We enjoyed everything about the property: access to lake, nice play area for kids, large area for adults to enjoy the sunbathing. Hope to be able to return next year.

Stayed 7 nights in Jun 2020

10/10 Excellent

annette g.
Jul 1, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

Family getaway

This is our second stay and we love to come back this summer if they're not booked. Perfect for kids, lots of space indoor and outdoor ! Lovely sunsets. They owners are very nice and accommodating.

Stayed 3 nights in Jun 2020

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Guest reviews

10/10 Excellent

annette g.
May 3, 2020

Liked: cleanliness, check-in, communication, location, listing accuracy

View

AmaZIng sunset !

Stayed 3 nights in Apr 2020

10/10 Excellent

Verified traveler
Oct 24, 2019

Liked: cleanliness, check-in, communication, location, listing accuracy

Very nice beautiful view

My family had a very good time enjoy the place very much it was clean we have a beautiful view

10/10 Excellent

Tara P.
Oct 3, 2019

Liked: cleanliness, check-in, communication, location, listing accuracy

The BEST Time!

This place is PERFECT for a large family, several families, or even a weekend girls' trip (like what we did). The location can't be beat. Early morning coffee on the dock, watching the sunset while sipping a beverage on the beach, just a wonderful place.

Stayed 2 nights in Sep 2019

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10/10 Excellent

Tom W.
Oct 3, 2019

Liked: cleanliness, check-in, communication, location, listing accuracy

Comfortable and beautiful setting

The setting is lovely with wonderful views and easy access to the lake. House is comfortable with all the amenities.

10/10 Excellent

Jeff N.
Jul 11, 2019

Liked: cleanliness, check-in, communication, location, listing accuracy

Family Lake Time

This house was perfect for our family lake getaway. The house is beautiful, the views are amazing, there is plenty of dock space for all your toys, and the owners are awesome and accommodating. Would definitely recommend.

Stayed 2 nights in Jun 2019

10/10 Excellent

Daniel B.
Jun 26, 2019

Liked: cleanliness, check-in, communication, location, listing accuracy

Great vacation!

Everything was as advertised. Upstairs is great for kids. Good beach.

Stayed 5 nights in Jun 2019

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10/10 Excellent

Ginger C.
May 7, 2019

Great weekend getaway!

All the comforts of home away from the hustle and bustle of life's demands allowed our family time to regroup and reenergize over the Easter weekend! Hope to return again soon!

Stayed 4 nights in Apr 2019

10/10 Excellent

Amber S.
Apr 28, 2019

Perfect location

Our family had the best time here, the location was perfect. Not too close to town but not too far either. The lake was beautiful and the beach was so perfect to hang out on. Best vacation in years.

Stayed 3 nights in Apr 2019

10/10 Excellent

Phil H.
Apr 18, 2019

Roost

House was great. Very clean. No issues

Stayed 2 nights in Mar 2019

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10/10 Excellent

Kelley D., Rock Hill, SC
Sep 3, 2018

Great Long Weekend!!

We had a great stay in the Roost! Home was well stocked with kitchen items and has everything you need. The beach and dock are awesome! We swam and played all weekend in the water. I would definitely rent this house again. Homeowners are very nice and very responsive. We didn't need anything during our stay but if we had I know they would have helped in any way!

Stayed 3 nights in Aug 2018

8/10 Good

Susan R.
Aug 28, 2018

Great family rental. The kids loved having the upstairs to themselves.

Great house and setting. Our family had a grand time. Would rent again. Just wish it was pet friendly.

Stayed 4 nights in Aug 2018

10/10 Excellent

Bobby P.
May 7, 2018

Home at the lake!

We all did not want to leave! Both kids and adults agreed it was one of the best family trips! You got a little piece of the beach with the sand down at the water. The kids had a blast in the sand and the guys fished day and night off the dock! It was absolutely amazing! The house was beautiful like the pictures and had plenty enough room.

Stayed 2 nights in Apr 2018

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Guest reviews

10/10 Excellent

Michael S.
May 5, 2018

Wonderful House!

We stayed here with a large group of people to attend a conference nearby and loved every minute we got to spend at the house! I would definitely recommend this house to anyone looking to stay in the area!

Stayed 2 nights in Apr 2018

10/10 Excellent

sherman b.
Mar 25, 2018

Perfect

Nice folks, nice house

Stayed 28 nights in Feb 2018

This review comes from a trusted partner site and has not been verified.

10/10 Excellent

Kelly C.
Mar 22, 2018

Serenity

Most peaceful vacation we've had in years, pictures don't do this place justice

Stayed 3 nights in Mar 2018

10/10 Excellent

Craig S.
Feb 5, 2018

Great!

We had a great time at the Roost this weekend. Would love to come back this fall for another stay. Pictures do not do this property justice!

Stayed 2 nights in Jan 2018

8/10 Good

William W.
Jan 15, 2018

The property was truly gorgeous. We had our extended family over.

Lots of room for guests/ extended family. Good living space layout. Would recommend and rent again ourselves.

Stayed 6 nights in Dec 2017

This review was submitted before 2018 and has not been verified.

10/10 Excellent

Marcel M.
Oct 3, 2017

Lovely Lake house!!!!

Excellent conditions! The house is really awesome and looking better than in the pictures. We were 6 adults and 5 kids and it was plenty of space. All of us were accommodated properly, we have fun swimming, fishing, grilling etc. Two thumbs up for Mr. and Mrs. Jones (the owners) hospitality! We love it and we definitively plan to come again!

Stayed 2 nights in Sep 2017

This review was submitted before 2018 and has not been verified.

10/10 Excellent

Ann T.
Sep 5, 2017

The lake house was lovely. Even better that pictures show.

Peaceful and relaxing! We'd stay here again! Very reasonably priced for the number and quality of accommodations.

Stayed 2 nights in Aug 2017

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Guest reviews

This review was submitted before 2018 and has not been verified.

10/10 Excellent

Andrew M.
Sep 5, 2017

Great experience! Better than expected! Amazing sunsets.

Highly recommend this property. Everything right there. Remote but not too far from civilization. Clearly a lake house. Lots of lake-related items and equipment. But, not clear what we were allowed to use (boat, jet ski, float, kayak, canoe, cart,etc.) Also, ants got into several cars. Would be good to warn people to spray around tires to keep ants out of vehicles. Otherwise, had a great time! Thanks again!

Stayed 4 nights in Aug 2017

This review was submitted before 2018 and has not been verified.

10/10 Excellent

Clay C.
Aug 19, 2017

House was wonderful! The pictures didn't do it justice! Amazing location with a great view!

We loved staying at The Roost. The house is beautiful and the property was well kept. The generous sized beach area was wonderful and gave us all a place to play and relax. There is plenty of room for large families like mine. Would definitely consider staying here again!!

Guest reviews

Sep 5, 2017

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This review was submitted before 2018 and has not been verified.

10/10 Excellent

Karen L.
Aug 14, 2017

Beautiful spacious lakefront home with immaculate deep water views

This spacious lake front home exceeded expectations for our short Lake Wateree family vacation. The home provided all the amenities needed for a relaxing stay. My 7 year old son caught a catfish, blue gill, and yellow pirch from the two docks on the property. We also enjoyed using the pool table and the cornhole boards during our stay. The family pictures throughout the home added a very special touch... the home creates beautiful family memories for everyone that has the opportunity to spend time here. Kathryn was extremely informative and very responsive! Sadly, the home is up for sale and it doesn't appear that we'll have the opportunity to stay in this lovely home again. I'd love to make future memories for my boys here!

See less

Stayed 3 nights in Aug 2017



Exterior

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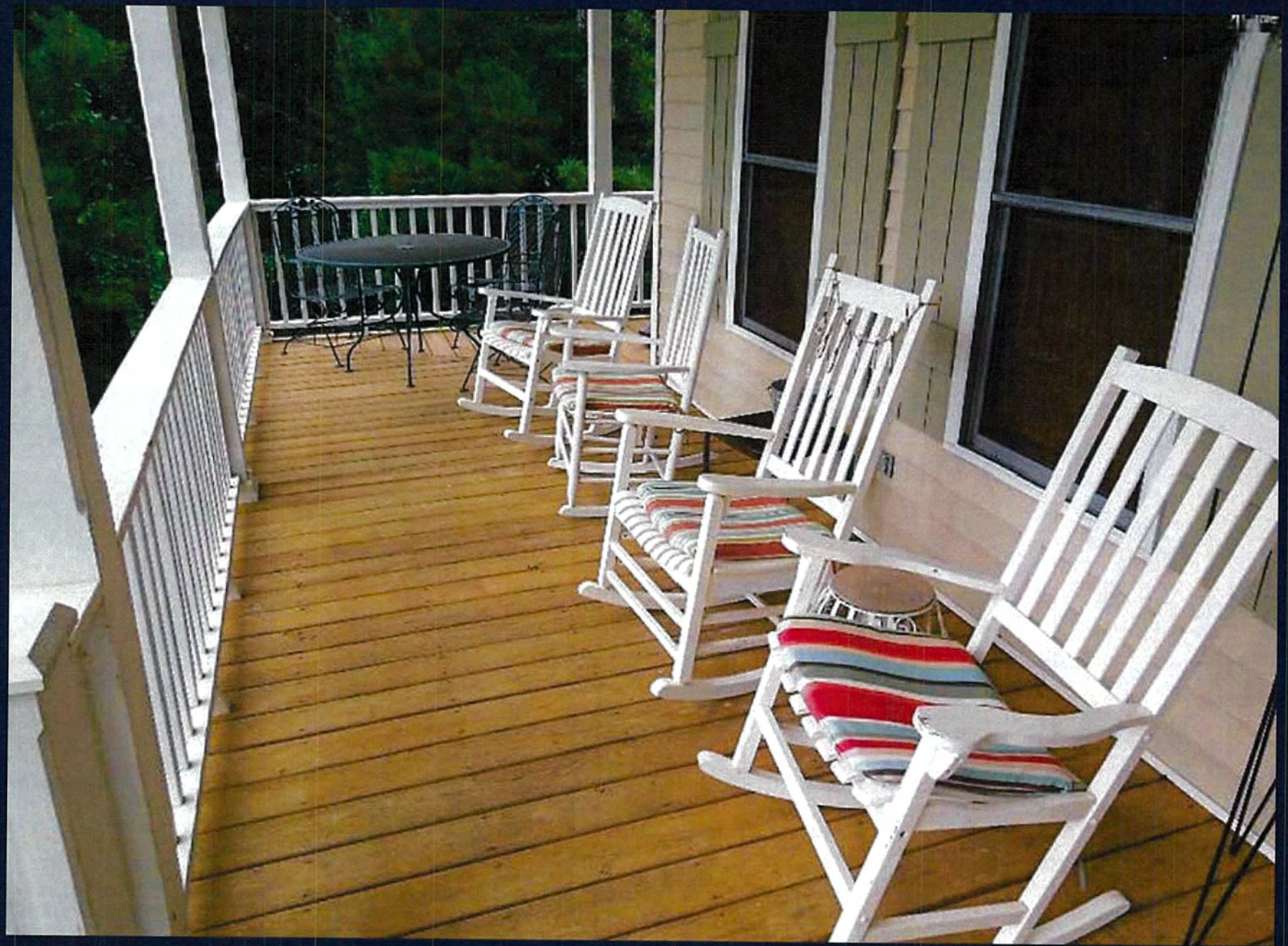
Exterior

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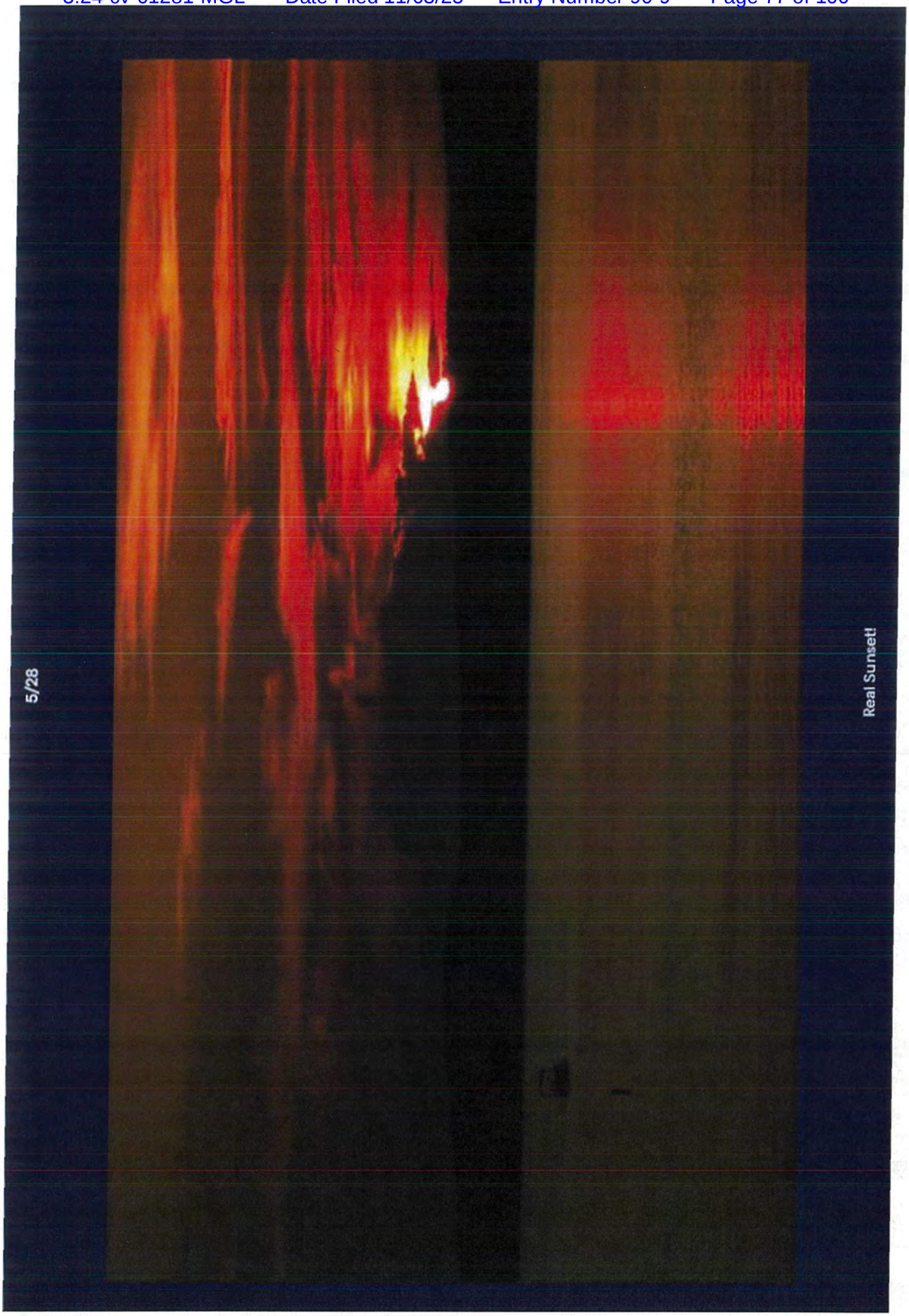
Property grounds

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Property grounds

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5/28
Real Sunset!



REAL photo taken from porch.

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Upstairs Bathroom

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8/28

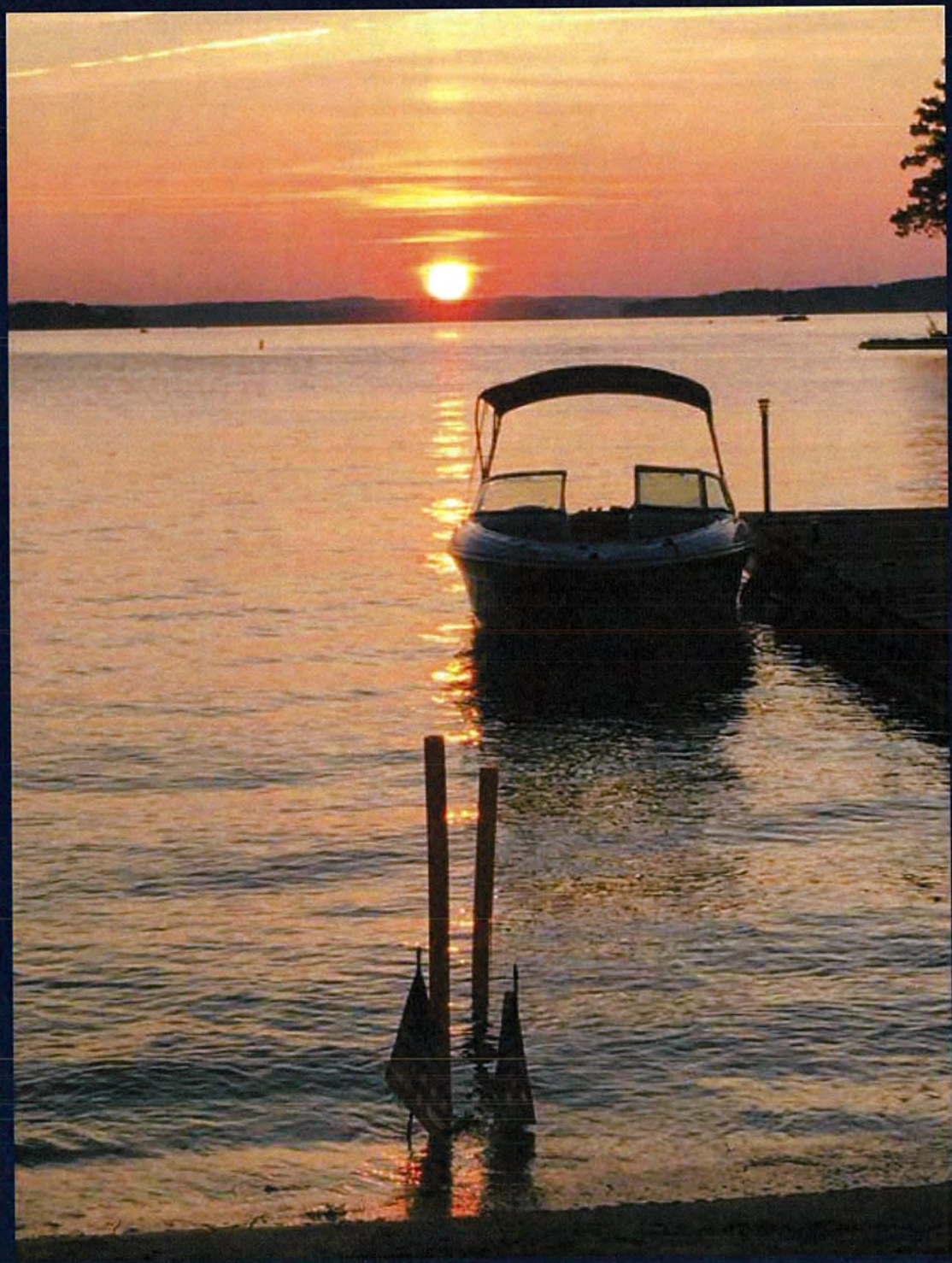


Exterior



Property grounds

10/28



Miscellaneous



Miscellaneous

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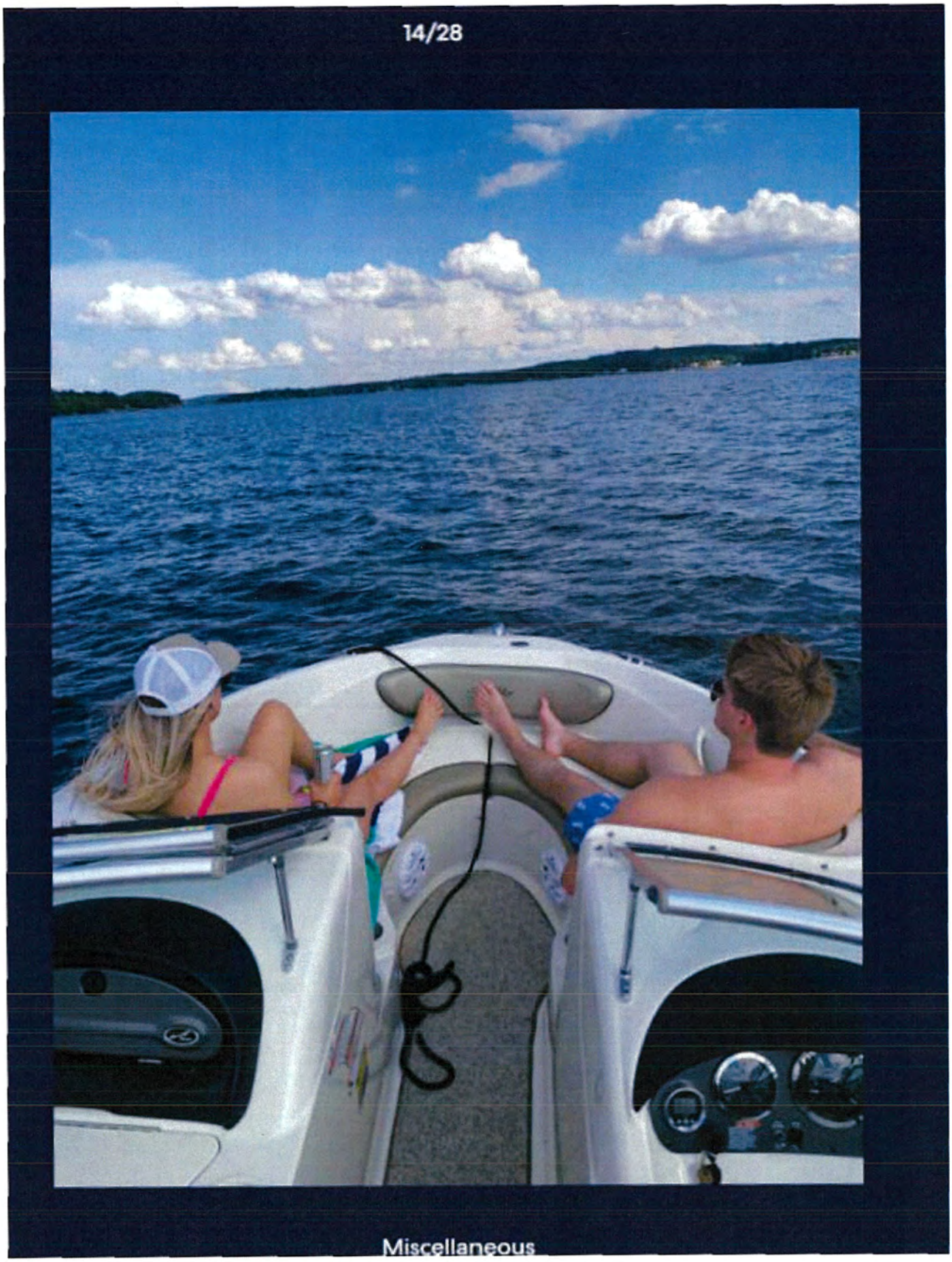


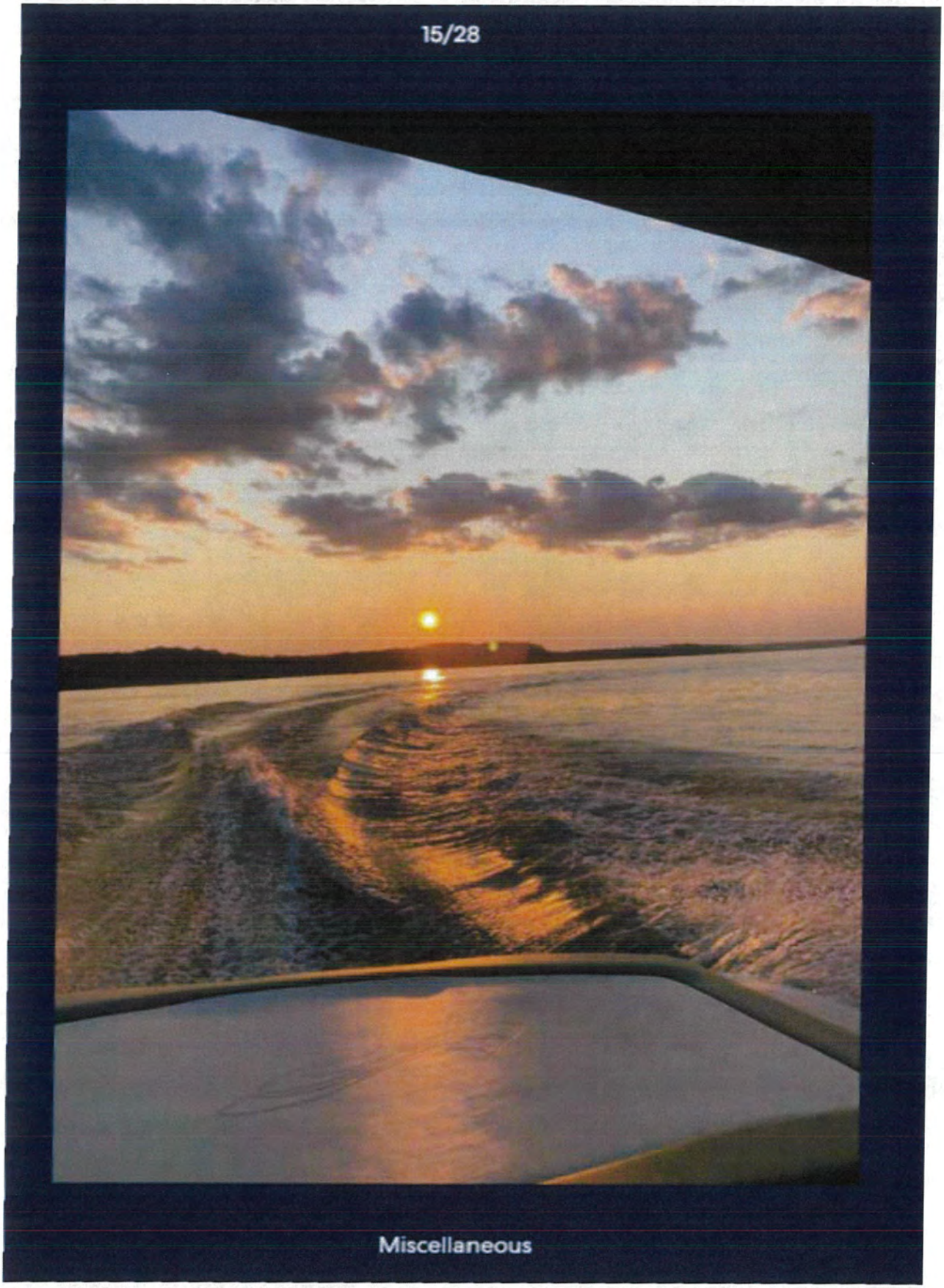
Property grounds

13/28



Property grounds


14/28
Miscellaneous


15/28
Miscellaneous

16/28

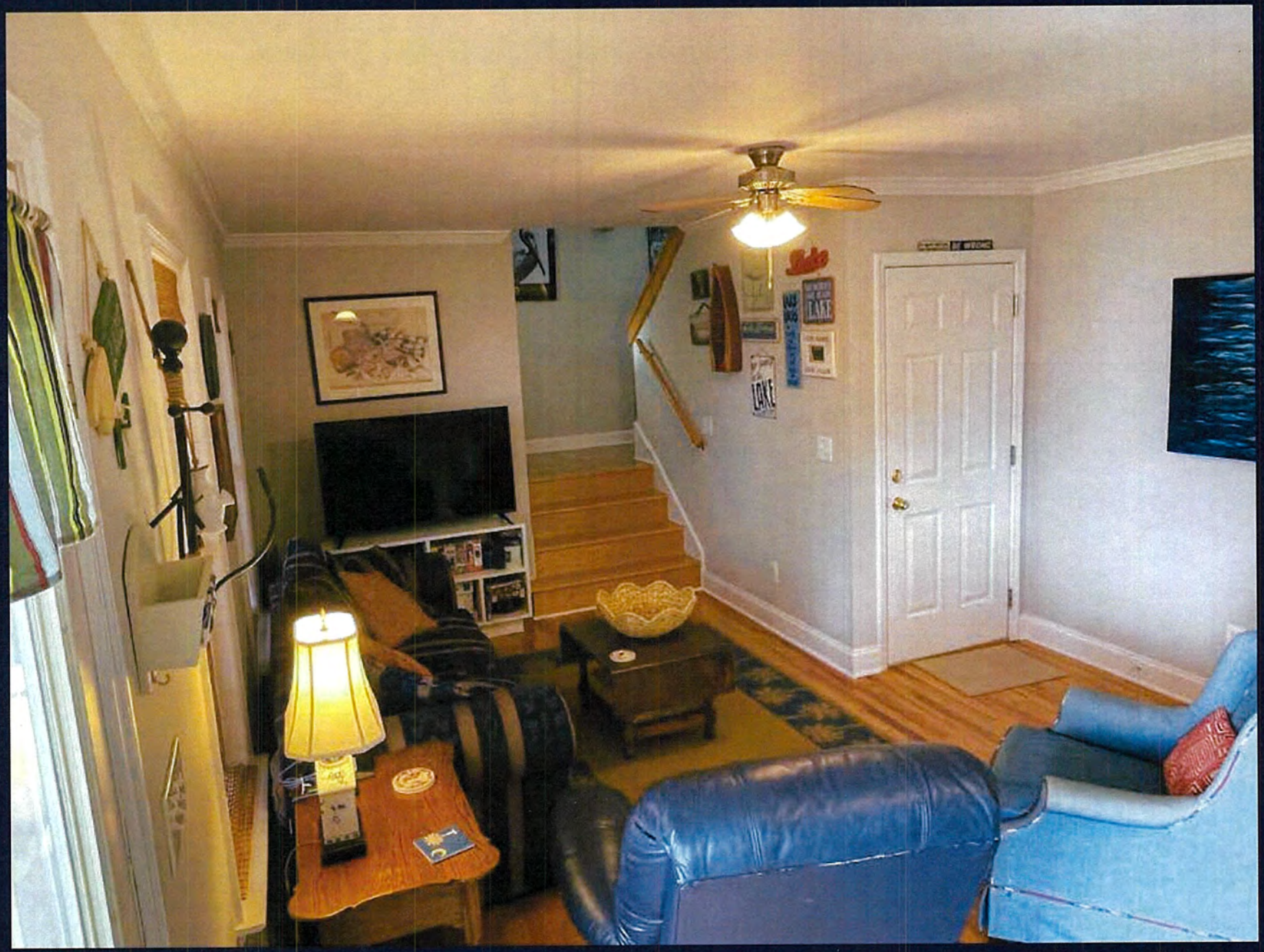


Exterior

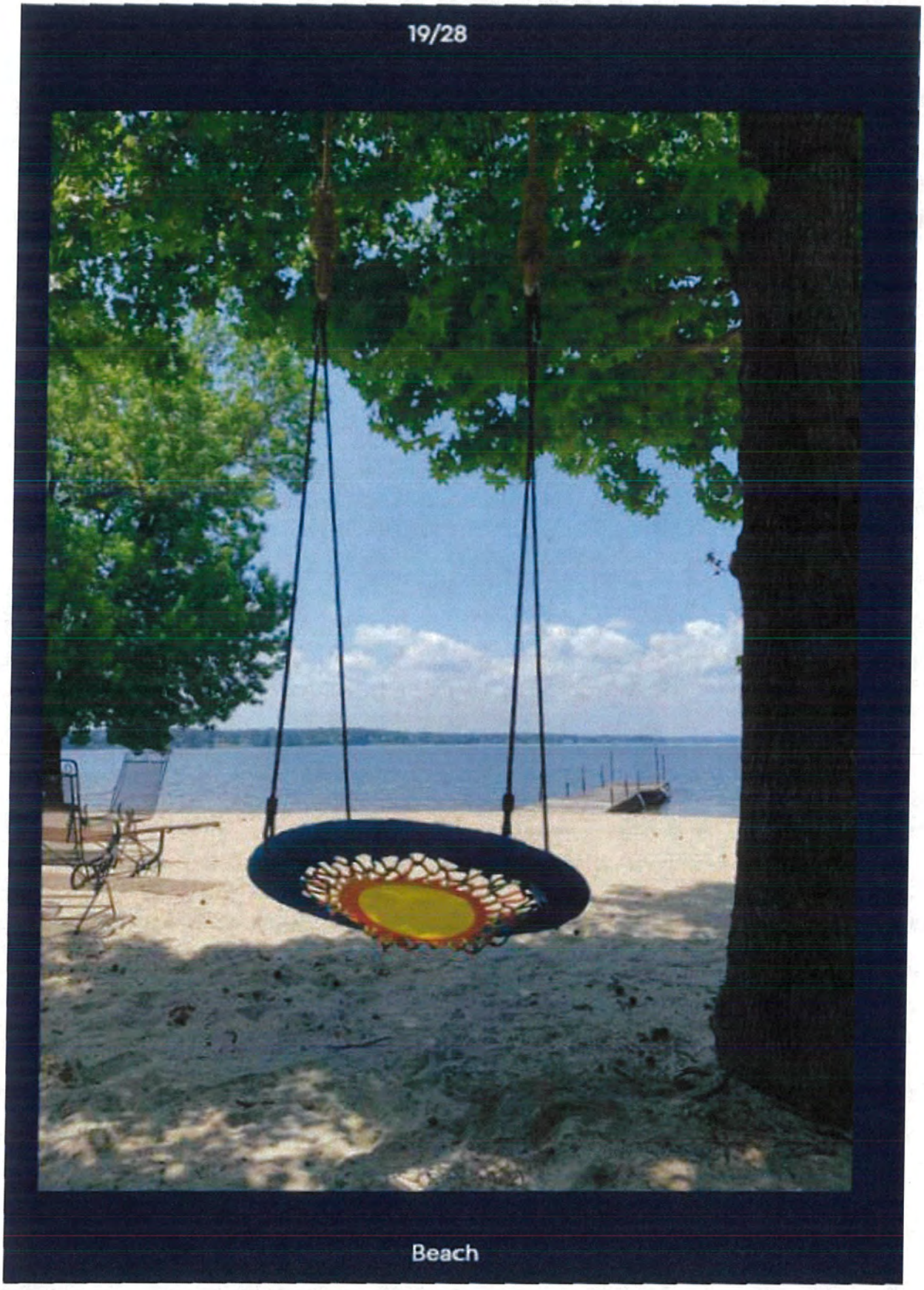


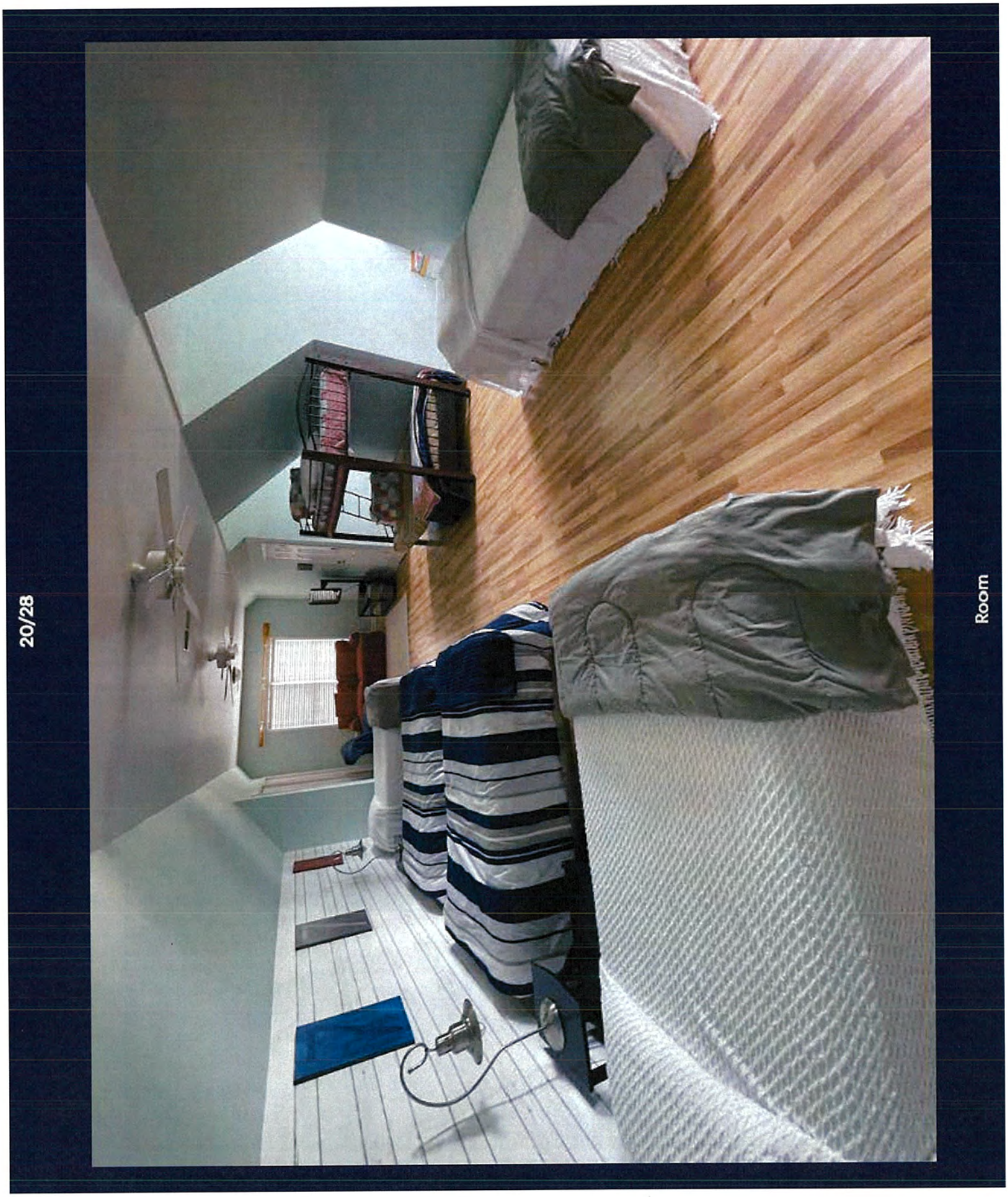
Room

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Living area


19/28
Beach


20/28
Room



Bathroom

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Living area



Private kitchen

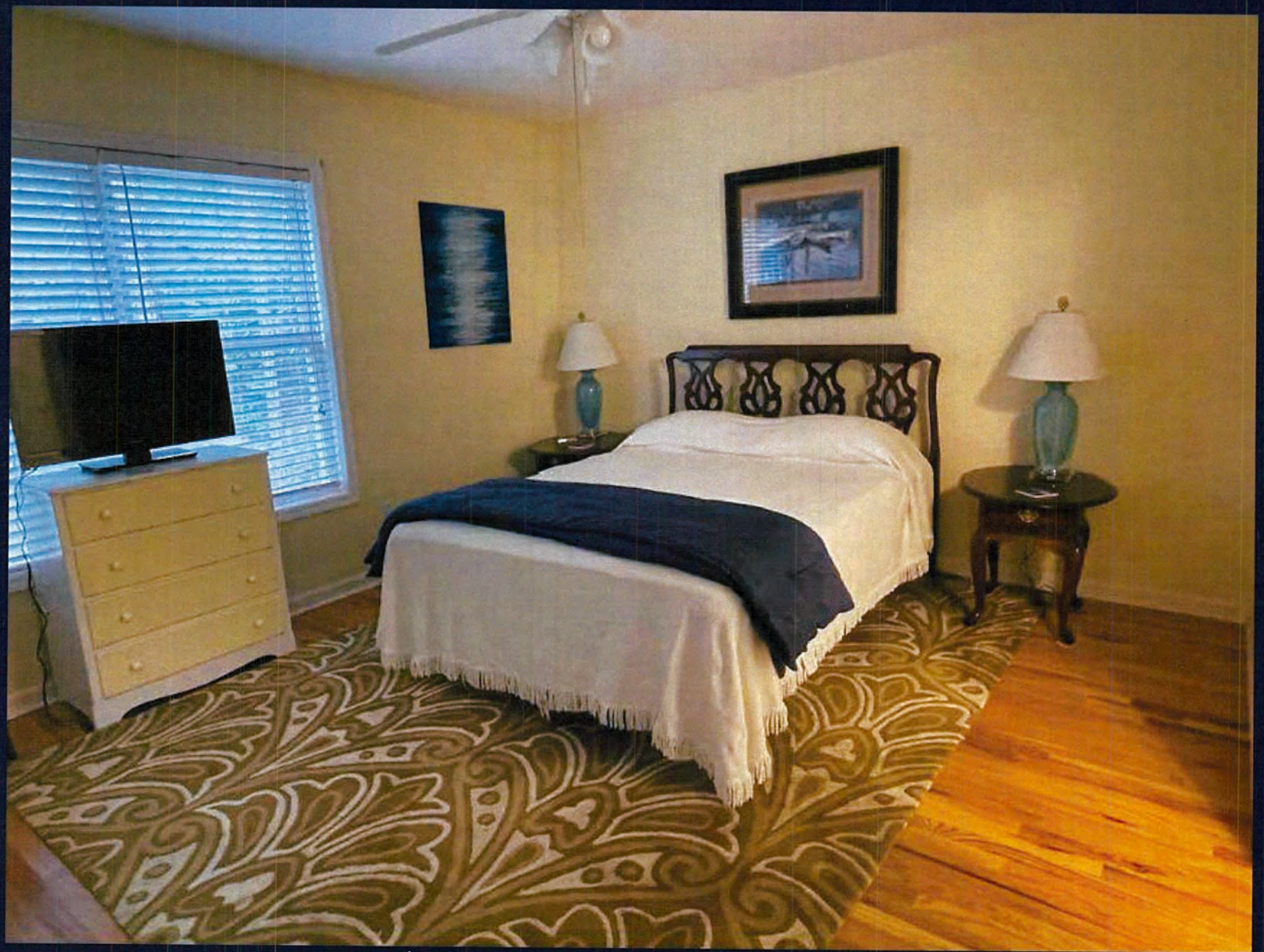
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24/28
Room



Room

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Room

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27/28
Bathroom

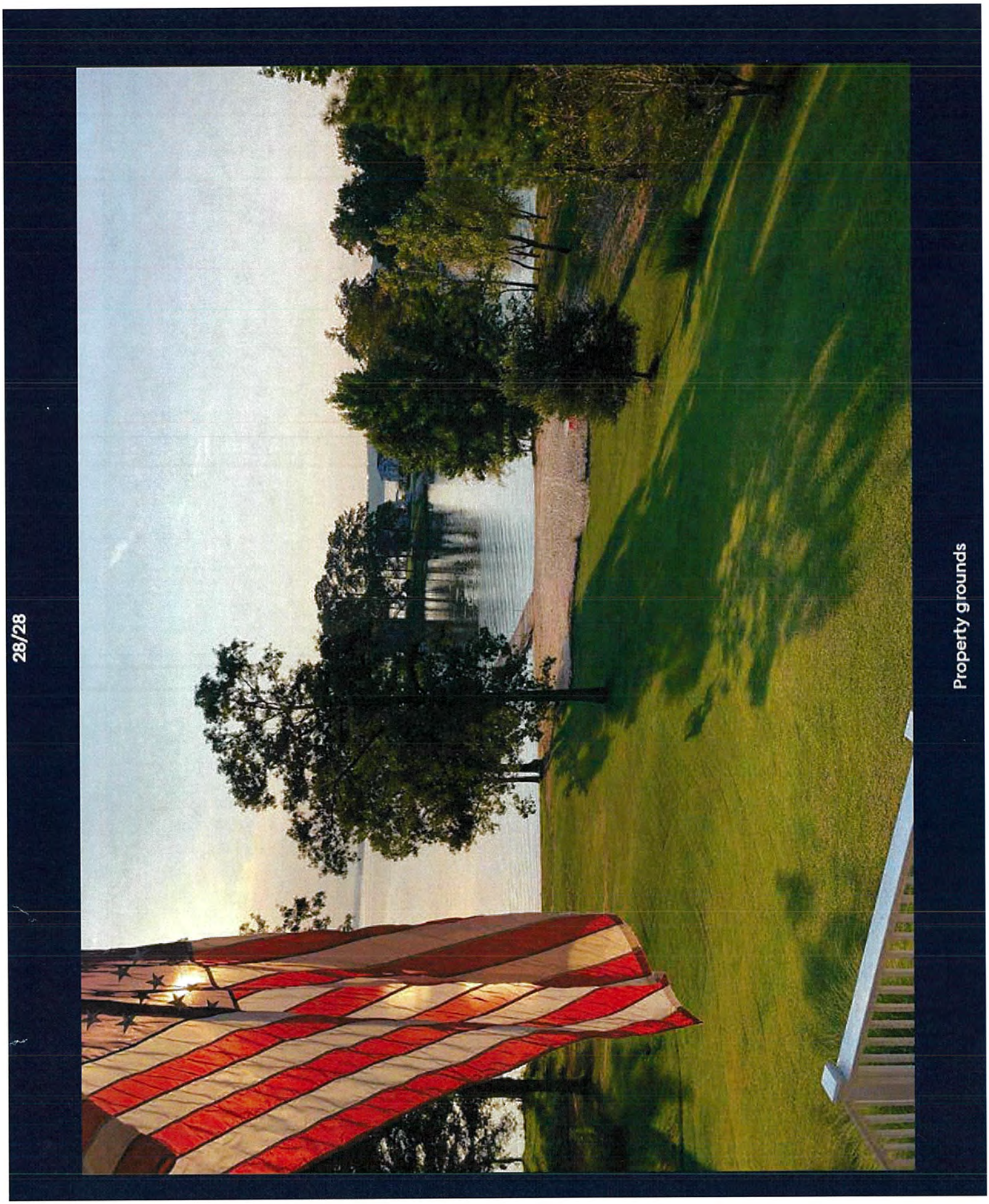

28/28
Property grounds

Exhibit 10

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION
CASE NO. 3:24-cv-01281-MGL

CLYDE MARCUS JONES, II, DENNIS PHILLIPS, AND DEBORAH PHILLIPS, ON BEHALF OF THEMSELVES AND ALL OTHERS SIMILARLY SITUATED,

Plaintiffs,

vs.

DUKE ENERGY CORPORATION AND DUKE ENERGY CAROLINAS, LLC,

Defendants.

DEPOSITION OF: HENRY BECKHAM
DATE: October 14, 2025
TIME: 9:14 a.m.
LOCATION: Sheraton Myrtle Beach
2101 North Oak Street
Myrtle Beach, South Carolina
TAKEN BY: Counsel for the Defendants
REPORTED BY: KAREN M. BECKMAN, CSR

Job No. CS7650964

APPEARANCES OF COUNSEL:

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ALSO PRESENT:
GREGORY DUPUIS
Videographer

LAURA LLAMAS
(Appearing via VTC)

there was a time when residents would complain about the mosquito issues. Do you see that?

A. Yes.

Q. And then it says, In the gasoline run pump days, the pumps ran continuously because they were notoriously hard to start, so water was sprayed continuously. When a crew arrived at a breeding habitat, they would turn a valve and allow fuel oil to be pulled into the water stream to be directed on the mosquito breeding area. This explanation still doesn't satisfy the older folks who want to see that spray, the 'placebo effect.'

Did I read that accurately?

A. Yes.

Q. And I believe you were -- if you want to keep your affidavit here beside you -- I believe you worked in the Mosquito Control Program between 1968 and 1973. Does that sound right?

A. Yes.

Q. And the subtitle of this article says Post World War II through the late 1980s. Do you see that?

A. Yes.

Q. And so you would have been a participant in the Mosquito Control Program during

the time identified -- for a part of the time identified in this subheading; is that right?

A. Yes.

Q. When you were participating in the Mosquito Control Program, did you use a barge or a boat?

A. Used a boat.

Q. Are you aware of a barge ever being used?

A. Yes.

Q. And when did that happen?

A. When I was a child, they used a barge. So it would have been in the '50s. And it was an old heavily wooded barge that had a transom with it that would mount an outboard motor. It was just an open flat bottom barge. That's what they used when I was a child.

Q. Yes, sir.

And so you saw that in operation, the barge?

A. Well, I saw the barge there at the landing, which was next door to my grandfather's cabin.

Q. And at some point did they convert to boats?

A. When I started, they had already gone to boats.

Q. It was one boat; is that right?

A. Yes.

Q. And it was always just one boat during the entire time that you worked for the Mosquito Control Program; is that right?

A. That's right.

Q. And do you know why they converted from the barge to a boat?

A. I think the boat was much more efficient. The barge itself was treated -- I think it was just so heavy that it was just not maneuverable. They probably had trouble back then. Outboard motors are not what they are now. I think they probably just figured they could get by with a boat and make it work.

Q. And how were 55-gallon barrels stored on the boat? The boat now.

A. The boat, it was a 16- or 17-foot aluminum boat. And the barrels, there were two barrels. They were laid on their sides, one in front of the driver, and then one -- there was a little seat -- and there might be another one separate between the bow of the boat. Then you had

the pump mounted. And then whoever was running the spray of the pump would sit on the bow of the boat, the other person obviously would drive. But the barrels laid at the bottom of the boat.

Q. Okay. Were they ever tied to the side of the boat?

A. No. Not that I did.

Q. And when you would go out, you would have two full barrels?

A. Yes.

Q. And was a gasoline power pump used to run the sprayer?

A. Yes.

Q. Were those hard to start?

A. Not particularly.

Q. Were you particularly strong so they weren't hard to start?

A. No. I don't remember them -- like it's not -- like it's not --

Q. You don't remember any difficulty?

A. I don't remember it being a problem. We ran it -- what he was saying, we ran it all the time.

Q. Uh-huh. And the pumps pulled the water; is that right or wrong?

Q. And, Henry, I believe she has that over there for you.

And I think I can help here and kind of walk you through this, if you like.

So this is marked as Exhibit 4. And at the top, Henry, it says, Duke Power Company Mosquito Control. Is that what it says?

A. Yes.

Q. And for the lake, it says Wateree Lake. Do you see that?

A. Yes.

Q. And that would be referring to Lake Wateree; is that right?

A. Yes.

Q. And under where it says Mosquito Control, this is like a chart. And it has location, date, month, year, and other information that is provided in this chart form that has been completed; is that right?

A. Yes.

Q. And down in the lower right-hand corner it says, Buster Beckham. Is that your much older brother?

A. My much older brother.

Q. All right. And so if we look at this,

on this first page, it has the date, month, and year, and it says July 29 through August 2nd, 1968. Is that what it says?

A. Yes.

Q. Okay. And does this look like the log that y'all created when you were working in the program?

A. I don't think -- I don't think I did this log. I think again I may have done it a couple times. If Coach Hutchinson had gone back to practice and stopped work, I may have done it. But I'm really -- I'm familiar with it. I don't know that I prepared it. I may have.

Q. Okay. But that does have your brother's signature down there in the lower right-hand corner?

A. Yes.

Q. And this talks about the number of barrels put out. Do you see that?

A. Yes.

Q. Then there's a column for empty barrels in stock. Do you see that?

A. Yes.

Q. And you see gas used? Do you see that?

A. Yes.

Do you see in the column where it says Fuel Oil #2 used and then Fuel is stricken and they handwrote above that Little Motor? Do you see that?

A. Yes.

Q. Do you recall motor oil being used?

A. Again, there was never any distinction. I didn't know what was in the barrel. When it had oil, it was oil. And then the only oil I would have used outside of what we were spraying would have been that outboard oil for the gas mix. I have no idea what that little motor refers to.

Q. Okay. All right.

For just a minute, let's go back to the first page of this exhibit. Charles Wilson, is he still around?

A. Charlie was a friend of -- he and Buster grew up together. He was from Camden. They were at Clemson together. And I assume Charlie was filling in at some point for somebody.

Q. Okay. And then if you look on the next page, it refers to Mr. Hutchinson, who I think you said was the assistant football coach --

A. Yeah.

Q. -- is that right?

And then on this page, under Number of

Men Working, it says Clyde Jones. Was that a head football coach?

A. He was another assistant football coach.

Q. And Clyde Jones, his son is Marcus Jones; is that right? He has a son?

A. I think so.

Q. And so at the time of this form, do you believe that Coach Jones was an assistant coach at that time, assistant football coach?

A. In 1968?

Q. Uh-huh.

A. Yes.

Q. Did he ever become a head coach?

A. No.

Q. All right. Bear with me just a minute.

I tell you what let's do. We're at a breaking point. Let's take a five-minute break if you want to take a restroom break, get some water.

THE VIDEOGRAPHER: This ends Media 2. The time, 10:26. We are off the record.

(A recess transpired.)

THE VIDEOGRAPHER: This begins Media 3. The time is 10:38. We are on the record.

BY MR. DUNLAP:

you personally don't have expertise to know what it was and any information in that regards is what others have told you?

A. Yes.

Q. So in terms of where you chose to spray, did you spray in areas of stagnant water?

A. Stagnant water being back in a cove away from the open water, anything large. But, yes, stagnant water in the rear of these different coves, inlets along the lake.

Q. So you would not have sprayed out in the open water?

A. No.

Q. And you did not spray every square inch of the waterfront, shoreline?

A. We would not spray shoreline. That was adjacent to the open water. We would go to the next cove or look at a map or a Google Map of the lake. You'll see that it's just fingers where it would go off of the open waters I'd call it. And that's where we would go to the back of those and that's where we'd spray.

Q. And at the times in the coves, would there be areas where people were not living that you would not spray?

A. I don't understand what you're asking.
Q. Sure. So in a cove, there may be times that a cove has undeveloped parts of it; is that fair?
A. Yes.
Q. And when you saw a cove that was undeveloped, is that a cove that you would not spray?
A. No. We would spray that.
Q. Was the focus on where people were living?
A. The focus was on the back of the cove where you had the still water.
Q. The very back or close?
A. Close to the back. And usually when you got to the back of that, there was a ditch or a creek draining into the lake, it would be a hardwood bottom. And those areas would not be developed because there might not be a road accessible for everyone else. Homes were being built and whatnot out on the open water. And then the open areas of the coves themselves in the very back, just because of the totem of what it was, you didn't see -- you wouldn't go back to the back of a cove typically and see a house.

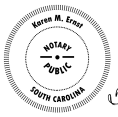
Q. So again you're looking really for stagnant water?
A. Yes.
Q. When did you first learn that there were PCPs in the lake?
A. I think in the '70s something came out. Maybe it was the Charlotte Observer was running some stories about it and there was some mention of PCPs in this spray that we had been using.
Q. And that was in the paper?
A. I think it was.
Q. Sun News?
A. No. It would have been -- I was at Camden at the time. I think I had read it in the Charlotte Observer in the Charlotte papers.
Q. And do you have any knowledge about fish consumption advisories of the lake related to PCPs?
A. I think there was a recommendation that you only eat so much. But I don't know the particulars of it.
Q. Do you remember that being a long time ago when the advisories came out?
A. I just --
Q. You don't recall?

CERTIFICATE OF REPORTER

I, Karen M. Beckman, Court Reporter and Notary Public for the State of South Carolina at Large, do hereby certify that the foregoing transcript is a true, accurate, and complete record.

I further certify that I am neither related to nor counsel for any party to the cause pending or interested in the events thereof.

Witness my hand, I have hereunto affixed my official seal this 14th day of October, 2025, at Myrtle Beach, Horry County, South Carolina.



Karen Ernst

Karen Beckman
Court Reporter
My Commission expires
September 3, 2035

Exhibit 11

Expert Report

The Chemistry of PCBs in Relation to Jones *et al. v.* Duke Energy Corporation, *et al*.

Prepared by

Eric L. Butler, Ph.D.

Prepared for
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November 3, 2025

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Appendix A *Curriculum Vitae* and Testimony Experience of Eric L. Butler, Ph.D.

Abbreviations

ANSI	American National Standards Institute
DEC	Duke Energy Carolinas, LLC
MCP	Mosquito Control Program
OTIE	Oneida Total Integrated Enterprises
PAH	Polyaromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCT	Polychlorinated Triphenyl
PRP	Potentially Responsible Party
RSL	Regional Screening Level
RTI	Research Triangle Institute
SCDHEC	South Carolina Department of Health and Environmental Control
SCDNR	South Carolina Department of Natural Resources
TSCA	Toxic Substances Control Act
US EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1 Introduction and Scope

I have been retained by Hunton Andrews Kurth on behalf of Duke Energy Carolinas, LLC ("DEC"), in connection with a putative class action regarding the presence of polychlorinated biphenyls (PCBs) in Lake Wateree in South Carolina. I was asked to provide an expert opinion with respect to environmental matters in regard to this litigation (Case No. 3:24-cv-1281-MGL). This report is focused on chemistry matters as they relate to the class certification aspect of this case.

Qualifications and Bases for Opinions

I am an environmental chemist and a Principal at Gradient. I have over 30 years of experience in working on environmental chemistry matters, many of which involved the analysis of PCBs in the environment and their fate and transport in the environment. In recent years, I have co-led a Gradient team of scientists supporting a neutral cost allocator for a large group of Potentially Responsible Parties (PRPs) at a contaminated estuarine site on the east coast. That project is ongoing, and PCBs are an important part of that site and the cost allocation thereto. Also in recent years, I co-led a Gradient team of scientists supporting a PRP at a large riverine site in Oregon. Again, that project is ongoing, and PCBs are a major contaminant of concern. I have evaluated the nature of PCB contamination at numerous railroad sites, manufacturing facilities, and sediment sites in the US prior to my work on this project. My resume, including recent publications within the last 10 years and testimony experience in the past four years, is attached (Appendix A).

In preparing this Report, I considered site-related documents including scientific literature and federal reports – all of which are listed in the References Section. From these materials, I compiled relevant PCB data associated with Lake Wateree. I base my opinions on the items listed above, and on my education, training, and experience in organic and inorganic environmental chemistry. The information I have relied on and the methods and procedures I used are of the type generally recognized by experts in my field. I reserve the right to amend my opinions should additional relevant data or information come to light. Gradient is compensated at a rate of $475/hour for my work in this matter.

2 Background on PCBs

PCBs are a class of man-made chlorinated organic chemicals known for their low flammability, low reactivity, and low water solubility. The term "phenyl" denotes a ring structure of six carbon atoms attached to something else; "biphenyl" results when two such rings are attached to each other. PCBs are biphenyl molecules that have 1-10 chlorine atoms attached to the carbon atoms at the corners of the biphenyl rings. An example of a PCB molecule is shown in Figure 2.1.

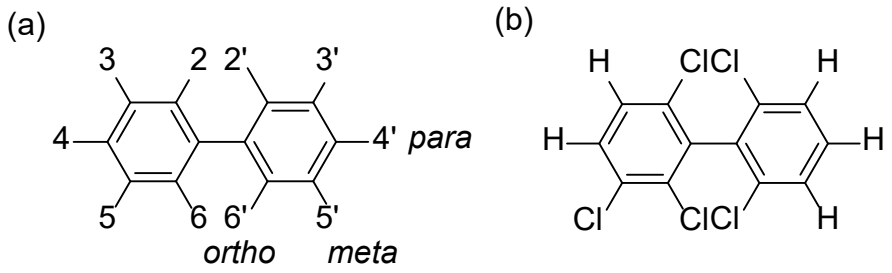


Figure 2.1 Polychlorinated Biphenyl Molecule. Panel (a) shows 10 possible locations where a chlorine atom may be attached to the biphenyl backbone. Panel (b) illustrates an example congener in which chlorine atoms are bound to the 2, 5, and 6 locations on one phenyl ring, and at the 2' and 6' locations on the other phenyl ring.

There are 209 discrete PCB compounds, called *congeners*, in which 1 to 10 chlorine atoms are attached to the biphenyl rings (see Figure 2.1 for an example congener). The difference between congeners is the number and location of chlorine atoms attached to the biphenyl ring. The 209 congeners have different naming conventions, including:

- BZ:[1] Nomenclature system: congeners are numbered sequentially from 1 to 209 with increasing congener number reflecting an increased chlorination.
- Homologs: A homolog includes all congeners with equal number of chlorines attached to the biphenyl ring. For example, the homolog hexa-chlorobiphenyl includes all congeners with 6 chlorines attached to the biphenyl (there are 42 congeners in the homolog group "hexachlorobiphenyl").

From 1929 to 1976, PCBs were produced and commercially marketed in the United States under the "Aroclor" trademark by Monsanto Chemical Corporation.[2] Aroclor products were identified with a unique four-digit reference number, (*e.g.*, Aroclor 1260[3]), which was usually based on the molecular size and the

[1] BZ: Ballschmiter and Zell (1980).

[2] PCBs were first produced by Swann Chemical Corporation in 1929; the company was subsequently purchased by Monsanto. The word "Aroclor" is used in this report to refer to PCB-based products marketed under the Aroclor trademark, but a limited number of non-PCB-based products were also marketed by Monsanto under the Aroclor trademark.

[3] The Aroclor 4-digit reference number convention is a function of the molecule size and the weight percent of chlorine in the formulation. For example, Aroclor 1242 is so named because the PCB molecule has a biphenyl base (which for convenience was shorthanded to 12 by Monsanto) and is composed of a mixture of congeners such that the material weight is approximately 42%

weight percent of chlorine. Aroclors are not a single PCB congener, but rather a complex mixture of multiple congeners. Figure 2.2 illustrates the congener-specific composition of some of the marketed Aroclors, presented as Aroclor "fingerprints."

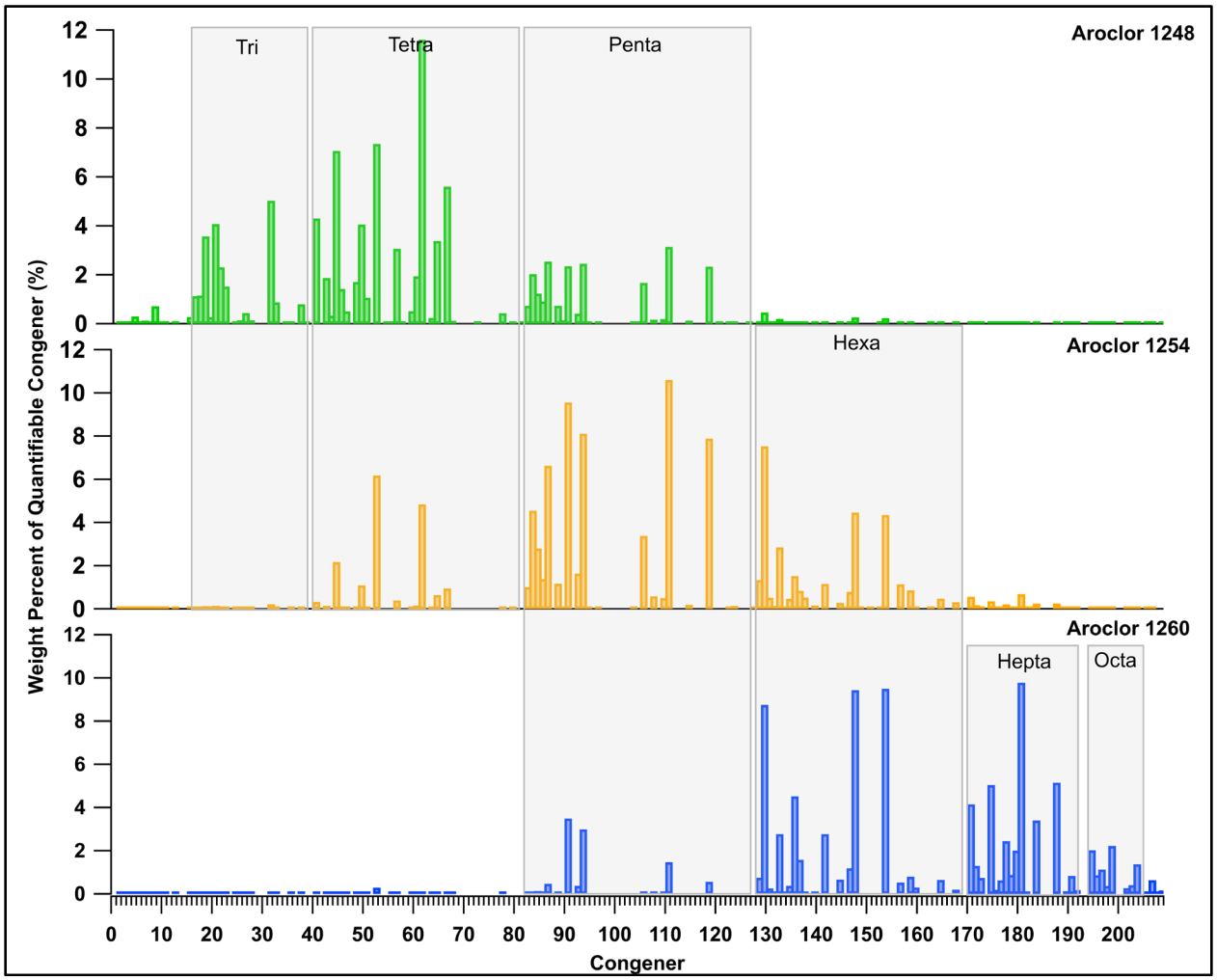


Figure 2.2 Congener-Specific Compositions of Marketed Aroclors. Trichlorobiphenyl, tetrachlorobiphenyl, pentachlorobiphenyl, hexachlorobiphenyl, heptachlorobiphenyl, octachlorobiphenyl homolog regions are highlighted. Source data from Rushneck *et al.* (2004).

In the figure, the weight percentage of different congeners is depicted on the vertical axis, and the identity of the congener is depicted on the horizontal axis. The congeners are arranged in increasing order of their PCB number designation. Although the congener numbers increase from left to right, the congeners in the same homolog region are the same molecular mass (*i.e.*, the same number of chlorine atoms attached to the biphenyl rings in different locations). Figure 2.2 illustrates, for each Aroclor, the proportion of "lighter" congeners (with fewer chlorine per congener – on the left side of the horizontal axis) and "heavier" congeners (with more chlorine per congener – toward the right). Aroclor 1260 primarily has "heavier" congeners compared to Aroclors 1248 and 1254 (Frame *et al.*, 1996; Mullin *et al.*, 1984; Versar, Inc., 1976). Table 2.1 presents the approximate compositions of Aroclors by homolog. Each Aroclor had different primary uses, which are illustrated in Table 2.2 below (Versar Inc., 1976).

chlorine. The only exception to the PCB naming convention is Aroclor 1016, which is actually very similar to the composition of Aroclor 1242, with a chlorine percentage of 41.5%.

Table 2.1 Average Molecular Composition (Weight %) of Some Aroclors

Homolog (Chlorines)	1221	1232	1016	1242	1248	1254	1260
Mono (1)	65.5	31.3					
Di (2)	29.7	23.7	21.2	14.7			
Tri (3)	4.8	23.4	51.5	46.0	20.9	1.8	
Tetra (4)		15.7	27.3	30.6	60.3	17.1	
Penta (5)		5.8		8.7	18.1	49.3	9.2
Hexa (6)					0.8	27.8	46.9
Hepta (7)						3.9	36.9
Octa (8)							6.3
Nona (9)							0.7
Deca (10)							

Source: Frame *et al*. (1996, Table 3).

In addition to the production of Aroclors, studies have shown that PCBs are formed as a byproduct in industrial processes involving chlorine, carbons, and high temperatures above 300°C (Schmidt, 2014; Hu and Hornbuckle, 2010). The production of both organic and inorganic pigments that use chlorine-containing solvents and raw materials are associated with byproduct PCBs (Hu and Hornbuckle, 2010). The manufacturing of silicone products including glues (Anezaki and Nakano, 2013), rubbers (Perdih and Jan, 1994), and tubing (Cargill, 2014; Rodenburg, 2012, 2016) have byproduct PCBs. The production of metallic titanium involving reaction with chlorine and coke at high temperatures also has the potential to produce byproduct PCBs. In order to address byproduct PCBs, the US EPA named approximately 200 chemical products and chemical compound classes with the potential to generate PCBs during production (Callahan *et al*., 1983; Cristol, 1983). Table 2.2 summarizes the end uses of PCBs and polychlorinated terphenyls (PCTs) by type (Versar Inc., 1976).

Table 2.2 Summary of End-uses of PCBs and PCTs By Type

End-Use	1016	1221	1232	1242	1248	1254	1260	1262	1268	PCTs
Capacitors	xx	x		xx		x				
Transformers				x		xx	x			
Heat Transfer Fluids				x						
Hydraulic Fluids			x	x	x	x	x			
Vacuum Pumps					x	x				
Gas-transmission Turbines		x		x						
Rubbers		x	x	xx	x	x			x	
Synthetic Resins					x	x	x	x	x	xx
Carbonless Paper				xx						
Adhesives		x	x	xx	x	x				xx
Wax Extenders				xx		x			x	xx
Dedusting Agents						x	x			
Inks						x				xx
Cutting Oils						x				
Pesticide Extenders						x				
Sealants and Caulking Compounds										xx

Notes:
PCB = Polychlorinated Biphenyl; PCT = Polychlorinated Terphenyl.
X denotes use of a given Aroclor in a specific end-use, while xx denotes principal use.
PCT denote series 25, 44, and 54 Aroclors.
Source: Versar Inc. (1976).

2.1 PCB Regulatory Developments

Through the early 1970s, Aroclors were understood to be reliable and stable chemicals, and were handled by industry in accordance with general industrial practices of the time. As such, Aroclors enjoyed a wide and loyal following throughout major segments of the economy. Early brochures and handbooks on Aroclors from Monsanto contained no health or environmentally related Aroclor handling requirements as, "It is a simple matter as 'good housekeeping' and personal cleanliness" (Monsanto, 1956). During the late 1960s, however, the first evidence emerged that the stable characteristics of PCBs caused their unintended buildup in the natural environment.

People first became aware of PCBs as a potential environmental or human health issue in the late 1960s when Jensen (1969) observed their presence in fish and bird tissues. In 1968, people in Yusho, Japan were poisoned by consuming rice oil contaminated with high levels (1,000 ppm) of PCB oil leaked from a heat exchanger.[4] These were the seminal events for PCBs, but it took a whole decade after this for scientists and regulators to become convinced that PCBs posed a serious enough threat to warrant their removal from the marketplace in addition to their control through various environmental regulations (Shifrin and Toole, 1998). Some examples of the evolution of PCB scientific understanding, regulatory control, and industrial implications during this time are (Shifrin and Toole, 1998):

- In 1971, a Federal Interagency Task Force met to address toxicological, regulatory, and environmental concerns of PCBs (Nelson, 1972).
- In 1974, the American National Standards Institute (ANSI) published PCB handling and disposal guidelines for shipping, in-plant handling, and disposal (ANSI, 1974).
- Passed in 1976, the Toxic Substances Control Act (TSCA) gave the United States Environmental Protection Agency (US EPA) broad authority to regulate virtually all aspects of the manufacture, distribution, use, and disposal of chemicals in the United States. TSCA was the first law passed by Congress that specifically addressed a single chemical group (*i.e.*, PCBs). TSCA banned the manufacture, processing, distribution in commerce, or use of PCBs after January 1, 1978, with limited exceptions for certain activities (Erickson, 1997).
- In August 1977, Monsanto ceased all PCB production and many manufacturers voluntarily stopped using PCBs even before this date.

Many other important events regarding PCBs have occurred, but it can be seen from the list above that in the decade of the 1970s, the PCB environmental issues were clarified from a regulatory perspective. Regulations controlling the use and disposal of PCBs continued to evolve in the 1980s and beyond.

2.2 Historical Uses of PCBs

PCB mixtures were used in a variety of commercial products, including industrial fluids (*i.e.*, dielectric fluids,[5] heat transfer fluids, and hydraulic fluids), lubricant oils, and as additives in paints, carbonless copy paper, adhesives, sealants, and plastics. The use of PCBs can be divided into three categories (Erickson and Kaley, 2011):

[4] It was later concluded during the 1975 National Conference on PCBs that chlorinated furans were mixed in with the PCBs and likely caused the toxicity of the oil (Erickson, 1997).

[5] Dielectric fluids are liquids used as electrical insulators in high voltage applications, *e.g.*, transformers, capacitors, high voltage cables, and switchgear. Their function is to provide electrical insulation, suppress corona and arcing, and to serve as a coolant.

- Completely closed systems, such as capacitors and transformers, which are electrical equipment sealed off from the surrounding environment;
- Nominally close systems, such as vacuum pumps and other equipment using hydraulic and heat transfer fluid equipment that is not completely separated from the surrounding environment; and
- Open-ended applications, which are more broad uses that include surface coatings, plasticizers in PVC, casting waxes, *etc*., that are incorporated into a chemical matrix making PCB emissions into the environment more probable and difficult to control.

The range of use categories also introduces several different ways PCBs can be introduced into the environment. PCBs were mainly used as insulating fluids and lubricants in electrical equipment, *i.e*., certain transformers and capacitors. Historically, electric transformers generally fall into two types: dry, and oil-based dielectric fluid transformers. Dry transformers are air cooled, and this method of heat dissipation tended to be applicable for smaller units (Gibbs, 1950). Until 1932, mineral oil was the common dielectric oil used for liquid-filled transformers. Beginning in 1932, PCB-containing dielectric oils were introduced as fire-resistant dielectric fluids ideally suited for transformer applications where fire hazards posed significant concerns (Blume *et al*., 1951). The physiochemical properties of PCBs, most notably their resistance to fire and electrical insulating properties, made PCBs ideal and widely used ingredients in dielectric fluids for certain transformers.

Because PCBs had favorable chemical properties, they were also blended with other chemicals to create durable plasticizers (Broadhurst, 1972; Hubbard, 1964), dyes for carbonless copy paper (Versar Inc, 1976), paints and coatings, a wide variety of adhesives, caulks, joint sealants, and waxes for metal casting (Erickson and Kaley, 2011).

2.3 Environmental Fate and Transport of PCBs

Because PCB mixtures are no long manufactured, the release of PCBs into the environment is often from handling historic waste, *e.g*., uncontrolled landfills and hazardous waste sites (Persson *et al*., 2005; Yi *et al*., 2008); incineration of PCB-containing wastes (Murphy *et al*., 1985); leakage from older electrical equipment in use (Callahan *et al*., 1983); application of PCB-containing sewage sludge to farmland (Gan and Berthouex, 1994); and improper disposal or spills (FDA Consumer, 1979; Macomber *et al*., 2014). Due to their persistence, reports have shown wastewater treatment plants and water pollution control plants reduce PCB concentrations in water, but they do not fully remove them. For example, 26 water pollution control plants contribute 88 kg total PCBs annually to the New York/New Jersey Harbor Estuary (Durell and Lizotte, 1998), while the Montreal, Quebec, wastewater treatment plant contributed roughly 1 kg of PCBs into the St. Lawrence River in 1993 (Pham and Proulx, 1997).

Once PCB mixtures are released into the environment, PCBs can be transported through the environmental cycling process (Larsson, 1985; Lin and Que Hee, 1987; Mackay, 1989; Murphy *et al*., 1989; Swackhamer and Armstrong, 1986). Through the cycling process, their compositions may change by weathering processes such as volatilization, solubilization, and biodegradation depending on their environment (Erickson, 1997; Morrison and Murphy, 2006). These physical, chemical, and biological processes are collectively known as "weathering," in which the loss of PCBs can result in a change in the congener (or homolog) patterns of the original PCB mixture. The degree of weathering varies with the mixture and congener type, due to differences in the physical properties of each congener. Among the various PCB congeners, less chlorinated PCBs have higher vaporization rates than the more chlorinated PCBs due to higher vapor pressures.[6] The properties of PCBs that made them useful for industrial purposes, however,

[6] Vapor pressure is a measure of a chemical's ability or tendency to partition into the vapor phase.

also make them resistant to environmental weathering. In addition, the mobility of PCBs throughout the environment is based on the congeners present (*i.e.*, volatility and solubility) and the location, which dictates the quality of the soil and sediments, the composition of the water column, *etc*.

PCBs can be trapped in aquatic sediments for relatively long periods of time, especially when they are composed of clay with high organic matter content (US EPA, 1980). Because of their persistence in the environment, PCBs are readily available for biomagnification (*i.e.*, the increase in concentrations of persistent pollutants increase going up the food chain) since they are fat soluble compounds that are absorbed and stored in animal lipids. PCBs tend to be associated with particulate matter due to their low water solubility, therefore, binding strongly to clay-silt sediments, soils and the fat tissue of living creatures (US EPA, 2000; ATSDR, 2000). Fish are primarily exposed to PCBs through the consumption of contaminated prey and the ingestion of PCB-contaminated sediments or organic matter (US EPA, 2000). PCB uptake *via* diet occurs through diffusion across the upper intestine; therefore, the rate and extent of absorption across the intestine primarily determines the individual fish body burden (Carlson and Hites, 2005; Nichols *et al*., 2001; James and Kleinow, 2013; Kelly *et al*., 2004). Since PCBs are very persistent and are soluble in lipids, they are stored within fish tissue (*i.e.*, fatty tissue) and are slowly eliminated, leading to bioaccumulation in individual fish (ATSDR, 2000). PCBs are mainly eliminated through the conversion into more water-soluble metabolites, which are then readily excreted (James and Kleinow, 2013).

3 Environmental Conditions at Lake Wateree

3.1 Site Background

Lake Wateree, located in north-central South Carolina, is a roughly 50 km^2 man-made reservoir developed in 1919 by damming Wateree River with a hydroelectric power plant, which is operated by Duke Energy Carolinas (Duke Power Co., 2019). The lake is part of the Catawba-Wateree Hydroelectric Project that includes "13 powerhouses, 11 dams and reservoirs, and 1700 miles of shoreline" owned and managed by Duke Energy (South Carolina Dept. of Archives and History, 2025). The lake was developed primarily for hydroelectric power generation and is still part of Duke Energy's regional power infrastructure (South Carolina Department of Natural Resources [SCDNR], 2014). The lake is situated in the Piedmont region, a zone characterized by rolling hills and ancient metamorphic and igneous bedrock, which influences the topography of the lake basin and its irregular shoreline (SCDNR, 2014). Lake Wateree is part of the Catawba-Wateree River Basin, receiving inflows primarily from the Catawba River system upstream and discharging through the Wateree River downstream (USGS, 2000). The reservoir and its surrounding areas, including a shoreline that extends over 250 km, are co-managed by Duke Energy and the SCDNR (SCDNR, 2014).

Although I understand that Plaintiffs have alleged that the PCBs detected in Lake Wateree are attributable to PCBs in transformer oil that I understand may have been used in Duke Energy's Mosquito Control Program, not all transformer oil used as dielectric fluids in transformers contained PCBs, and I have seen no evidence that any transformer oil that was reportedly used in Duke Energy's Mosquito Control Program contained PCBs at any point in time.

3.2 Other Sources of PCBs in the Catawba-Wateree Basin

There are known sites with PCB contamination along the Catawba-Wateree River basin area, upstream from Lake Wateree, which are summarized in Table 3.1 below. Sites include Superfund sites, a removal response site, and Brownfield sites that have reported onsite PCB measurements in several environmental media, *i.e.*, soil, sediment, surface water, and groundwater. In addition, there is a paper mill site established in 1959 in Catawba, SC, along the Catawba River upstream of Fishing Creek Lake. The source of PCBs to the pulp and paper industry is from recycling carbonless copy paper manufactured from 1957 to 1971 (Versar Inc., 1977). Notable Superfund sites and reported Brownfields are summarized below.

Table 3.1 Known and Potential Sources of PCBs in the Catawba-Wateree Basin

Site Name	Description	Reported PCB Contamination	PCB Source
Rock Hill Chemical Company	Superfund Site	ND – 33 mg/kg (soil)	Industrial waste
Carolawn Incorporated	Superfund Site	ND – 5.4 mg/kg (soil/sediment)	Industrial waste
Pineville Textile Mill	Removal Response	ND – 10.1 mg/kg (liquid waste)	Industrial waste
Springs Industries Lancaster Mill	Brownfield	PCBs detected	Historic mill
Former Republic Mill #3	Brownfield	PCBs detected	Historic mill
650 Friedheim Road	Brownfield	PCBs detected	Historic landfill
Catawba Paper Mill	Pulp and Paper	NA	*Carbonless copy paper

Notes:
NA = Not Applicable; ND = Non Detects; mg/kg = Parts per Million; PCB = Polychlorinated Biphenyl.
* There is no mill activity record; however, given the age of the mill and the known recycling of carbonless copy paper, the Catawba Paper Mill could have been a source of PCBs from its opening until 1971.

The **Rock Hill Chemical Company** operated a solvent reclamation facility next to US Highway 21 and Farlow Street in Rock Hill, South Carolina, from 1960 to 1964. The operations produced reclaimed oil from waste fluids *via* a filtration of solvents through a charcoal filter press. Generated waste was stored on site, including textile dye products, paint sludge, and other chemical waste products generated at the facility (US EPA, 2025a). Storage conditions are reported to have been "poor," with waste being stored "in piles placed directly on the ground" and occasionally "buried at the site" (CDM Federal Programs Corp., 1993). Tanks were used to store liquid waste which "on occasion leaked into the ground" (CDM Federal Programs Corp., 1993). The first site investigation conducted in 1985 found a combination of metal, volatile organic compounds [VOCs], and PCBs across soil, sediment, drum waste, groundwater, and surface water. Sediment was reported to have PCBs at "low levels" (CDM Federal Programs Corp., 1993). On site soil sample analysis reported PCBs concentrations up to 33 ppm (CDM Federal Programs Corp., 1993) and sediment concentrations up to 4.5 ppm (CDM Federal Programs Corp., 1993). Both soil and groundwater remediation efforts were conducted at the site starting in 1985, with annual groundwater monitoring since 1995. Soil sampling conducted in 1993 showed up to 0.23 ppm of Aroclor 1254 in surface soils and up to 0.052 ppm of Aroclor 1260 in subsurface soils (CDM Federal Programs Corp., 1993).

The **Carolawn, Inc.** Superfund site is located at 5093 Morrison Road in Fort Lawn, South Carolina. The 60-acre site operated as a waste disposal and storage facility from 1970 to 1979, disposing of approximately 4,500 drums of waste, sludge, and bulk storage tanks within a 3-acre fenced area on the site (US EPA Region IV, 2023). An additional 660 drums and 11 storage tanks were disposed of outside of the fenced area, still within site boundaries (US EPA, 2025b). Site investigations in the 1980s found "elevated levels of contamination" of PCBs (US EPA Region IV, 2023). Maximum PCB concentrations on the site were detected in soil at 5.4 mg/kg, 0.44 mg/kg, and 0.70 mg/kg for Aroclor 1254, Aroclor 1248, and Aroclor 1260, respectively (US EPA Region IV, 2023). In soil, Aroclor 1254 was detected in concentrations above the non-cancer regional screening level [RSL] of 1.2 mg/kg in two of nine samples that ranged from 0.028 to 5.4 mg/kg of Aroclor 1254 (US EPA Region IV, 2023). Remediation activities began in 1981, with ongoing groundwater monitoring at the site using a soil vapor extraction system operational to control the groundwater VOC plume (US EPA, 2025b).

The **Pineville Textile Mill** is located at 436 Cone Avenue in Pineville, North Carolina. The site began as a cotton mill in 1894 manufacturing assorted cotton goods, including sheets and jeans, until the plant ceased operations in 1991 (Oneida Total Integrated Enterprises [OTIE], 2014). After its closure, the "North Carolina Department of Environment and Natural Resources requested support from [US] EPA after inspecting the site and observing materials suspected of containing PCBs" (OTIE, 2014). In 2014, OTIE

found "41 55-gallon drums, seven 5-gallon containers, one 30-gallon drum, one 15-gallon drum, two 25,000-gallon aboveground storage tanks (AST), and one underground sump of unknown volume" (OTIE, 2014). Out of 14 waste samples analyzed, 7 contained concentrations of up to 10.1 mg/kg of Aroclor 1260 (OTIE, 2014).

The **Springs Industries Lancaster Mill** is located at 916 15th Street in Lancaster, South Carolina. Springs Industries Inc opened the facility in 1895 (Company-Histories.com, 2025). The mill originated as one building, with expansions taking place in the early 1900s and in the 1940s. By 1950, the property had multiple mill buildings, a machine shop, incinerator, engine house, boiler room, spray pond, and a transformer house. The mill took part in the spinning and weaving of textiles. The facility closed in 2003, and while one mill building was demolished in 2002, most of the structures remain standing (US EPA, 2025c). The South Carolina Department of Health and Environmental Control [SCDHEC] included the site in a 2009 Phase II Environmental Assessment. The Springs Industries Lancaster Mill is classified as a brownfields site, with PAHs and PCBs identified as contaminants found in soil on the site (US EPA, 2025c).

The **Republic Mills** site, also known as former Republic Mill #3, is located at 29 Argonne Avenue in Great Falls, South Carolina. From approximately 1931 to 1984 the site operated as a textile manufacturing facility, remaining vacant following the mills' closure until 1997. A plastics recycler and antique shop were hosted from 1997 until 2006, when an "extensive fire broke out" (US EPA, 2025d). Since the fire, the property has remained vacant. The approximately 16.3-acre site contains debris piles, a detention pond, a 30,000-gallon aboveground storage tank, building pads, and vacant warehouses, building shed, guard shacks, and smoke stacks (US EPA, 2025d). The former Republic Mill #3 is classified as a brownfields site. Phase I Environmental Assessment activities took place at the site in both 2008 and 2022 finding PCBs and petroleum products in both soil and groundwater (US EPA, 2025d).

The **Friedheim Road Landfill** is located at 650 Friedheim Road, Rock Hill, South Carolina covering approximately 85 acres, encompassing a landfill and two structures (US EPA, 2025e). The landfill operated from 1961 to 2011 (US EPA, 2025e). The site underwent several Environmental Assessments starting in January of 2023 by the City of Rock Hill, reporting both PCBs and petroleum products in groundwater and sediments (US EPA, 2025e).

A substantial portion of the Charlotte metropolitan area is in the Catawba-Wateree watershed. Storm water sewers and sanitary sewers in urban areas are frequently potential and actual sources of historical contamination, including PCBs, to surface waters (Durell and Lizotte, 1998; Foss *et al*., 2025; Rodenburg *et al*., 2011). All of Charlotte's discharges of this nature which are in the Catawba-Wateree watershed occur upstream of Lake Wateree. The discharges from Charlotte's Irwin Creek Wastewater Treatment Plant and its Sugar Creek Wastewater Treatment Plant also eventually flow into the Catawba River Basin, upstream of Lake Wateree. Wastewater treatment plants can receive all sorts of inputs, including those containing PCBs, and the removal processes extant in such plants are usually not capable of completely removing the PCBs from their discharges. There is often little or no treatment of storm water discharges and such runoff contamination in urban areas has been associated with significant PCB contamination along with other pollutants.

PCB issues at water treatment facilities are not only 'historical.' In 2014, there was a major PCB contamination incident (Macomber *et al*., 2014), at Charlotte's Mallard Creek Water Reclamation Facility (MCWRF). Extensive contamination of the facility resulted from an illicit discharge of PCB-containing material at a grease trap from a local grocery store connected to their collection system. The material collected from the grease trap had 4,210 mg/L (ppm) of Aroclor 1254 and 2,940 mg/L of Aroclor 1260 (a total of 7,150 mg/L PCBs). Contamination from this grease trap travelled 8.7 miles including 181 manholes to arrive at the MCWRF. It resulted in the contamination of virtually the whole plant. While this facility

is not in the Catawba-Wateree watershed, it provides a stark example of the vulnerability of wastewater treatment plants to uncontrolled inputs into their systems.

4 Conclusions and Opinions

4.1 The risk and potential need for cleanup of lakeshore properties may vary significantly based on differing PCB concentrations, which may influence both potential devaluation and cleanup requirements.

The potential alleged diminution of the property value of any lakeshore property would, at least in part, be presumably related to the concentrations of PCBs on that property. The calculated risks associated with PCBs on an individual property would be related to that specific property's PCB contamination – the greater the concentrations, the greater the associated risks. Not only would the risks differ among properties depending on their PCB levels, but the appropriate extent of cleanups would also differ: in complexity, duration, and cost. It would be highly unusual for all properties to be identical or even similar in the concentration levels of total PCBs, let alone concentration levels associated with specific Aroclor formulations.

There has been no information brought forward in this litigation regarding the PCB concentrations on the lakeshore properties along Lake Wateree, and it would be nonsensical to have a single class of property owners without such information. To begin to evaluate the situation, one would need to determine whether PCBs are indeed present on the properties and at what concentration levels. Then, the PCB fingerprint would need to be evaluated at multiple locations on each property – because there is no guarantee that the PCB fingerprint is constant across any given property – to determine whether it is consistent with one or more Aroclor formulations. As discussed above (pp. 10-11), when PCBs are released into the environment, weathering can change the relative proportions of the remaining PCB congeners, thereby changing the PCB fingerprint and making it difficult to determine the identity of the original Aroclor or Aroclors. If the PCB contamination present on a given property can be attributed to specific Aroclor formulations, then it is possible that certain industrial sources may appear to be more or less likely to be the source of the property's PCB contamination. However, even with PCB Aroclor analysis or the more informative, sensitive, and expensive PCB congener analysis, there is no guarantee that a specific individual source can be determined with a reasonable degree of certainty.

4.2 The PCB Fish Data are not consistent with the Lakes that were part of the Mosquito Control Program.

Examination of Figure 4.1, a map which depicts where the mosquito control program [MCP] was conducted (Duke Power Co., 1977; Swearingen, 1976) and the mean PCB concentrations and sampling locations reported in Glover and Gundersen (2021), shows that there is no correlation between which Lakes were treated and the concentrations of PCBs in fish tissue.

For example, Lake James and Lake Norman were part of the MCP but trace levels of PCBs in fish did not exceed the fish consumption advisory (<0.05 parts per million). Glover and Gunderson did not report any fish data for Lake James; PCBs have not been an issue there.

Recent research conducted by the Research Triangle Institute [RTI], however, sheds some light on the issue. They performed a broad-spectrum analysis with High Resolution Mass Spectrometry that detected over 400 chemical analytes in Lake James water samples (RTI, 2025). PCBs were not reported.

While Lake Wylie and Lake Wateree had low levels of PCBs in fish, higher concentrations were found in lakes that were not part of the MCP. As discussed above, there are many potential sources of PCBs and the highest levels in fish were not in lakes where the MCP was conducted but were instead in the vicinity of the numerous known PCB sources in the area (depicted in Figure 4.1). The highest fish tissue levels were found upstream of Lake Wateree, in the Fishing Creek Reservoir, upstream of Lake Wateree but downstream of where Sugar Creek feeds into the Catawba River. Sugar Creek receives discharge from one of Charlotte's wastewater treatment plants, the Sugar Creek Wastewater Treatment Plant, another example of a known PCB source. Charlotte's Irwin Wastewater Treatment Plant also discharges into the Catawba River system and is upstream of Lake Wateree.

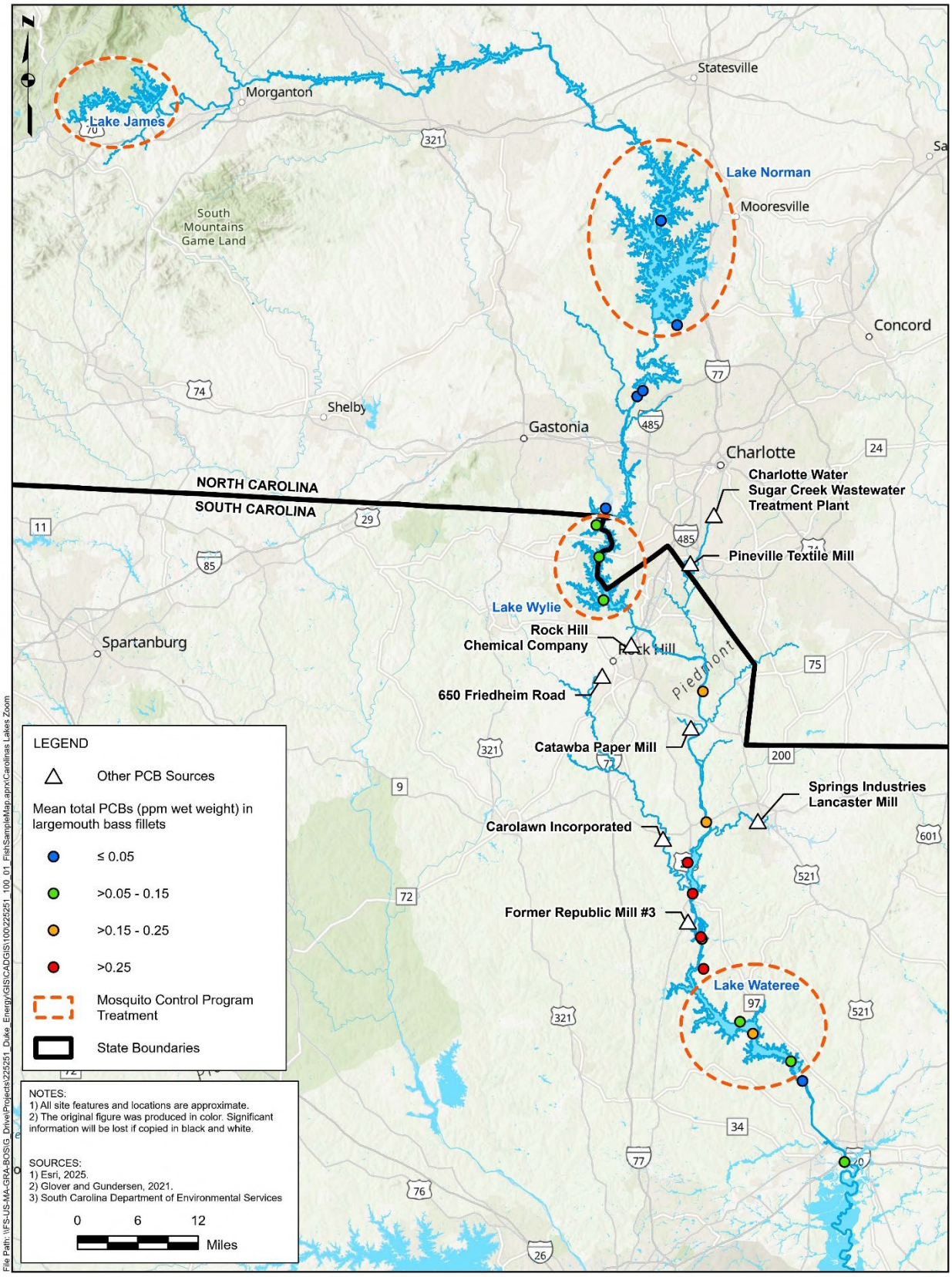


Figure 4.1 Mean Total PCB Concentrations in Largemouth Bass Fillets from the Catawba River Basin

4.3 The PCB Fish Data are not sufficient to identify a specific PCB source.

Reported PCB concentrations in fish in Lake Hartwell are attributed to a known Superfund site, not a mosquito control program. "Sangamo Weston, Inc., owned and operated a capacitor manufacturing plant in Pickens, South Carolina from 1955 to 1978, near the headwaters of Lake Hartwell" (US EPA, 1994). Fish sampled from Lake Hartwell reported PCBs concentrations up to 19.7 ppm (US EPA, 1994). The similarity of the reported congener patterns found in fish tissue collected in Lake Hartwell, Lake Murray (downstream of Lake Hartwell), Mountain Island Reservoir, and Lake Wateree, in Figure 4.2 below, show that the industrial source of PCBs to Lake Hartwell, produced a congener pattern in fish that is similar to the patterns in the fish of other areas as well. The process of bioaccumulation of PCBs into fish tissue as described above makes it extremely challenging to identify the source of the contamination with the pattern alone.

As noted above, I have seen no evidence that any materials sprayed by Duke Energy's MCP contained any PCBs. Furthermore, given the lack of PCBs detected in fish collected from other water bodies that were treated as part of the MCP, I see no reason to assume that any PCBs in fish collected from Lake Wateree resulted from the MCP.

As depicted in Figure 4.1, PCB concentrations in fish tissue vary at different locations within Lake Wateree, indicating that PCBs in the lake itself are not uniformly distributed and suggesting that individual properties might not contain similar PCB fingerprints or concentrations. Finally, even if the MCP did spray PCBs onto Lake Wateree, the presence of multiple upstream PCB sources needs to be considered. If any PCB contamination is found on individual properties, then such contamination would need to be carefully evaluated to determine whether it is consistent with PCBs from the MCP or the multiple upstream sources.

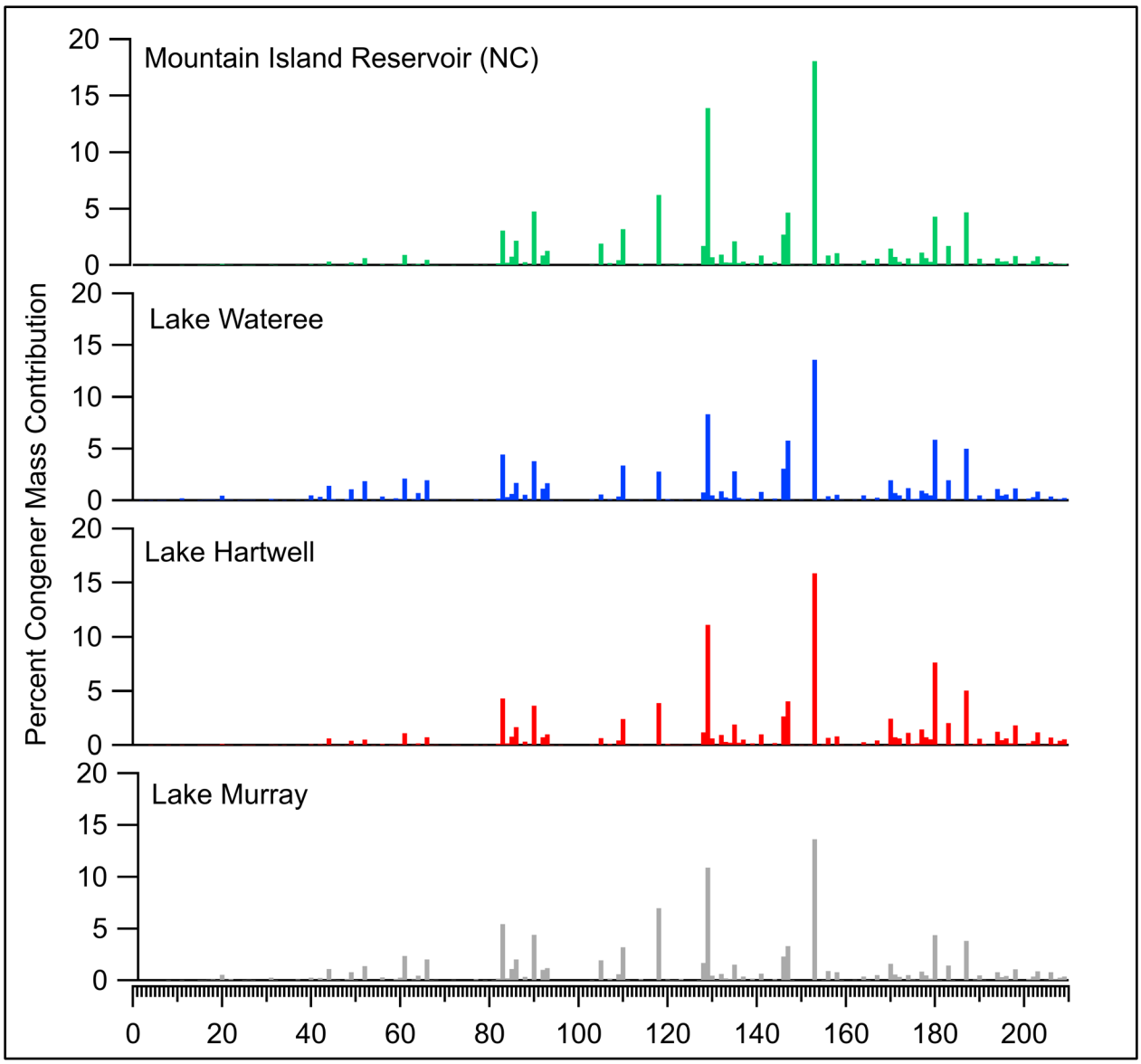


Figure 4.2 Reported Congener Patterns in Fish Tissue Samples from Mountain Island Reservoir, Lake Wateree, Lake Hartwell, and Lake Murray. Source: US EPA (2009).

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Appendix A

***Curriculum Vitae* and Testimony Experience of Eric L. Butler, Ph.D.**

Eric L. Butler, Ph.D.
Principal
Eric.Butler@gradientcorp.com

Areas of Expertise

Environmental chemistry, gas chromatography, petroleum hydrocarbon chemistry, product chemistry, PCBs, dioxins, solvents, fingerprinting, forensic chemistry, litigation support, artifact dating, bioremediation, quality assurance, laboratory management, field chemistry, analytical method development.

Education

Ph.D., Chemical Oceanography, University of Rhode Island, 1986

B.S., Chemistry, *Magna Cum Laude*, Muhlenberg College, 1976

Professional Experience

1996 – Present GRADIENT, Boston, MA
Principal. Application of analytical chemistry and statistical/mathematical methods for source identification and allocation, involving petroleum hydrocarbons, PCBs, dioxins, and solvents; product chemistry; litigation support with regard to sources and fate of contaminants in the environment; interpretation of laboratory results; design of analytical chemistry methods and quality assurance programs; and research on and dating of artifacts.

1992 – 1996 ENSR CONSULTING AND ENGINEERING, Acton, MA
Senior Consulting Chemist. Design and oversight of analytical chemistry programs for environmental studies; interpretation of laboratory results; direction and evaluation of petroleum hydrocarbon analyses.

1989 – 1992 BATTELLE OCEAN SCIENCES, Duxbury, MA; Anchorage, AK
Principal Research Scientist. Designed and implemented numerous environmental studies relating to the Exxon Valdez oil spill; designed ecological impact assessments of coastal sediments; directed sophisticated chemical analyses to track bioremediation.

1987 – 1989 BARNSTABLE COUNTY HEALTH AND ENVIRONMENTAL DEPARTMENT, Barnstable, MA
Laboratory Director. Directed water testing laboratory performing chemical and bacteriological testing of drinking water, groundwater, surface water, and of monitoring wells at hazardous waste sites and petroleum spills. Analyses included VOCs, pesticides, trace metals, nutrients, coliform, and heterotrophic plate count.

1985 – 1987 CONGRESSIONAL OFFICE OF TECHNOLOGY ASSESSMENT, Washington, DC
Analyst. Analyzed issues concerning new technologies and worked with diverse groups of stakeholders to collect, analyze, and synthesize data, then summarize and present policy options to Congress. Focused on two reports: Transport of Hazardous Material and Motor Carrier Safety.

1984 – 1985 CONGRESSIONAL SCIENCE FELLOW/AMERICAN GEOPHYSICAL UNION, Washington, DC

Committee Staffer, Commerce, Transportation & Tourism (House Energy & Commerce). Technical analyst for committee work on Superfund reauthorization, Community Right to Know, and RCRA; prepared materials for hearings, evaluated technical aspects of proposed legislation and of OTA, GAO, CBO, CRS, DOD, and US EPA environmental reports.

1983 – 1984 PHILLIPS ACADEMY, Andover, MA

Instructor. Taught oceanography and chemistry and coached JV Football and recreational tennis.

Professional Activities

- Expert testimony in cases involving nature and source of petroleum hydrocarbons, industrial chemicals, VOCs, and other chemicals at sites undergoing environmental investigation.
- Coordinator for analytical services in support of environmental site investigations.
- Active reviewer of articles for peer-reviewed journals.

Professional Affiliations

American Chemical Society; American Geophysical Union

Projects

PCB Cost Recovery: Retained as an expert in a case involving polychlorinated biphenyls (PCBs) at a major transportation facility in New York City. The work involved assessing the nature and extent of PCB soil contamination and the relative proportions of various Aroclors found at the site.

Manufacturer: Retained as consulting expert and potential testifying expert by law firm representing generic drug maker. Evaluated claims of contamination of pills by breakdown product of the active ingredient.

Utility Company: Retained through outside counsel to evaluate their potential contribution of PCBs to a nearby river. Reviewed site investigation reports and historical documents and critically reviewed forensic reports pertaining to the sources of COCs to the river sediments.

Cost Allocator: Directed technical support in many areas to support a large, sediment cost allocation in a tidal, urban waterway in the Northeastern United States. COCs included mercury, other heavy metals, and PCBs.

Commercial Client: Retained as an expert witness in litigation involving the timing of PCB contamination in soil at an adjacent property. Evaluated on- and off-site soil analytical data, as well as historic PCB purchase records, and testified at trial as to the likely timing of the PCB contamination to off-site soils.

Northwestern Coastal City: Retained as expert to evaluate sources and contributions of contamination to estuarine sediments for a Superfund PRP. Constituents of concern include PCBs, PAHs, and metals.

Commonwealth of Massachusetts: For a site contaminated with PCBs, lead, and Total Petroleum Hydrocarbons, provided an expert report and testimony evaluating the sources of the contaminants using congener specific PCB analysis and petroleum hydrocarbon fingerprinting, along with a spatial analysis of the data. Gradient's evaluation enabled significant recovery of expense costs.

PCB Cost Recovery: Retained as an expert in a case involving polychlorinated biphenyls (PCBs) at a transportation facility. The work involves PCB fingerprinting analyses, critical review of historical site data, and review of Aroclor production figures in support of a cost allocation.

PCBs in Sediments: Evaluated the nature and source of PCB contamination in San Diego Harbor. The work involved evaluation of chemical fingerprints and application of statistical techniques including Principal Component Analysis (PCA) and Alternating Least Squares (ALS) to identify and assess the strength of different sources of PCBs to the sediments.

Sediment and Sheen Characterization: For a steel manufacturer, evaluated the possible connection between sediment contamination and evolution of surface water sheens using advanced chemical fingerprinting techniques.

Environmental Forensics: For prior owner of a refinery, evaluated the nature and source of shallow soil vapors and indoor air. Applied chemical and spatial analysis to explore relationships among possible sources and receptor locations. Prepared an expert report and provided deposition and trial testimony.

Energy Company: Supported a time-critical data quality review of total petroleum hydrocarbon data for soils potentially affected by a pipeline release in the western United States.

Law Firm: Supported an evaluation of the usability of data produced for various environmental investigations conducted in response to the Deepwater Horizon oil spill that occurred in the Gulf of Mexico in the Spring of 2010.

Manufacturer: Retained as an expert witness in a dispute between current and prior property owners at a former transformer manufacturing site in CA. Evaluated SVOC and PCB results for various media, prepared an expert report, and provided deposition and trial testimony.

Oil Refinery: For prior owner of closed refinery, submitted expert report and provided sworn trial testimony regarding the nature and origin of groundwater contamination. The forensic work included isotope analysis, chemical fingerprinting, spatial analysis, and temporal analysis. The trial resulted in a defense verdict.

Manufacturer: Retained as an expert to evaluate allocation arguments regarding contaminated sediments in an urban waterway Superfund site in NY. Contaminants include PCBs, metals, and PAH.

Die-Cast Manufacturer: Manager of project to determine sources of PCBs to stream sediments and nearby soils and to support cost allocation mediation.

Steel Company: Retained as an expert to determine source of PCBs at an oil recycling facility.

Chemical Company: Provided chemistry consulting and oversaw data quality issues at a transformer manufacturing plant undergoing investigation for PCBs and dioxins/furans, and undergoing remediation for PCBs. Compared extensive field chemistry PCB results with fixed laboratory results. Detailed dioxin fingerprinting was performed to advise client.

Paper Mill: Litigation support involving dioxin fingerprinting of local emission sources and comparison to soil and blood samples, as well as to documented national emission sources.

University: Chemistry consulting on the use of fingerprinting to ascertain the source of dioxins after a fire involving electrical equipment in an electrical vault in the basement.

MWRA: Lead author of Combined Work/Quality Assurance Project Plan (CW/QAPP) for Detailed Effluent Characterization Study of the MWRA Harbor and Outfall Monitoring Project. Chemicals evaluated included PAH, PCBs, nutrients, and trace metals. Co-author of CW/QAPP for the Fish and Shellfish Study and the Benthic Surveillance Study.

MWRA: Author of analytical chemistry sections for CW/QAPP for Fish and Shellfish Monitoring and CW/QAPP for Sediment Studies. Analyses included trace metals, PCBs, and PAHs.

US Navy: Designed environmental assessment of marine sediment and biota offshore hazardous waste site at a US Navy base, addressing concerns for heavy metals, pesticides, PCBs, VOCs, and PAHs.

Consulting Company: Designed studies of the uptake and depuration of PCBs by demersal fish, selecting analytical methods, feeding methods, dosing methods, and testing durations.

Consulting Firm: Reviewed and evaluated data validation reports for sophisticated PCB analytical chemistry program developed by Gradient for investigations of Hudson River.

Exxon: Major researcher and contributor to study of petroleum hydrocarbons in Prince William Sound sediments. The study encompassed over 1,000 samples from more than 20 stations, visited during 7 research cruises.

Exxon: Major researcher and author of study of the water quality of Prince William Sound following the *Exxon Valdez* oil spill. The study encompassed over 3,000 samples from 35 stations collected during 7 research cruises.

Citgo: Used advanced GC/FID and GC/MS hydrocarbon fingerprinting to identify fugitive petroleum products in soils and groundwater. Characterized the fugitive product and identified the likely source among several different product storage tanks.

Consulting Firm: Part of technical panel supporting arbitrator in cost allocation of a Superfund sediment cleanup at coastal waterway, focusing on sources of PAH in the sediment.

Commercial Client: Served as expert witness in litigation involving the sources of petroleum hydrocarbons and chlorinated solvents at a Superfund site. Demonstrated that our client's underground storage tanks were not associated with the groundwater contamination affecting the site. Showed that tank contents were dissimilar from contents of underground piping that emanated from landlord's building.

Commercial Client: Served as expert witness in litigation involving the sources of constituents of interest to a former wood-treating site. Designed and implemented research that demonstrated the presence of a non-creosote source of various constituents to the site.

Major Oil Company: Used advanced GC/FID and GC/MS hydrocarbon fingerprinting to identify fugitive petroleum products in soils and groundwater. Investigated relationship between polynuclear aromatic hydrocarbon (PAH) content of various petroleum products and worked with toxicologists to develop models of associated risks.

Citgo: Developed new GC/MS method for determination of tetra-ethyl lead in fuels.

Major Oil Company: Used advanced petroleum hydrocarbon analysis methods to identify and use molecular weathering ratios and molecular source ratios to differentiate different sources of products to the environment.

Exxon: Coordinated all chemical analyses, selecting methods and laboratories and helped design and initiate the field sampling program for a landmark Alaskan bioremediation project for the *Exxon Valdez* spill.

Exxon: Interpreted hydrocarbon and nutrient data and supported technical reports to the Federal-On-Scene-Coordinator on the Alaskan Bioremediation Monitoring Project. Directed the sampling and analysis of over 400 sediment samples for total oil analysis and over 100 sediment samples for specialized analysis of hopane and alkylated PAHs.

Exxon: Performed laboratory audits and co-directed a large (approximately $1 million) program that ensured consistent application of SOPs for organic analyses used in most of the environmental studies related to the *Exxon Valdez* oil spill.

Exxon: Designed and implemented surveys for petroleum hydrocarbons in shrimp, herring roe, and salmon fishing areas of Prince William Sound, AK.

Environmental Forensics: For a manufacturer, designed an analytical program to identify and quantify contamination attributable to the prior owner at a site in Switzerland.

Confidential Client: Directed compound-specific isotope analysis of TCE in groundwater as part of forensic investigation to identify sources.

Confidential Client: Lead chemist for project evaluating health effects of wood treated with chromated copper arsenate (CCA). Evaluated chemical forms, oxidation states, environmental mobility, and bioavailability of arsenic in treated wood and adjacent soils.

Energy Company: Lead chemist in project evaluating the fate and effects of fugitive mercury (Hg) in residential environments.

Major Automobile Manufacturer: Developed arguments and designed analytical chemistry program to show source of lead (Pb) in dwellings came from household plumbing and not a relic gasoline spill.

Transportation Company: Designed and implemented program to collect, process, and date industrial and consumer product artifacts exhumed during nine-month excavation at a large transportation facility. Wrote expert report and provided deposition testimony on findings.

Multi-national Company: Designed and implemented program to collect, process, and date artifacts exhumed from 11 test pits at a mixed waste site in New England.

Manufacturer: Testified in trial regarding dating of artifacts retrieved from an abandoned underground storage tank.

Municipal Governments: Planned and implemented groundwater monitoring activities at landfills, petroleum spills, and suspected hazardous waste sites in a sole source aquifer region of Massachusetts.

Superfund Site: Planned and implemented field sampling program collecting river water and sediment samples for organic (*e.g.*, PAH, VOC, pesticides, dioxin) and inorganic parameters (*e.g.*, trace metals and nutrients) at Superfund site.

Commercial Clients: Served as expert witness in several litigation cases regarding the nature and sources of petroleum hydrocarbons, chlorinated VOCs, and PAHs at a variety of Superfund sites.

Commercial Client: Investigated historical waste disposal practices and process releases for a chemical toll manufacturing facility and solvent recycler.

Barnstable County, MA: Directed US EPA- and state-certified laboratory performing analyses on drinking and waste waters for VOCs, trace metals, minerals, pesticides, and bacteriological parameters. Planned and implemented groundwater monitoring activities at landfills, petroleum spills, and suspected hazardous waste sites.

ASTM: Participated in ASTM's D34 Committee on Hazardous Waste which produced a new standard for developing Data Quality Objectives for environmental work. Participated in ASTM's subcommittee on sampling of heterogeneous wastes as the committee examined several types of situations including auto recycling centers.

Multiple Clients: Performed data validation of organic and inorganic analyses, including VOCs, SVOCs, PCBs, dioxin, trace metals, and nutrients.

US Congress: Researched technical issues as staffer on Congressional Subcommittee with primary responsibility for CERCLA during reauthorization of SARA 1986.

US Congress: Co-author/Analyst of OTA Report on the Transport of Hazardous Materials and Motor Carrier Safety. Analyzed issues concerning new technologies and worked with diverse groups of stakeholders to collect, analyze, and synthesize data, then summarized and presented policy options to Congress.

National Science Foundation: Developed new method for collection and gas chromatographic analysis of halogenated organic gases at the parts per trillion levels.

Consulting Company: Directed sub-part per billion analyses of VOCs in ground water, with extensive QC and 24-hour turnaround for innovative plume tracking project at the Massachusetts Military Reservation.

Commercial Client: Guided sampling activities and directed sample analysis of DNAPL and asphalt samples to elucidate sources of petroleum hydrocarbons in the DNAPL, as part of litigation case at a Superfund site in New England.

Commercial Client: Provided litigation support through data interpretation of VOC results in groundwater and soils with regard to identifying sources, differentiating plumes, and dating releases into the environment.

Superfund Site: Managed data validation for extensive multimedia investigation of Superfund site including numerous organic and inorganic parameters.

Exxon: Trained a Rapid Assessment Team that responded to reports of tainted fish or fouled gear within 6 hours of notification. Team members collected samples for screening and laboratory analysis from a variety of media.

Reilly Industries: Managed data validation project involving specialized analysis of PAHs in water at the parts per trillion level (ng/L).

ASTM: Participated in validation study for a new ASTM field method for determining fuels in soil.

Boston & Maine Railroad: Designed laboratory treatability studies to investigate bioremediation as a remediation tool. Used hopane analysis and alkylated phenanthrene analysis to monitor biodegradation during treatment of soil piles.

US EPA: Designed sampling and analytical scheme for tracking and analysis of dredge material plumes. Analyses included trace metals, turbidity, and particle size range measurements.

Massachusetts Water Resources Authority: Task Area Manager for effluent characterization and laboratory liaison for water column, sediment, and tissue studies for Harbor Outfall Monitoring Plan. Analyses included PAH, PCBs, and metals.

Public Water Suppliers: As Laboratory Director of only Municipal Laboratory in New England, guided 18 public water suppliers on Cape Cod through the implementation of the Safe Drinking Water Act of 1986.

Selected Presentations and Publications

Butler, EL; Rominger, JT; Reynolds-Reid, K; Radloff, KA; Hennet, RJC. 2019. "Source allocation of PCBs derived from quantile analysis of cumulative response curves combined with Monte Carlo analysis" Presented at the Battelle International Conference on Remediation and Management of Contaminated Sediments, New Orleans, LA, February 13.

Rhomberg, LR; Mayfield, DB; Goodman, JE; Butler, EL; Nascarella, MA; Williams, DR. 2015. "Quantitative cancer risk assessment for occupational exposures to asphalt fumes during built-up roofing asphalt (BURA) operations." *Crit Rev Toxicol.* 45(10):873-918. doi: 10.3109/10408444.2015.1094450.

Kneeland, JM; Butler, EL. 2013. "Hydraulic Fracturing Fluid Forensics: Potential and Pitfalls." Presented at 20th International Petroleum Environmental Consortium Conference, San Antonio, TX, November 12.

Tuit, CB; Butler, EL. 2013. "Decachlorobiphenyl-rich Polychlorinated Biphenyl Fingerprint in Estuarine Sediments." Presented at Battelle's Seventh International Conference on Remediation of Contaminated Sediments, Dallas, TX, February 4-6.

Merrill, DE; Drivas, PJ; Butler, EL; Jegadeesan, GB. 2011. "Determination of polychlorinated biphenyl (PCB) release time frame using weathered congener and homolog fingerprints and a multicomponent evaporation model." *Environmental Forensics* 12(1):35-48.

Butler, EL; Sharma, M. 2011. "Proven Environmental Forensic Methods for Determining Liability and Apportioning Allocation Under CERCLA." Invited Speaker. Presented to the American Bar Association, 40th Annual Conference on Environmental Law; Salt Lake City, UT, March 17.

Butler, EL; Tuit, CB; Reid, KR; Wannamaker, EJ. 2009. "Forensic Investigation of Indoor Hydrocarbon Vapors: A Case Study." Platform presentation to the 25th Annual Conference on Soils, Sediments, Water, and Energy, University of Massachusetts, Amherst, MA, October 21.

Butler, EL; Hengemihle, WJ; Brown, ME; Biemer, TS. 2006, 2005. "Better Litigating Through Chemistry." Invited Speaker. Presented to the Philadelphia Bar Association, September 29, 2005. Presented to the Boston Bar Association, October 6, 2005. Presented to the Pittsburgh Bar Association, April 20, 2006.

Butler, EL. 2004. "Exposure and the Age Dating of Chemical Plumes: Organics." Invited Speaker. Presented to Mealey's Water Contamination Conference, Pasadena, CA, January 26-27.

Butler, EL. 2003. "Contemporary Archeology (Garbology) – Use in Dating Environmental Activities: Case Studies." Invited Speaker. Presented to the International Society of Environmental Forensics Workshop, Environmental Forensics: Theory, Application, and Case Studies, Honolulu, HI, April 14-15.

Butler, EL; Martin, R; Slagle, C; Shea D. 2002. "Arsenic Geochemistry: Ponding, Slime, Iron and Elevated Arsenic in Groundwater." Platform presentation to Arsenic session of the 18th Annual International Conference on Contaminated Soils, Sediments, and Water, University of Massachusetts, Amherst, MA, October 21-24.

Butler, EL. 2002. "The Forensic Toolbox: Techniques for Determining Liability and Apportioning Blame." Invited Speaker. Presented to the Environmental Forensic Chemistry session of the 224th American Chemical Society (ACS) National Meeting – Division of Chemistry & the Law, Boston, MA, July.

Butler, EL. 2001. "Dioxin sampling: When, where, and how." *Trends in Risk & Remediation* Winter.

Butler, EL; Denly, E. 2001. "Implementing New Mandatory TPH Analytical Protocols Associated with Risk Based Cleanup Levels: The Massachusetts Experience." Platform presentation to the First International Congress on Petroleum Contaminated Soils, Sediments and Water, Imperial College of Science, Technology and Medicine, London, UK, August 14-17.

Butler, EL; Wait, AD; Douglas, G; Brown, J. 2001. "Tiered Analytical Approach is a Versatile and Cost Effective Tool in Answering Forensic Questions." Poster presentation to the First International Congress on Petroleum Contaminated Soils, Sediments and Water, Imperial College of Science, Technology and Medicine, London, UK, August 14-17.

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Eric L. Butler, Ph.D.
October 30, 2025
Testimony Experience (in the last 4 years)

1. Provided sworn deposition testimony for plaintiff, National Railroad Passenger Corporation (a.k.a. Amtrak), regarding the nature and extent of polychlorinated biphenyl (PCB) contamination of soils at Penn Station, New York City, NY. The case was Amtrak *vs* APU in the United States District Court, Southern District of New York. (Case number 1:23-cv-03784-JSR).

Exhibit 12

EXPERT REPORT

OF

CHRISTINA M. BRUNK, CFA, CRE, FRICS

November 3, 2025



Overview and Qualifications

1. I, Christina M. Brunk, CFA, CRE, FRICS, Managing Director with Alvarez & Marsal Disputes and Investigations, LLC ("A&M"), submit this report at the request of Hunton Andrews Kurth LLP and Parker Poe Adams & Bernstein LLP ("Counsel"), counsel for Duke Energy Carolinas, LLC and Duke Energy Corporation ("Client" or "Defendants") in the matter of *Clyde Marcus Jones, II, et al. v. Duke Energy Corporation and Duke Energy Carolinas, LLC,* currently pending in the United States District Court for the District of South Carolina, Columbia Division.

2. I am a Managing Director in A&M's Real Estate and Environmental Economics practice and have been with A&M for more than 18 years. Before A&M, I was with Accounting, Economics, and Appraisal Group, after beginning my career with PricewaterhouseCoopers. A&M provides consulting services to public and private sector clients around the world. I specialize in the evaluation of complex economic and real estate damages claims, development and implementation of Value Assurance Programs and other real estate solutions, and the development and application of geographic information systems (GIS).

3. I have extensive experience in applying financial and economic principles to relevant market data in matters where real property may be impacted by adverse environmental conditions. I have advised clients throughout the United States in evaluating the potential effects of alleged air, soil, and groundwater contamination and other potential disamenities on property values as well as use and enjoyment and potential contribution to alleged lost profits and lost business opportunity. I have assisted in the various stages of complex and class action matters, including evaluating class certification issues relating to real estate impacts and alleged damages, identifying and modeling settlement alternatives (including Value Assurance Programs), and serving as a court-appointed Settlement Administrator. I regularly use GIS to assist clients in understanding the relationships between claimant locations and other pertinent data, evaluating potential class boundaries, and analyzing large volumes of real estate and environmental data.

4. As an experienced real estate consultant, I have analyzed property characteristics, locational data, and real estate market data, presenting my findings at deposition and trial, at mediation, at public meetings held by state environmental regulators, and, in my role as court-appointed Settlement Administrator, in reports to the court. I have written and spoken on the topics of real estate value and real estate damages in forums such as the American Bar Association and The National Association of Certified Valuators and Analysts.

5. In my role as administrator of Value Assurance Programs, I routinely analyze real estate market data, provide orientation and training for real estate agents and real estate appraisers, and evaluate appraisal reports, including the data, analysis, and conclusions therein. I have developed, implemented, and administered Value Assurance Programs in local markets across the United States, including Alabama, California, Louisiana, Michigan, Mississippi, New Hampshire, New York, Oklahoma, Ohio, and Pennsylvania.

6. As a member of leading national and international associations of real estate professionals, I hold the following professional designations: Chartered Financial Analyst (CFA), Counselor of Real Estate (CRE), and Fellow of the Royal Institution of Chartered Surveyors (FRICS). I am also an Affiliate Member of the Appraisal Institute.[1]

7. To earn his or her CFA designation, a candidate must satisfy specific education and experience requirements and demonstrate mastery of a comprehensive body of knowledge, including market forces of supply and demand, economic growth and development, effects of regulations, time-series analysis, regression analysis, real estate, real assets (including infrastructure, timber and farm land), risk management, and ethical and professional standards. Once designated, a CFA Charterholder must adhere to the CFA Institute Code of Ethics and Standards of Professional Conduct and attest to them annually.[2]

8. The CRE designation, held by approximately 1,000 professionals worldwide, recognizes real estate practitioners "for their expertise, experience, and ethics in providing advice that influences real estate decisions. . . . [The CRE designation] acknowledges a member's status as one of the most trusted professionals in the field of real estate." Awarded by invitation after a substantive application and interview process, the CRE designation "demonstrates peer recognition for Ethics, Experience, Expertise, Influence and Prominence in real estate and real estate-related counseling and advisory services."[3]

9. The Royal Institution of Chartered Surveyors (RICS) is a "globally recognized professional body . . . dedicated to promoting and enforcing 'the highest professional standards in the development and management of land, real estate, construction and infrastructure . . . [which] provides a foundation for confident markets, pioneers better places to live and work and is a force for positive social impact.'" To earn FRICS designation, the member must satisfy specific experience and education criteria and act to advance the interests of the organization, the profession, and the public. Of the 134,000 RICS members worldwide, only 20% earn designation as a Fellow (FRICS).[4]

10. I earned a Master of Arts in Finance from the University of Alabama in 1999, a Bachelor of Science in Commerce and Business Administration (Finance) from the University of Alabama in 1998, and a Post-Baccalaureate Certificate in Geographic Information Systems from Pennsylvania State University in 2007.

11. I have held an active Real Estate Salesperson license since 2007. I have taken over 300 hours of professional real estate education, including Basic Appraisal Principles, Basic Appraisal Procedures, Misrepresentation and Case Studies, Demystifying Appraisals, A Day in the Life of a Buyer Agent, Risk Management, Short Sales and Foreclosures, Preparing a Listing Agreement: An In-Depth Look, and Construction Details and Trends.

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[1] I am not a licensed appraiser in the State of South Carolina nor does this report constitute an appraisal or appraisal review.
[2] CFAinstitute.org
[3] CRE.org; https://cre.org/become-a-member/qualifications/
[4] RICS.org

12. My curriculum vitae, including my testimony in the past four years, is Exhibit A to this report. A&M is being compensated at the hourly rate of $770 for my work in this matter.

13. In this matter, Plaintiffs alleged that Defendants, through a mosquito control program, contaminated Lake Wateree with polychlorinated biphenyls, also known as PCBs, causing harm to every waterfront property:

> "Plaintiffs file this class action on behalf of all waterfront residents of Lake Wateree, each of whom hold littoral and/or riparian rights in their properties and who experienced and will continue to experience interference and infringement with their right to peaceful enjoyment of their properties, permanent diminution in value, as well as other injuries caused by Defendants' conduct."[5]

> "As a result of the Duke Energy Defendants' systematic negligence in designing, maintaining, managing, and executing their Mosquito Control Program and spreading, disposing, failing to warn, and failing to mitigate, Defendants have caused permanent harm to Plaintiffs and the Class members, including diminution of property values, and degradation of natural resources."[6]

14. It is my understanding that the current questions being evaluated include whether common issues predominate over individual issues within the proposed class and whether the proposed class representative is typical of the proposed class. As a real estate expert in this matter, I was asked to consider these questions with respect to evaluating the potential for real estate damages due to property value diminution and loss of use and enjoyment of real property due to environmental contamination.

Summary of Opinions

15. My opinions derive from my work in similar matters, my understanding of valuation and appraisal literature, and my application of accepted methodologies in analyzing potential environmental damage to real property. Based upon my research and analysis as a real estate expert and as described in this report, I conclude to a reasonable degree of professional certainty:

- Opinion 1: The value of a property cannot be determined based upon common issues on a class-wide basis because a property's value is driven by the property's individual characteristics, how those characteristics interplay with each other and the characteristics of surrounding properties, and the value that an owner or potential purchaser places on those characteristics.

[5] First Amended Complaint, para. 16
[6] First Amended Complaint, para. 151

- Opinion 2: When evaluating potential property value diminution due to alleged environmental contamination, individual real property and property owner issues are more important considerations than any common issues.

- Opinion 3: Economic damages related to real estate impacts (including property value diminution or loss of use and enjoyment) can be accurately and adequately determined only on an individual property and individual owner basis.

- Opinion 4: There is no market-based evidence of class-wide property value diminution or loss of use and enjoyment.

16. In Opinion 1, I outline the many property and neighborhood characteristics, unique to a particular property at a particular point in time, that drive both unimpaired value as well as any impact to that value.

17. In Opinion 2, I discuss in greater detail the individual factors that predominate in a proper analysis of property-specific physical impact, property value diminution (i.e., cost effects, use effects, and risk effects), and causation.

18. In Opinion 3, I describe the individual issues that predominate with regard to quantification of real estate damages (if any) and why real estate damages must be calculated on an individual property and individual owner basis.

19. Finally, in Opinion 4, I include the results of my preliminary market analysis and research that there is no market-based evidence of class-wide property value diminution, or loss of use and enjoyment, in the proposed class area.

Tasks and Data Sources

20. In reaching these opinions, I, or those assisting me:

- Conducted a site visit on October 2, 2025;
- Reviewed the First Amended Complaint and other case documents;
- Gathered and analyzed demographic, property, and sales data;
- Reviewed relevant professional literature, standards, and guidance;
- Consulted with local appraiser, Woody W. Willard, Jr.;
- Reviewed other documents and data as outlined in this report; and
- Summarized my analyses and findings in this report.

21. A list of data and documents that I relied upon in forming my opinions is attached in Exhibit B.

Case Summary

Plaintiffs' Proposed Class Definition

22. According to the First Amended Complaint, filed November 21, 2024, Plaintiffs have proposed a class comprised of "[a]ll persons or entities who currently have ownership of any real waterfront property on Lake Wateree" ("proposed class").[7] The original Complaint was filed February 16, 2024.[8]

23. Plaintiffs further note, "Plaintiffs and the Class are property owners with waterfront property located on Lake Wateree. As such, Plaintiffs and the Class hold littoral and/or riparian rights relating to Lake Wateree."[9]

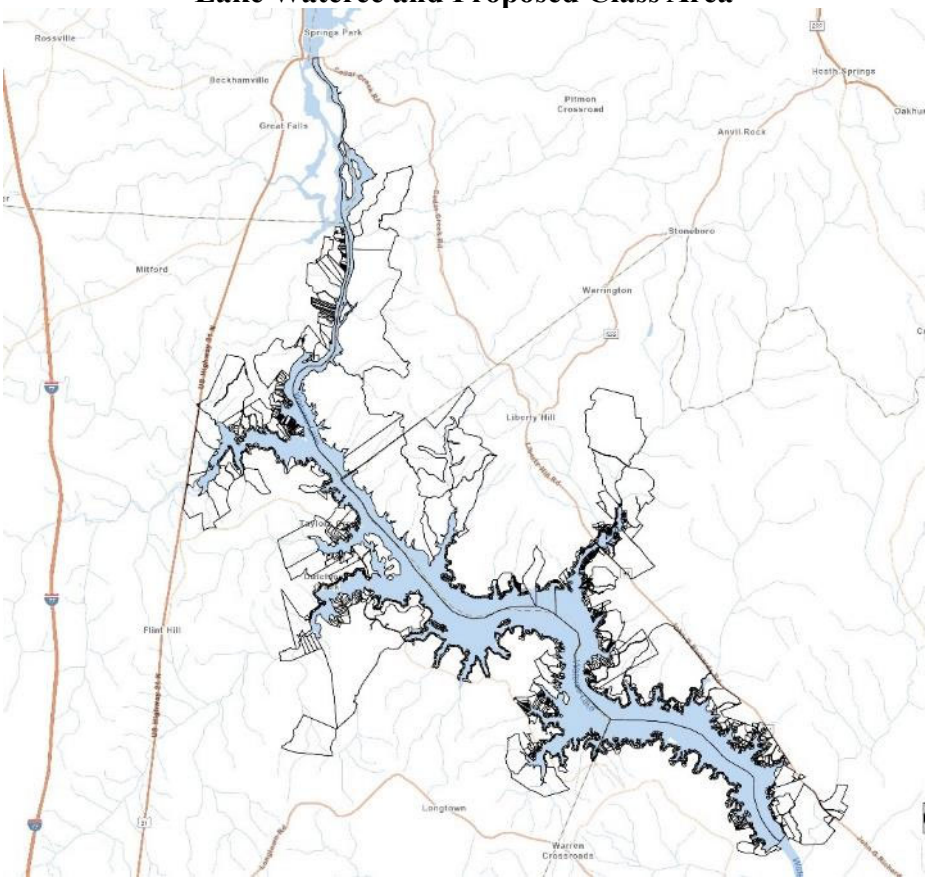
24. A map of Lake Wateree and the proposed class is shown below.

[7] First Amended Complaint, para. 121. Plaintiffs specifically exclude the following from the class, "Current and former officers and directors of the Defendants; members of the immediate families of the officers and directors of the Defendants; the Defendants' legal representatives, heirs, successors, assigns, any entity in which either of them has or had a controlling interest; any federal, state, or local governmental agencies; Class Counsel or any person retained or working on behalf of Class Counsel in furtherance of the litigation, any judges who have decided or are assigned to decide some or all issues in this case any persons related to a judge in a manner that would disqualify the judge from hearing the case; and any chambers staff working for the assigned judge or other courthouse staff who perform tasks relating to this matter."

[8] Jones, et al. v. Michael Callahan, personally and as President of Duke Energy's South Carolina Operations, et al., Class Action Complaint and Demand for Jury Trial, February 16, 2024, In the Circuit Court of Common Pleas, Kershaw County, South Carolina

[9] First Amended Complaint, para. 10

Figure 1
Lake Wateree and Proposed Class Area



25. On October 1, 2025, Plaintiffs produced a purported list of all properties in the proposed class.[10] According to Plaintiffs, the list includes "2,625 privately owned properties" that "front Lake Wateree" and demonstrates that "the Class is readily identifiable."[11]

26. Comparing this list to county parcel data and the boundary of the Catawba-Wateree Reservoir (i.e., Lake Wateree) illustrates that there are complexities and challenges even in properly identifying the proposed class:

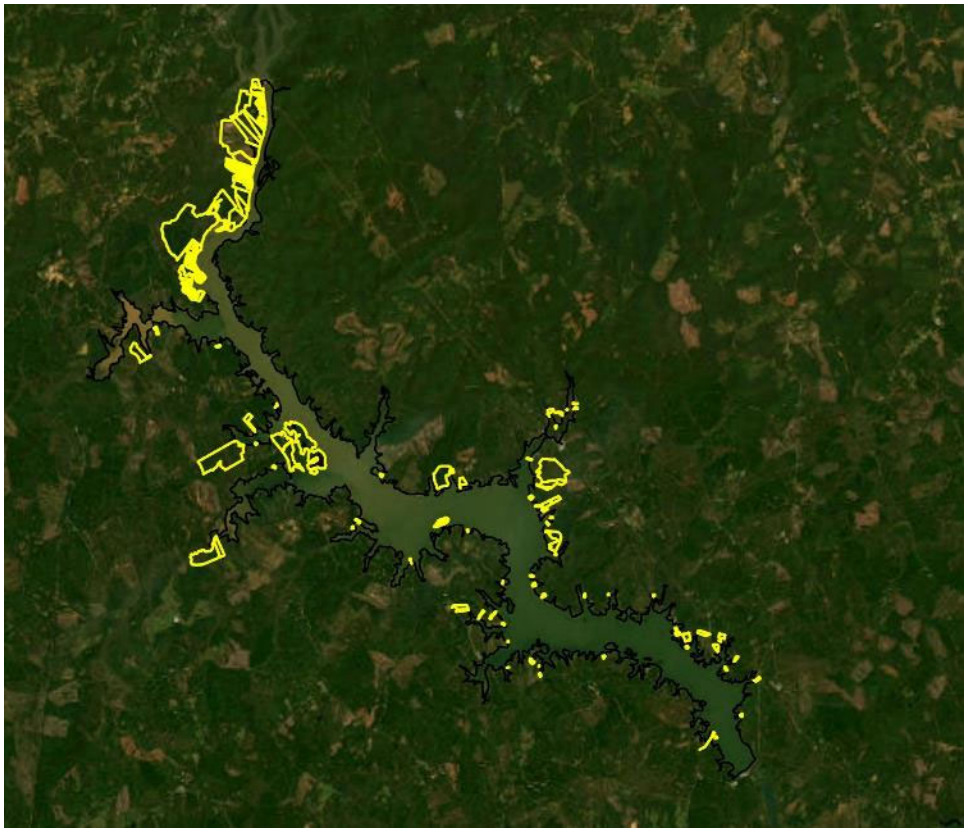
- Plaintiffs' list includes 2,622 entries (not 2,625 as stated);
- Plaintiffs' list excludes 195 waterfront, privately owned parcels on Lake Wateree, including the proposed class representative properties (Jones and Phillips);
- Plaintiffs' list includes 15 duplicate entries, i.e., properties that appear twice on the list (e.g., "2,477 Harbor View Rd, Camden SC" and "2477 Harbor View Rd, Camden SC 29020");

[10] Exhibit B "Waterfront Property Addresses" to Plaintiffs' Memorandum in Support of Motion for Class Certification
[11] Plaintiffs' Memorandum in Support of Motion for Class Certification, p. 2, 13-14

- Plaintiffs' list includes an entry for "Lancaster County" that cannot be matched to any specific property meeting the proposed class definition;
- Plaintiffs' list includes 15 properties owned by Duke Energy and six properties owned by government entities, both of which are excluded from the proposed class definition;
- Plaintiffs' list includes at least seven properties that are not waterfront or do not intersect Lake Wateree; and
- Plaintiffs' list includes 13 addresses that do not appear valid and cannot be matched to any waterfront property at Lake Wateree or in the county assessor data.

27. The 195 waterfront parcels missing from the Plaintiffs' list are illustrated below.

Figure 2
Privately-Owned Waterfront Parcels Missing from Plaintiffs' Class List



Proposed Class Representative

28. In this matter, Plaintiffs have designated one named plaintiff, Clyde Marcus Jones ("Proposed Class Representative").[12] According to the First Amended Complaint, "At all times relevant to this complaint, Plaintiff Clyde Marc Jones has been a citizen of Kershaw County, in the State of South Carolina, with a primary address in Camden, South Carolina on Lake Wateree."[13]

29. According to public records, Mr. Jones' primary residence is 410 Hampton Street, located approximately 7.9 miles from Lake Wateree, where he has lived since 2001.[14] Per his testimony, Mr. Jones is not making a claim for the Hampton Street property.[15]

30. Mr. Jones is also a partial owner of 1778 Sailing Club Road, Camden, South Carolina, located on Lake Wateree, which is the property he is making a claim for in this lawsuit ("the Jones property").[16]

31. According to county records, 1778 Sailing Club Road is a single-family home built in 2003 with approximately 2,447 total square feet on 0.98 acres.[17] It includes approximately 190 feet of shoreline on Lake Wateree including a sandy beach and a dock. It is co-owned by Mr. Jones (75%) and his daughter Kathryn J. Demetri (25%).[18] While Ms. Demetri lived briefly in the property in 2024-2025, the property has been used as a second home, vacation property, and rental property.[19] Ms. Demetri is not a plaintiff in this lawsuit.[20]

32. Mr. Jones, his wife, his parents, and his sister and her husband purchased the property on Sailing Club Road in 2001 as a vacant lot.[21] According to Mr. Jones, they were drawn to the beautiful lot and the fact that it was waterfront on Lake Wateree.[22] Each couple initially owned one-third of the property, and Mr. Jones does not recall how much he and his wife contributed towards the purchase price or the subsequent construction of the house.[23]

33. In June 2020, following the passing of his father in February 2016, Mr. Jones' mother and brother-in-law transferred their thirds to Mr. Jones for $46,000.[24]

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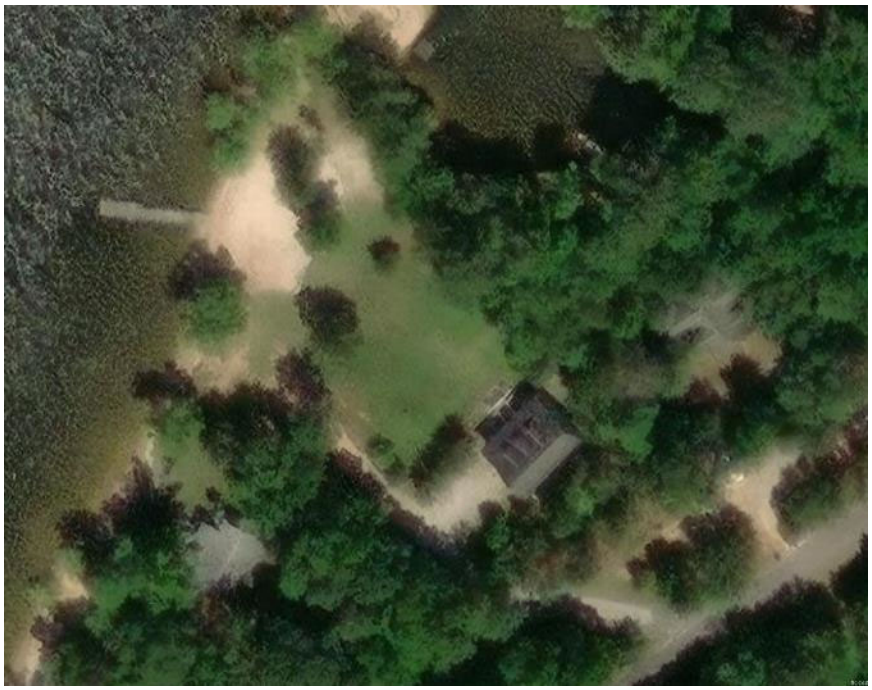
[12] It is my understanding Plaintiffs originally included additional class representatives, Dennis and Deborah Phillips, who sold their Lake Wateree property in May 2025 and are no longer participating in this lawsuit. The sale of the Phillips property is addressed in Opinion 4 below.
[13] First Amended Complaint, para. 17 (emphasis added)
[14] Kershaw County Assessor Data; Jones Deposition, p. 10-11
[15] Jones Deposition, p. 16
[16] Jones Deposition, p. 10-12, 16-17
[17] Kershaw County Assessor
[18] Jones Deposition, p. 45-49
[19] Jones Deposition, p. 27; https://www.vrbo.com/1127295
[20] Jones Deposition, p. 20, 56-57
[21] Jones Deposition, p. 17
[22] Jones Deposition, p. 21-22
[23] Jones Deposition, p. 18-19
[24] Jones Deposition, p. 26-28

34. In December 2024, Mr. Jones transferred a 25% ownership interest to his daughter Kathryn.[25]

35. The Jones property is illustrated in Figure 3.

Figure 3
1778 Sailing Club Road[26]





[25] Deed 12/6/2024, Clyde M. Jones, II for sum of $5 to Kathryn Jones Demetri, an undivided 25% interest
[26] https://www.vrbo.com/1127295 (All property photos in the report were obtained during site visit unless alternative source is specified)

Site History and Area Analysis

Duke Energy

36. According to its website,

> "Duke Energy (NYSE: DUK), a Fortune 150 company headquartered in Charlotte, N.C., is one of America's largest energy holding companies. The company's electric utilities serve 8.6 million customers in North Carolina, South Carolina, Florida, Indiana, Ohio and Kentucky, and collectively own approximately 55,100 megawatts of energy capacity. Its natural gas utilities serve 1.7 million customers in North Carolina, South Carolina, Tennessee, Ohio and Kentucky."[27]
>
> "As one of the largest energy companies in the United States, Duke Energy is at the forefront of new beginnings. Duke Energy's history began more than a century ago when James B. Duke led a group that built a system of lakes and dams along the Catawba River to generate electricity that would drive the economic growth of the Piedmont Carolinas."[28]
>
> "Today, Duke Energy is dedicated to providing clean, reliable and affordable energy in seven states in the Southeast and Midwest."[29]

37. Currently, Duke Energy and its subsidiaries employ 27,600 people.[30]

Lake Wateree

38. A corporate predecessor of Duke Energy Corp. created Lake Wateree in 1920 by damming the Wateree River for use as a reservoir for the Wateree Hydroelectric Station.[31] Duke Energy subsequently maintained and managed the lake.[32] From approximately 1923 to 2016, Duke Energy Carolinas (or its predecessors) operated a mosquito control program on Lake Wateree:

> "The program, which operates from May through the end of October, is the oldest continuous environmental program of any utility in the U. S and one of the first in North America. Two-person boat crews seek out specific mosquito breeding habitats along the 1,700 miles of Duke Energy's reservoir shoreline and apply a safe and government-approved larvicide that attacks only mosquito larvae."[33]

39. Located approximately 30 miles northeast of Columbia, South Carolina, Lake Wateree is the largest of the Catawba-Wateree Lakes in South Carolina, covering 13,025 acres and 216

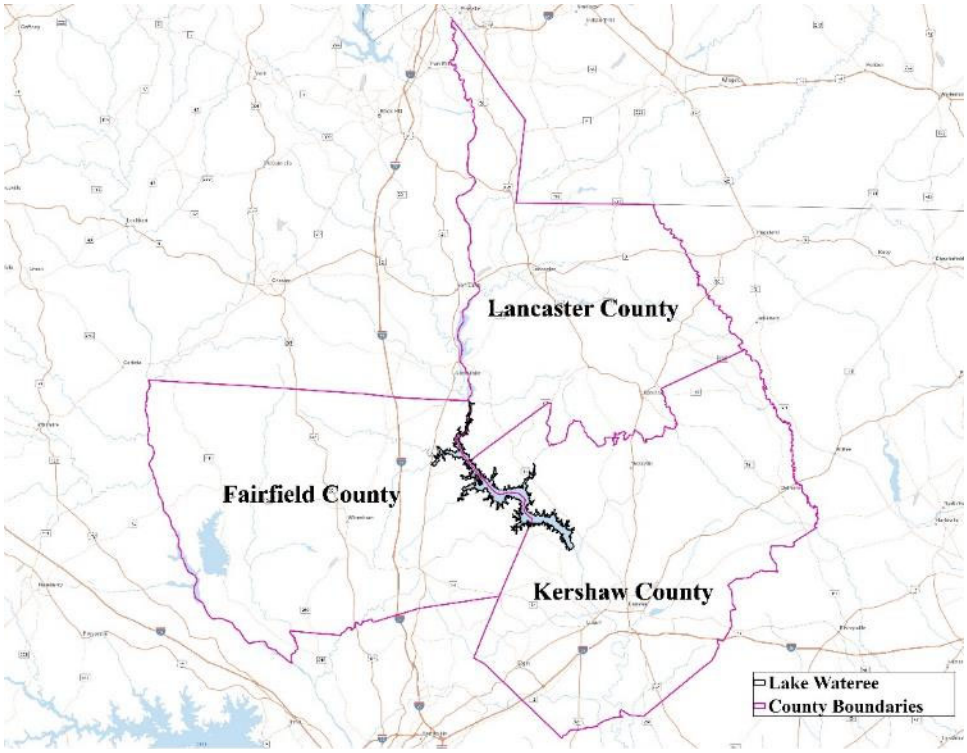
[27] https://www.duke-energy.com/our-company/about-us
[28] https://www.duke-energy.com/our-company/about-us/our-history
[29] https://www.duke-energy.com/our-company/about-us/our-history
[30] https://investors.duke-energy.com/overview/default.aspx
[31] https://www.dnr.sc.gov/lakes/wateree/description.html
[32] https://www.duke-energy.com/community/lakes/hydroelectric-relicensing/catawba
[33] https://news.duke-energy.com/releases/duke-energy-mosquito-control-program-in-its-90th-year

miles of shoreline.[34] Surrounded by Fairfield County, Kershaw County, and Lancaster County, Lake Wateree has 14 access points, including eight public boat access areas on the lake and one below the dam, maintained by Duke Energy and the South Carolina Department of Natural Resources (SCDNR).[35] Today, Lake Wateree is a destination for campers, fishermen, bird watchers, and recreational boaters.[36]

> "Lake Wateree is one of South Carolina's oldest man-made lakes, known for its bass, catfish, bream and crappie fishing. With more than 13,000 surface acres and 242 miles of shoreline, the lake is a year-round favorite of campers, fishermen and recreational boaters. Public access is provided through a number of public boat ramps and Lake Wateree State Park."[37]

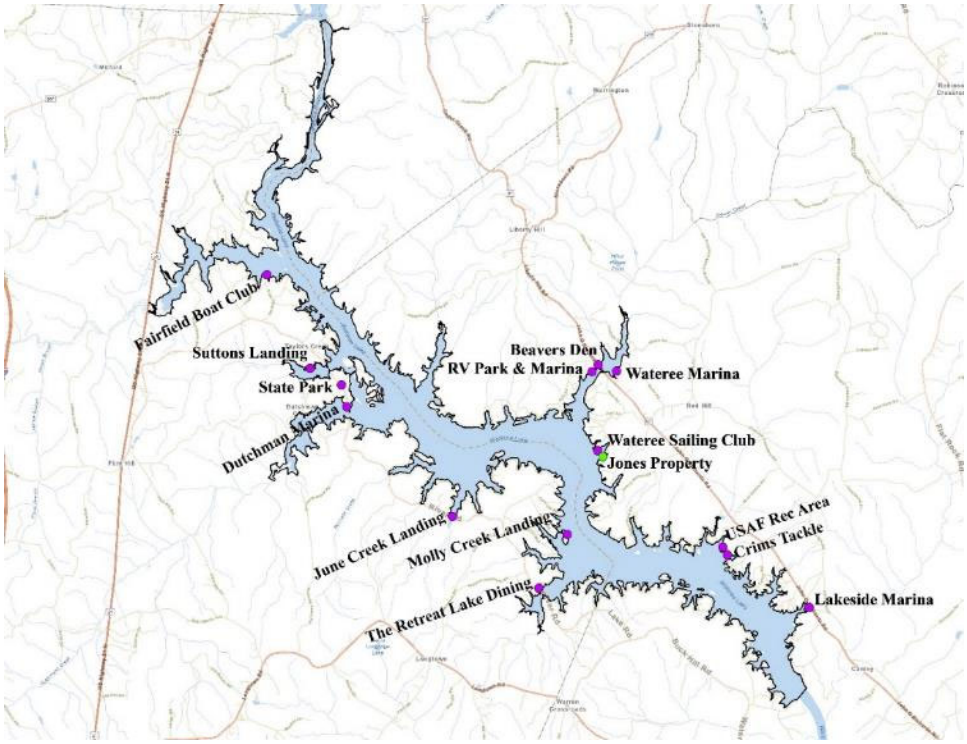
40. A map of Lake Wateree and the surrounding counties is shown below.

Figure 4
Lake Wateree and Surrounding Counties



[34] https://www.dnr.sc.gov/lakes/wateree/description.html
[35] https://www.sciway.net/city/lake-wateree.html; https://www.dnr.sc.gov/lakes/wateree/description.html
[36] https://www.kershawcountychamber.org/lake-wateree/
[37] https://southcarolinaparks.com/see-and-do/lakes

Figure 5
Lake Wateree Points of Interest



Kershaw, Fairfield, and Lancaster Counties

41. Established in 1785, Fairfield County is located approximately 25 miles north of Columbia, South Carolina. Located in the upper Piedmont region of South Carolina, Fairfield County is known for its "pines, ponds, and pastures" and a place for people to enjoy a "serene country atmosphere."[38] Fairfield County is also known for its local attractions and events, including its most popular "Rock Around the Clock Festival" which features music acts and entertainers who "rock" around the oldest continuously running clock in the United States.[39] From its beginning in agriculture and quarrying, Fairfield County has grown into a hub for advanced manufacturing and logistics.[40] With a population just under 20,000 residents, Fairfield County's direct access to I-77, I-20, and I-26 offers businesses the ability to connect to major markets and desirability for investments, including from global companies such as Element Electronics, Mekra Lang, Isola USA, Oldcastle APG, and Bomag Fayat Group.[41]

42. With a population just over 68,000 and encompassing 726 square miles, Kershaw County is home to some of South Carolina's oldest prehistoric sites and the state's oldest inland city,

[38] https://www.fairfieldsc.com/community
[39] https://www.fairfieldsc.com/community/things-to-do
[40] https://www.fairfieldsc.com/community
[41] Esri Business Analyst; https://www.fairfieldsc.com/community

Camden.[42] Named for Revolutionary War patriot Joseph Kershaw, Kershaw County was known as a popular winter community for wealthy Northern families after the Civil War, due to the area's climate, accessibility, and "inherent beauty."[43] Kershaw County is known for its equine activity, as it plays a major role in the economy and earned it the nickname the "Steeplechase Capital of the World."[44] Kershaw County is located 124 miles from the Port of Charleston and halfway between New York and Miami, offering a transportation advantage to other areas.[45] Kershaw County's main industries include manufacturing and distribution, nonwovens and textiles, and agriculture.[46]

43. Located in the north central region of South Carolina and approximately 40 miles south of Charlotte, North Carolina, and 60 miles north of Columbia, South Carolina, Lancaster County covers approximately 549 square miles and has a current population of almost 108,000.[47] Named after Lancaster County, Pennsylvania, Lancaster County was the site of Revolutionary and Civil War battles and is known as the birthplace of President Andrew Jackson.[48] Lancaster County is part of the I-77 Alliance, a five-county corridor that offers a "diversified manufacturing base with an exploding presence in the electric vehicle (EV) industry."[49] Today, Lancaster County's top employers include Red Ventures, Movement Mortgage, MUSC Health Lancaster Medical Center, Continental Tire of the Americas, and Nutramax Laboratories.[50]

44. A demographic summary of the three counties is shown in Figure 6.

[42] https://www.kershawsheriff.com/kc-history; Esri Business Analyst
[43] https://www.kershawcountychamber.org/area-history/
[44] https://www.kershawcountychamber.org/area-history/
[45] https://kershawcountysc.org/doing-business-here/transportation/
[46] https://kershawcountysc.org/area-industries
[47] https://www.lancastercountysc.gov/453/Our-History; Esri Business Analyst
[48] https://www.achp.gov/preserve-america/community/lancaster-county-south-carolina
[49] https://i77alliance.com/
[50] https://i77alliance.com/region/explore-our-five-counties/lancaster-county/

Figure 6
Demographic Summary

Variable	Fairfield County	Kershaw County	Lancaster County
2010 Population	23,956	61,697	76,652
2025 Population	19,988	68,283	107,559
Population Change, 2010-2025	-16.6%	10.7%	40.3%
2025 Median Age	50.8	42.9	42.9
2025 Unemployment	6.4%	4.9%	5.0%
2025 Median Household Income	$47,839	$70,687	$78,779
2025 Housing Units	10,784	31,025	47,654
Owner Occupied	65.6%	74.0%	74.7%
Renter Occupied	19.2%	16.3%	18.2%
Vacant	15.2%	9.7%	7.1%
2025 Median Home Value	$156,888	$239,655	$373,336

Overview of Appropriate and Accepted Methodology for Evaluating Potential Property Value Diminution and Real Estate Damages

45. Plaintiffs' claims of property value diminution and loss of use and enjoyment are potential damages which should be analyzed using generally accepted methodologies.[51] Accordingly, Plaintiffs' position that these asserted damages are appropriate for class treatment should be evaluated in light of all the elements necessary to develop accurate and reliable damages opinions.

46. Together, the appraisal standards and guidance, along with applicable valuation literature, prescribe the steps for producing a credible and reliable opinion about property value diminution, if any. According to Advisory Opinion 9, Guide Note 6, and the applicable literature, each step must be supported by relevant data specific to the individual owner and

[51] The Uniform Standards of Professional Appraisal Practice ("USPAP") are the generally accepted standards for professional appraisal practice in North America, and the Advisory Opinions to USPAP "illustrate the applicability of USPAP in specific situations." http://www.appraisalinstitute.org/professional-practice/ethics-and-standards/standard-of-professional-appraisal-practice/. Advisory Opinion 9 addresses "The Appraisal of Real Property That May Be Impacted by Environmental Contamination." The Appraisal Foundation, USPAP 2024 Edition (Effective January 1, 2024), Advisory Opinion 9, p. 18. According to Real Estate Damages (2016), the principles of Advisory Opinion 9 are generally applicable to analyzing all detrimental conditions (p. 313). In addition, the Appraisal Institute developed and adopted Guide Notes to explain how the requirements of the Standards of Professional Practice may apply in specific situations. Guide Note 6 addresses "Consideration of Hazardous Substances in the Appraisal Process." https://www.appraisalinstitute.org/insights-and-resources/resources/standards-of-professional-practice/guide-notes

property at issue, not unsupported opinion or judgment. These property-specific steps include:

- Determining physical impact, if any;[52]
- Evaluating cost, use, and risk effects (i.e., the components of potential property value diminution), if any;[53]
- Establishing causation of property value diminution, if any;[54] and
- Quantifying damages, if any.[55]

47. Each step involves critical factors that cannot be evaluated using common issues on a class-wide basis but can only be properly considered and accounted for on an individual property and individual owner basis. Failure to properly address the myriad individual issues that affect property value (and any potential impact to that value) will lead to damages claims that are unreliable and incorrect.

48. The individual, market-based nature of this inquiry is inherent in the underlying concept of property value:

> "The economic concept of value is not intrinsic in the commodity, good, or service to which it is ascribed. Rather, it is created in the minds of the individuals who make up the market. The interplay of relationships that create value is complex. Values change when the factors that influence value change. . . . [Utility, scarcity, desirability, and effective purchasing power] must be present for a property to have value. The four factors interact in the marketplace to influence the relationship of supply and demand. A market's perception of value can affect real estate prices swiftly and significantly. For example, when mortgage interest rates rise, the number of potential buyers who can afford the higher rates declines, so effective demand declines."[56]

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[52] "In evaluating a contaminated property, the first issue centers on the nature of the problem. Is the property physically contaminated? . . . The extent of the contamination (e. g., its toxicity, persistence, flammability, friability), must then be documented." James A. Chalmers and Scott A. Roehr, "Issues in the Valuation of Contaminated Property," The Appraisal Journal, January 1993, p. 29. See also Advisory Opinion 9 "Relevant Property Characteristics" that should be considered when evaluating potential impacts from detrimental conditions, including "the status of the property with respect to regulatory compliance requirements," "the remediation lifecycle stage (before, during or after cleanup) . . ." and "potential limitations on the use of the property," The Appraisal Foundation, USPAP 2024 Edition, Advisory Opinion 9, p. 20-21

[53] Guide Note 6 defines property value diminution as "Cost Effects (Remediation and Related Costs) + Use Effects (Effects on Site Usability) + Risk Effects (Environmental Risk/Stigma)", https://www.appraisalinstitute.org/insights-and-resources/resources/standards-of-professional-practice/guide-notes

[54] "It is also important to keep in mind that the observation of value diminution does not automatically reflect causality with respect to a detrimental condition." Real Estate Damages (2016), p. 314

[55] "Damage to value is a time-sensitive, ownership-specific issue. Though the value of a property may decrease because of market recognition of a disamenity, a property owner does not automatically suffer damage." Albert R. Wilson, "Real Property Damages and Rubber Rulers", Real Estate Issues, Summer 2006, p. 26

[56] The Appraisal of Real Estate, 15th Edition, p. 19

49. Additionally, it is important to recognize that real property ownership is more than the right to sell.[57] An owner's "bundle of rights" includes the right to use, sell, lease, enter, occupy, bequeath, do nothing, encumber, give away or enjoy a property.[58] Each individual right has value.[59] Thus, the value of a property depends not only on its physical characteristics but also on the accompanying rights.[60] Because each right in the owner's bundle of rights has value and contributes to the overall value of the property, the loss of one or more specific right will affect the value of the property, if the market recognizes damage attributable to the loss of such rights.[61] Thus, if an owner's bundle of rights is reduced, the corresponding impact, if any, will be reflected by a reduction in property value.[62] As discussed above, to determine if impact to value has occurred, physical impact must be established, impact to property value must be determined, and a causal link between the two must be established.

Opinion 1: The value of a property cannot be determined based upon common issues on a class-wide basis because a property's value is driven by the property's individual characteristics, how those characteristics interplay with each other and the characteristics of surrounding properties, and the value that an owner or potential purchaser places on those characteristics.

50. The value of a property is driven by its individual characteristics, how those characteristics interplay with each other and the characteristics of surrounding properties, and the value that an owner or potential purchaser places on those characteristics. According to the literature,

> "The factors that determine the value of a real property are complex and interconnected. Each property has unique characteristics, such as location, size, and topography. Just like people, no two properties are alike . . ." [63]

51. An analysis of property-specific factors as they pertain to a property's unimpaired value and any potential impacts from alleged environmental contamination (i.e., detrimental condition) "ensures that the specific characteristics of the subject property are thoroughly understood, particularly as they might relate to either vulnerability to or insulation from the particular effects of the detrimental condition."[64]

52. Key property-specific characteristics that affect property value and any potential impact to property value may include the following:

- Land use,
- Property characteristics, condition and maintenance,

[57] James A. Chalmers and Scott A. Roehr, Issues in the Valuation of Contaminated Property, The Appraisal Journal, January 1993, p. 39
[58] The Appraisal of Real Estate, 15th Edition, p. 4; Real Estate Damages (1999), p. 2-3
[59] The Appraisal of Real Estate, 15th Edition, p. 20, 59-60
[60] The Appraisal of Real Estate, 15th Edition, p. 59
[61] The Appraisal of Real Estate, 15th Edition, p. 59-60
[62] Real Estate Damages (2016), p. 25
[63] Real Estate Damages (2016), p. 74
[64] Real Estate Damages (1999), p. 35

- Shoreline type and length, water access, elevation and terrain,
- View,
- Property-specific environmental conditions, and
- Neighborhood factors.

Land Use

53. Land use is an important value consideration when determining the unimpaired value of a property, but also when quantifying the effects of environmental contamination:

> "Environmental contamination can also affect properties differently based on what type of land use is involved and where it is located. These types may include residential homeowner, residential rental property, property with a mobile home, industrial, public property, or commercial land uses such as office, retail, or hotel. In addition, raw land and agricultural land uses are potential categories."[65]

> "Thus, any attempt to resolve damages impacts on one property type based on impacts estimated on the basis of another would not be accurate and likely would result in an inequitable solution for one of the two categories of property interests."[66]

54. Unimpaired property value is driven by a property's highest and best use, which is a property-specific inquiry to determine the land use that is physically possible, legally permissible, financially feasible, and maximally productive. As a result, any potential impact to highest and best use must also be an individual inquiry:

> "Apart from the issue of cost of repair and who is responsible for it is the question of whether the detrimental condition has had enough of an impact on the use or utility of the property that the market would reflect a measurable discount, . . ."[67]

55. Property value diminution (if any) is affected not only by a property's own land use but by that of surrounding properties as well. There are nearly 2,800 waterfront properties at Lake Wateree, including both unimproved (i.e., vacant land) and improved properties. These include not only residential properties but also agricultural properties, commercial properties, and exempt properties such as those owned by religious organizations.[68] The varied land use in the proposed class is summarized in the table and maps that follow.

[65] Robert A. Simons, When Bad Things Happen to Good Property, Environmental Law Institute, 2005, p. 56
[66] Thomas O. Jackson, "Real Property Valuation Issues in Environmental Class Actions", The Appraisal Journal, Spring 2010, p. 142
[67] Real Estate Damages (2016), p. 25
[68] Land use classification was based on a review of available county data such as land use code, building type, square footage, year built, improvement value, and owner name.

Figure 7
Land Use in Proposed Class Area

Land Use	Total
Agricultural Improved	14
Agricultural Land	52
Commercial Improved	14
Commercial Land	15
Exempt Improved	6
Exempt Land	30
Residential Improved	2,174
Residential Land	477
Unknown	12
Total	**2,794**

56. Because the proposed class definition excludes certain waterfront property based on ownership, Figure 8 summarizes the waterfront properties that have been excluded from analyses of the proposed class and Figure 9 summarizes the varied land use of the remaining parcels that comprise the proposed class.

Figure 8
Parcels Within Class Area Excluded from Class Definition

Class Status	Total
No – Duke Energy	22
No – Government Owned	11
No – Plaintiff Counsel	1
Total	**34**

Figure 9
Land Use in Proposed Class

Land Use	Total
Agricultural Improved	14
Agricultural Land	52
Commercial Improved	13
Commercial Land	15
Exempt Improved	4
Exempt Land	3
Residential Improved	2,172
Residential Land	475
Unknown	12
Total	**2,760**

57. Although residential improved properties account for the majority (79%) of properties in the proposed class, they make up only 33.7% of the total acreage of the proposed class.

Figure 10
Class Parcels by Land Use and Lot Size (Acres)

Land Use	Parcel Count	Data Count	Min	Max	Avg	Total	% of Total
Agricultural Improved	14	14	4.3	1,377	187	2,619	12.9%
Agricultural Land	52	52	0.3	1,469	112	5,839	28.8%
Commercial Improved	13	13	1.6	217	23	300	1.5%
Commercial Land	15	15	1.3	695	113	1,695	8.3%
Exempt Improved	4	4	0.8	181	49	197	1.0%
Exempt Land	3	3	1.1	4	2	6	0.0%
Residential Improved	2,172	2,172	0.1	2,386	3	6,849	33.8%
Residential Land	475	475	0.1	477	6	2,789	13.7%
Unknown	12	12	0.6	1	1	8	0.0%
Total	**2,760**	**2,760**	**0.1**	**2,386**	**7**	**20,304**	**100.0%**

58. Land use is further illustrated by the improvement type found on each property, as demonstrated by the table and maps that follow.

Figure 11
Class Parcels by Land Use and Improvement Type

Land Use	Improvement Type	Total
Agricultural Improved	Single Family / Farm	14
Agricultural Land	None	52
Commercial Improved	Convenience/Retail Store	5
Commercial Improved	Outbuilding	2
Commercial Improved	Restaurant	3
Commercial Improved	Storage Warehouse	1
Commercial Improved	Recreation facilities	1
Commercial Improved	Real estate office	1
Commercial Land	None	15
Exempt Improved	Church	2
Exempt Improved	Camp / Recreation	3
Exempt Land	None	3
Residential Improved	Mobile Home	201
Residential Improved	Modular Home	6
Residential Improved	Outbuilding	99
Residential Improved	Single Family	1,866
Residential Land	None	475
Unknown	Unknown	12
Total		**2,760**

Figure 12
Land Use Map

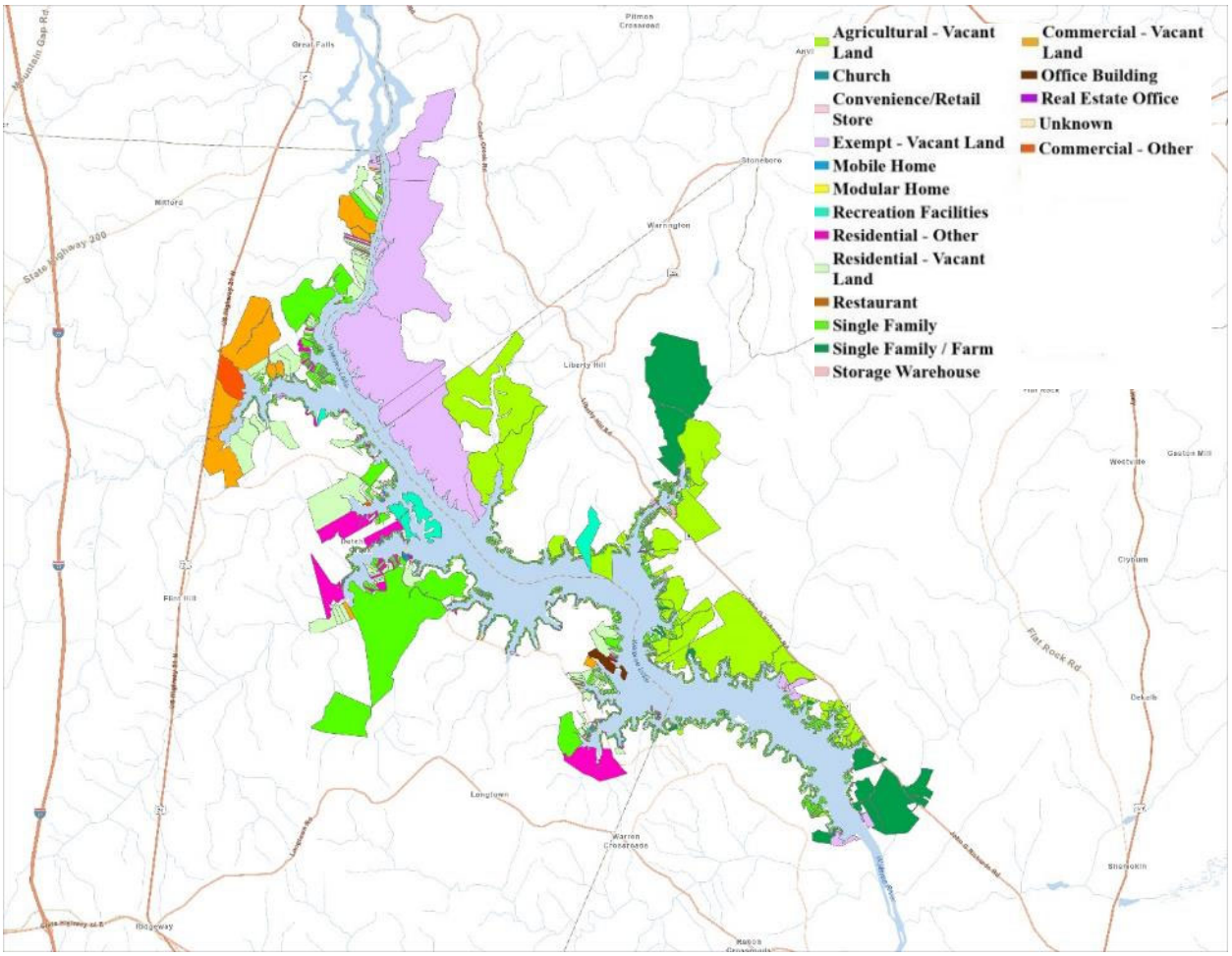


Figure 13
Land Use Maps – Zoomed



59. Specific examples of unique land uses throughout the proposed class area and their unique value-driving characteristics are highlighted below.

Agricultural Property

60. Agricultural land is prevalent throughout the proposed class area, but it is not readily or adequately described in the available public data. This is significant because this data is critical to both unimpaired valuation and evaluating potential property value diminution:

> "Rural or agricultural resource lands have specific characteristics that appraisers should investigate to describe these properties adequately."[69]

[69] The Appraisal of Real Estate, 15th Edition, p. 189

61. These characteristics include soil; water rights, drainage, and irrigation; climate; potential crops; environmental controls; mineral rights; unapparent environmental hazards; and other considerations.[70]

62. In particular, The Appraisal of Real Estate highlights and cautions about the property-specific environmental considerations and other issues, prevalent in rural or agricultural property, that must be addressed on an individual property basis when analyzing property value:

> "The location of wildlife habitats, the distances from populated areas, and the potential for recreational land uses are among the many other considerations to be analyzed in appraising agricultural land. Special tax provisions, such as reduced taxes on agricultural or resource properties, should also be studied."[71]

63. Figure 14 illustrates the unique characteristics of one of the agricultural properties in the proposed class.

Figure 14
1427 Buck Hill Landing Road





"A sportsman & Lake Wateree paradise! This custom built, energy efficient home offers 5 bedroom main house, 3 bedroom guest house above the detached workshop, pool house with salt water pool, RV carport, dock with covered boat slip, all nestled on more than 56 acres! . . . There is a complete guest house above a huge 36x56 shop! This space has 3 bedrooms, full kitchen, family room, full bath and closet with hook ups for w/d. The fully insulated shop is just below with tool bench, a half bath and 14 foot rolling door. Outdoor enthusiasts will love all the extra features that include raised garden beds, chicken coops, plus an underground greenhouse! The land and its superb location is what makes this property irreplaceable. Offering frontage on Wateree Dam Rd, Buck Hill and Ginko Trail. Keep your boat on the lift or launch it just down the street at the public landing. Ultimate privacy with rolling hills full of hardwoods, fruit trees and FULL of wildlife. . . ."[72]

[70] The Appraisal of Real Estate, 15th Edition, p. 189-191
[71] The Appraisal of Real Estate, 15th Edition, p. 191
[72] https://www.realtor.com/realestateandhomes-detail/1427-Buck-Hill-Landing-Rd_Ridgeway_SC_29130_M93747-99575; 1427 Buck Hill Landing Rd is categorized "0RFL" by Kershaw County – "regular, farm, legal residence"

Lake Wateree State Park

64. Lake Wateree State Park, operated by the South Carolina State Park Service, includes approximately 238 acres on the northwest side of Lake Wateree in Fairfield County.[73] It is a significant resource to the Lake Wateree community, including a public boat ramp, canoe and kayak rentals, loaner fishing equipment, a park store/small grocery, in-water boat refueling, public swimming area, camp sites, picnic areas, playgrounds, walking and biking trails, and a disc golf course.[74]

Figure 15
Lake Wateree State Park









[73] https://southcarolinaparks.com/lake-wateree; https://www.scprt.com/parks
[74] https://southcarolinaparks.com/lake-wateree/things-to-do

Marinas

65. There are several marinas located on Lake Wateree, including Wateree Marina, Dutchman Marina, Clearwater Cove Marina, and Suttons Landing Marina.[75]

66. The value-driving factors for a marina vary significantly from those of other property types such as single family residential. Unique valuation factors for a marina include "the marina's location and how much demand it has and its proximity to users and the destination area (how long does it take for boaters to reach recreational waters?)" and "accessibility issues like tidal restrictions, seasonal limitations, locks, bridges and access to services" as well as "whether the property is owned or leased." Additional considerations include "the number of slips, slip length and overall lineal feet of dock" plus "the condition of bulkheads, breakwaters, haul-out access and the condition of service buildings and storage facilities." Lastly all sources of revenue including "slip rentals, haul-out charges, storage fees, building leases to yacht brokers, fuel sales and storage sales" must be evaluated and included.[76]

67. These factors require additional data beyond that of a residential property that are critical to determining value and whether (and to what degree) an alleged environmental condition may impact that value.

Figure 16
Wateree Marina





Storage Warehouse

68. Wateree Marina also includes a significant commercial improvement classified as a Storage Warehouse by Kershaw County that includes the boat showroom, as illustrated in Figure 17. According to its website, "At Wateree Marina, we're dedicated to making your boating and

[75] https://www.dnr.sc.gov/lakes/wateree/fishing.html#pumpout, https://www.watereemarinainc.com/try-out-our-boat-wet-storage--slips, https://www.dutchmanmarina.com, https://wateree.lakesonline.com/pages/Clearwater-Cove-Marina/, https://wateree.lakesonline.com/pages/Suttons-Landing/

[76] Deborah R. Huso, "On the Water: Appraising marina properties is a challenging niche with as many variables as there are bodies of water.", Valuation Magazine, published by The Appraisal Institute, 2Q 2013, p. 25

powersports experience the best it can be! That's why we offer only the top brands in the industry, including Can-Am, Sea-Doo, Xpress, SeaArk, Bennington, and Key West. Whether you're looking for a new Fishing Boat, Pontoon, Bowrider, Jetski, ATV or Side by Side we have a great selection to meet your needs. In addition to new boat sales, we also carry a variety of high-quality, pre-owned boats, ATVs and Side by Sides that have been carefully inspected to ensure reliability and value. Plus, we offer a large selection of Yamaha outboard motors to keep you on the water. Conveniently located in Camden, SC, we proudly serve customers from Columbia, Lancaster, Florence, and beyond—including Charlotte, NC. Whether you're shopping for a new boat, powersports, or searching for parts and accessories, or in need of expert service and rentals, we're here to help."[77]

69. The retail business of new and used watercraft must be valued in addition to the other features of the marina such as rental boats, fuel sales, and the general store. It requires additional income and expense data (such as inventory, customer orders, taxes, insurance, maintenance, personnel, etc.) that would not apply to other class parcels such as individual homes or large acreage tracts. It also requires a different valuation methodology than many of the other proposed class properties.

Figure 17
Boat Showroom at Wateree Marina



[77] https://www.watereemarinainc.com/information-about-us--info

Restaurants

70. Similarly, each restaurant located on the lake in the proposed class has a unique set of offerings that must be individually evaluated and understood to properly assess property value and any impacts to that value. For example, The Retreat focuses on an upscale dining experience and also offers a local catering business.[78]

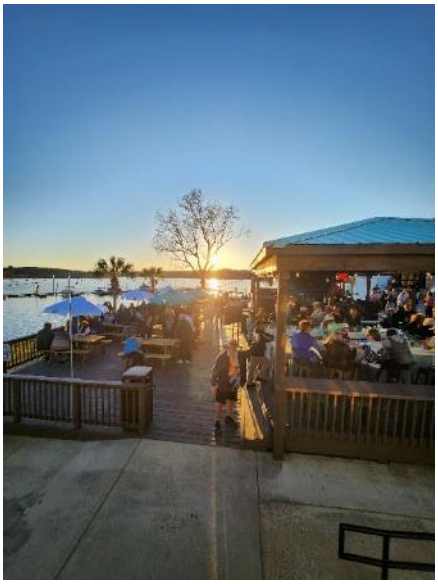
Figure 18
The Retreat



71. The Wateree Hole, part of Dutchman Marina which also includes a general store, a food truck, an ice cream shop, and a beer truck, focuses on a casual atmosphere with outdoor service and live entertainment.[79]

[78] https://www.eatattheretreat.com/
[79] https://www.dutchmanmarina.com/gallery, https://www.dutchmanmarina.com/foodnbevs/Wateree-Hole/

Figure 19
Dutchman Marina – Wateree Hole

72. Lastly, the Beavers Den at Beaver Creek offers frequent live entertainment and other events.[80] Each restaurant and venue has different valuation factors based on its unique combination of attributes and service offerings. A restaurant that stands alone such as The Retreat will have different customer traffic than a place like the Wateree Hole which is part of a larger destination. An appraiser or analyst must identify and evaluate all of these unique factors in order to accurately understand property value and any impacts to property value.

[80] https://www.facebook.com/BeaversDenatBeaverCreek; https://www.beaversdenatbeavercreek.com/gallery

Figure 20
Beavers Den at Beaver Creek[81]







Wateree Lake RV Park & Marina

73. Wateree Lake RV Park & Marina is another example of a land use that requires specific data and analyses in order to determine property value and any impacts to that value. Lake Wateree RV Park has "75 campsites for RV's and tents nightly, weekly, & monthly, with full hook-ups, laundry facility, bath house, with a boat ramp, Marina and gas . . . Kayak & Paddle Board & Paddle Boat Rentals. A full bar & grill named Get & Go Bar N Grill with a convenience store. [The] Campsite also has 2 playgrounds, beach area, and a dog park."[82] In addition to the numerous factors necessary to the valuation of the marina, the RV park has additional unique valuation factors that must be considered to adequately and accurately understand its value, including the number of slips (i.e., RV lots), current and historical occupancy rates, long-term versus short-term rentals, operating expenses, advertising, additional amenities and facilities offered.

[81] https://www.beaversdenatbeavercreek.com/gallery
[82] https://www.yelp.com/biz/wateree-lake-rv-park-and-marina-liberty-hill?override_cta=Get+information

Figure 21
Wateree Lake RV Park & Marina[83]







[83] https://www.tripadvisor.com/Hotel_Review-g54317-d11884607-Reviews-Wateree_Lake_RV_Park_and_Marina-Liberty_Hill_South_Carolina.html#/media/11884607/?type=ALL_INCLUDING_RESTRICTED&albumid=101&category=101 – Review from Matt T in December 2024 "This is an awesome park, 24/7 clubhouse, gated community, free laundromat on site, great neighbors. Relaxed park, well kept grounds, good place to call home for most guests. Private Marina compliments sites very nicely, would recommend"; https://mohawkrv.com/locations/lake-wateree-south-carolina/

Figure 22
Wateree Lake RV Park & Marina Site Map[84]



Conservation Land

74. In contrast to the marinas and other highly developed areas of the lake, the northeastern portion of Lake Wateree in Lancaster County and Kershaw County includes 3,452 acres and more than 14 miles of shoreline that are permanently protected as conservation land.[85] The conservation land was significantly expanded in 2014 when 1,628 acres (including six miles of shoreline) became available for sale, "Located across the lake from Lake Wateree State Park, a majority of the property was to be developed for residential purposes. When the lakeside land was put up for sale, The Conservation Fund purchased the entire property, safeguarding the natural viewshed from the State Park and providing DNR the necessary time to secure funding for its permanent conservation."

75. The conservation land includes "hardwood coves, mixed pine-hardwood slopes, loblolly pine ridgetops and open meadows that provide habitat for numerous wildlife species, including

[84] https://mohawkrv.com/locations/lake-wateree-south-carolina/
[85] https://www.dnr.sc.gov/news/yr2014/may1/may1_liberty.html

white-tailed deer, turkey, quail and several furbearers. Also found on the tract are hundred-year-old longleaf pines, as well as unique granite boulders that dot the landscape, giving the region the nickname, 'the Devil's Backbone.' Other notable species found on the site include bald eagles, wading birds, crayfish, and numerous species identified in South Carolina's State Wildlife Action Plan as priority species for conservation action."[86]

76. Properties that abut this land or have a view of this land from across the lake may have different value characteristics than properties near more improved and congested areas of the lake.

Figure 23
Lake Wateree Conservation Land (Lancaster County)[87]



Office Space

77. Located at 5859 River Road, Lake Wateree Properties, owned by Morris and Brenda Worthington, is a real estate agency specializing in Lake Wateree property since 1987.[88] An office building has unique property characteristics, such as signage, parking spaces, offices, and meeting space that are unique to its land use and require specific data and valuation techniques to fully understand its property value and any impacts to that value.

[86] https://www.dnr.sc.gov/news/yr2014/may1/may1_liberty.html
[87] https://www.dnr.sc.gov/news/yr2014/may1/may1_liberty.html
[88] http://lakewatereeliving.com/; https://www.zillow.com/homedetails/5859-River-Rd-Ridgeway-SC-29130/225137237_zpid/; https://watereehomes.com/bio/BioTemplate.asp

Figure 24
Lake Wateree Properties



Retreat Center

78. Owned by the Carolina Conference Association of Seventh Day Adventists, Nosoca Pines Ranch "is a full-service retreat center and summer camp designed for groups of up to 300. We offer lodging, meals, meeting facilities and activities to make your special event a great success."[89] According to the Ranch Manager, "Nosoca Pines Ranch is dedicated to Christian service. The Ranch is located in Liberty Hill, S.C. on 200 beautiful acres bordering Lake Wateree, which provides a rich natural environment for outdoor activities such as horseback riding, swimming, canoeing, hiking, pontoon boat rides, hay rides, horse-drawn buggy and wagon rides and water skiing. There are also a variety of indoor sports such as volleyball, basketball and racquetball."[90]

79. Like so many other unique land uses throughout the proposed class, Nosoca Pines Ranch requires unique information to establish its value and understand any potential impacts to that value such as individual and group reservations, ongoing or planned events, operating expenses, maintenance expenses, and number of personnel. This information is not readily available in the public data and requires an individual inquiry.

[89] https://www.nosoca.org/who-we-are
[90] https://www.nosoca.org/who-we-are

Figure 25
Nosoca Pines Ranch






Property Characteristics and Improvements

80. Even with a particular land use such as residential, the range of improvement types, architectural styles, quality of construction and furnishings, year built and effective age, improvement size, and lot size vary dramatically throughout the proposed class area. The unique combination of factors contributes significantly to a property's value and is often qualitative rather than quantitative in nature. As a result, these factors are not readily available (or available at all) for the proposed class in a standardized or usable format in a publicly available data source, necessitating an individual assessment rather than a class-based approach.

81. Understanding the factors that drive value for an individual property is not only a property-specific inquiry, it is also unique to the specific point in time under analysis. This temporal component must be addressed as property condition, maintenance and even improvement size can change significantly over time, and the data available at the time of analysis may or may not reflect accurate conditions at the time a particular property owner was purportedly damaged. Understanding the conditions at the time of impact thus requires an individual inquiry into improvement size, condition, maintenance, and other relevant factors at the time impact to the property's value is alleged.

82. The proposed class area includes many diverse types of residential property, such as single family homes on rural acreage, single family homes in platted subdivisions, estate homes in private gated communities, manufactured or modular homes, RV parks, mobile homes on individually owned parcels, and mobile homes in mobile home parks. These distinct property types all have unique features that drive value and that influence whether, and to what degree, environmental contamination may affect value. The diversity of residential properties in the proposed class area is illustrated in the photographs that follow.

Figure 26
Varying Property Characteristics Throughout the Proposed Class Area














83. A review of Multiple Listing Service and VRBO listings for properties in the proposed class area further illustrates the unique property characteristics, critical to an understanding of both unimpaired value and a proper analysis of potential property value diminution, that would only be apparent and could only be addressed on an individual property basis. It is important to note it is not just the individual characteristics but their unique combinations and interplay with each other that affect the value, and any impact to that value, for a particular property. Individual property characteristics influence whether an environmental condition impacts value when the environmental condition is considered more significant in the minds of market participants than the relative desirability or value placed upon the unique features of that property. Further, the relative significance of the environmental condition to the desirability of the property's attributes also influences the degree of any impact, which can vary substantially from property to property.

84. Examples of individual property characteristics that influence property value, and impact to value, include:

> *Professional Appointed Rental Property* – "Steps from your private boat ramp & dock, indulge in boutique hotel amenities, at this professionally designed waterfront oasis, w/ fully stocked kitchen, fenced- in property, large yard, WiFi, Smart TVs in each room, & spa bathrooms. Enjoy kayaks, stand-up paddle boards, ping-pong, croquet, volleyball, and many more yard games. Grill a delicious meal on the gas grill and toast

marshmallows by the fire pit (firewood provided). Sail along the placid waters of Lake Wateree while taking in unforgettable sunsets. Trailer in your own boat or rent one at the marina down the road. Inside the home, you'll have many games and books to enjoy, a super fun upper loft that the kids love! Indulge in the soothing comfort of a warm rainfall shower. During the cooler months, wrap yourself in one of the cozy throw blankets and settle in by the glow of the indoor fireplace. Sleep soundly on memory foam King and Queen beds with immaculate plush bedding. Feel safe and sound in our fenced driveway, fully lit property and secure deadbolt Smart lock. Self check-in, Nest thermostat controlled by YOU for your comfort, and plenty of private driveway parking. We also provide extra amenities for your comfort and convenience."[91]

Manicured Lawn, Swimming Area, and Water Slide – "What a beauty! An absolutely perfect manicured lot is available now on one of the nicest streets on Lake Wateree. The home boasts beautiful lake views all across the water side via over-sized wall to wall windows. The spacious split floor plan is centered around a huge open living area featuring hardwood floors, recessed lighting, a wet bar, large built ins and a gas log fireplace. In addition to the approx. 3000 square feet of living space, the home sits on a full unfinished basement. Thet wo car garage also has a FROG that is unfinished. Lots of potential and lots of future space to develop how you like. The lot is beautifully landscaped with a retaining wall, a swim area, and a very nice stationary dock with floater, water slide and pontoon boat lift. This is the one you've been waiting for!"[92]

Fully Renovated on Superior Point Lot – "Beautiful, fully renovated home on a superior point lot with almost 400 feet of water frontage just off the main channel! Ready to be your oasis this summer! Updated throughout, you will love all of the upgrades including a custom kitchen and walk in tiled shower with rainfall shower head in the master bath! In addition, the home has a full home water filtration system, gorgeous new sunroom with incredible panoramic water views, a great deck across the front and a new dock. There is also a private boat launch, a new retaining wall and plenty of outdoor entertaining space such as a fire pit patio, fish cleaning station, covered area to park your boat and a storage shed for your lake toys. This property would also make a great investment property or short term rental. A rare opportunity to own a unique property! Make it yours today just in time for spring!"[93]

Gated Community – "This modern craftsman home built in 2021 is everything you could want in a lake residence. Within the beautiful gated community of The Woods of Molly Creek, this home sits on almost 1.5 acres with a perfectly sloped lot out of the flood zone and offers very deep water with a new dock, boat lift, and big water views. The open FP offers primary level living space with all the extras like a large pantry, utility/laundry, office area and a spacious kitchen and great room with vaulted ceilings, fireplace and a designated dining area. The home features high quality finishes and has beautiful oak wood floors, custom cabinetry with granite, huge his and hers walk in closets and an enormous walk in shower. A paved parking area and double attached garage add to the

[91] https://www.vrbo.com/3640528
[92] Canopy MLS 4043012 – 213 Rocky Point Circle
[93] Canopy MLS 4110031 – 1592 Lake Road

convenience of this move in ready home. The lawn is landscaped perfectly and equipped with irrigation. Have a seat on the covered porch, take a deep breath, watch the fishing boats putter by and see why lake life is the best life."[94]

Entertaining and Gaming Space – "Beautiful home is nicely tucked away down a tree lined drive. Owners have immaculately decorated and furnished this home to bring a comfortable and stylish "lakey" flair. 3 spacious levels of living - the main floor features an open floor plan, owners suite on one side of home and guest suite on other, all with beautiful lake views. Upper level of home offers 3 bedrooms - 2 of which open to a lakeside balcony. Lower level is a large entertaining and gaming space with a full kitchen, lakeside screened porch, bath, and a second garage large enough for lake toys and vehicles too! Just off the screened porch is a stone patio with hot-tub - a great spot for nighttime star-gazing while relaxing! This property has a rare and extremely convenient private boat ramp just below the lower level garage."[95]

Separate Apartment or In-Laws Quarters – "Fantastic home for entertaining and multi-generational use! In addition to the 4 car garage, there is a small apartment on the lower level not included in the square footage of the home. The main level has the primary bedroom and bathroom and a guest suite with private bath. The large open kitchen, dining and living area feature beautiful hardwood floors and floor to ceiling windows and over-sized sliding doors that lead to a spacious deck with an outside bar. Upstairs, you'll find 2 more guest suites each with their own private bath. The property is level and shaded and offers lots of space for entertaining and recreation. If you are looking for privacy, you will like that its at the end of a dead end with wooded property beside and behind. Priced competitively, make a move now and enjoy the lake this summer!"[96]

Leased Land – "This 2 bedroom bungalow is situated on a leased lot!! Lease is a 20 year ground, $4000 per year. Main Channel lot, dock. House being sold as is as seen."[97]

Land Value Only – "Beautiful main channel lot, flat terrain and elevated just enough to be out of flood plain, with boat ramp, dock, granite seawall. The home on this property has no value."[98]

85. As illustrated in the above photographs and property listings, there is wide variation in the residential property types and property features within the proposed class area. However, the publicly available data provides only limited detail regarding the specific property type or features of a particular property. Due to these significant data limitations, many of the features critical to a determination of value or impact to value are not available or known on a class-wide basis.

[94] Canopy MLS 4257782 – 1099 Retreat Way
[95] Canopy MLS 4214619 – 668 Wateree Key Court
[96] Canopy MLS 4149395 – 586 Valley 1 Drive
[97] Columbia MLS 325856 – 2168 Horton Cove Road
[98] Columbia MLS 308654 – 936 Timberlane Circle

86. Yet even the limited publicly available data demonstrates the significant variations that exist within the proposed class, within even a single property class such as residential. The wide variety of characteristics and property features of the nearly 2,200 improved residential properties within the proposed class area are summarized below.

Figure 27
Variations in Improved Residential Property Characteristics in the Proposed Class

Year Built

Improvement Type	Parcel Count	Data Count	Min	Max	Average
Mobile Home	201	151	1953	2022	1988
Modular Home	6	6	2012	2021	2015
Outbuilding	99	6	1991	2018	2011
Single Family	1,866	711	1957	2024	2007
Residential Improved Total	**2,172**	**874**	**1953**	**2024**	**2004**

Improvement Size (SF)

Improvement Type	Parcel Count	Data Count	Min	Max	Average
Mobile Home	201	198	296	2,838	1,197
Modular Home	6	6	1,456	2,948	2,084
Outbuilding	99	4	420	3,000	1,407
Single Family	1,866	1,864	160	7,644	1,669
Residential Improved Total	**2,172**	**2,072**	**160**	**7,644**	**1,625**

Lot Size (Acres)[99]

Improvement Type	Parcel Count	Data Count	Min	Max	Average
Mobile Home	201	201	0.4	3.0	0.8
Modular Home	6	6	0.7	0.9	0.8
Outbuilding	99	99	0.3	354.7	11.4
Single Family	1,866	1,866	0.1	2,386.2	3.0
Residential Improved Total	**2,172**	**2,172**	**0.1**	**2,386.2**	**3.2**

[99] Lot size for each parcel was measured using ArcGIS software

Total County Value

Improvement Type	Parcel Count	Data Count	Min	Max	Average
Mobile Home	201	201	$27,000	$572,300	$227,740
Modular Home	6	6	$330,700	$609,200	$441,700
Outbuilding	99	99	$14,000	$898,700	$192,466
Single Family	1,866	1,866	$52,400	$9,954,400	$487,100
Residential Improved Total	**2,172**	**2,172**	**$14,000**	**$9,954,400**	**$449,544**

87. Property-specific characteristics are a key consideration because not only do they drive unimpaired value, the unique combination of property characteristics affects whether (and to what degree) a specific property's value is impacted by an environmental condition. Single family properties in the proposed class range from one-tenth of an acre to nearly 2,400 acres and from less than 200 square feet to over 7,600 square feet. Properties with such a diverse array of characteristics are influenced by different value factors and will respond differently (if at all) to any potential environmental impacts, which requires an individual assessment.

88. Additional examples of the many unique and varied property characteristics throughout the proposed class are illustrated below.

Figure 28
1075 Retreat Way[100]



[100] https://www.zillow.com/homedetails/1075-Retreat-Way-Ridgeway-SC-29130/456174391_zpid/?imxlb=g,3

Figure 29
197 Smooth Rock Point[101]



Figure 30
Great Escape on Wateree[102]









Figure 31
Impeccable Home w/ Dock & Pool on Lake Wateree! [103]



Figure 32
Rustic Waterfront Cabin[104] or Charming Waterfront Cabin[105]





[101] https://www.zillow.com/homedetails/197-Smooth-Rock-Point-Ridgeway-SC-29130/2071629423_zpid/
[102] https://www.vrbo.com/3640528 - "Launch your day from the private boat ramp (kayaks, paddle-boards and a splash pad provided). Glide on the serene waters of beautiful Lake Wateree, with nature all around you. Prefer to stay close to shore? Head down to the covered dock, perfect for fishing, lounging with a cold drink or watching your kids splash the day away. Back on land, the fun continues with yard games (badminton, corn hole, ladder ball, croquet, ring-toss and Kan Jam), and ping pong inside the game garage. Escape the craziness in the "Cozy Clubhouse", equipped with hammock, zero gravity chaise lounges, yoga mats, and some light exercise equipment. In the evening, as you take in the breathtaking sunsets, fire up the grill, enjoy a meal outside and top it off with marshmallows and scary stories around the fire pit (2 bundles of firewood provided). Prefer to be indoors? Stream your favorite show on any of our 4 Smart TVs, grab a book or magazine, or enjoy a variety of board games. Nestled in a deep-water cove, ideal for fishing, swimming and enjoy water activities with little-to-no boat traffic. We provide life vests (sizes ranging from toddler to XL), as well as indoor games, books and magazines."
[103] https://www.vrbo.com/9563911ha - ""Experience domestic bliss and stay at this grand and relaxing lakefront house just outside of Camden! With lovely lake views, 4 bedrooms, 3.5 bathrooms, a fully equipped kitchen, and a private dock, this vacation rental is close to paradise. Explore Lake Wateree State Park, take a day trip to Columbia or Charlotte, or simply spend your days sipping drinks by the pool. The spacious living room, sun-soaked deck with a gas grill, and private backyard make this home a place of pure tranquility!"
[104] https://www.vrbo.com/167106 - Guest Review, September 30, 2025 – "This was just the getaway we needed! Secluded, quiet, and the home is beautiful, spacious, and comfortable! We were able to fish, grill and enjoy priceless family time. The host (Deborah) was so very responsive and quite hospitable. Her phone call prior to check in was the icing on the cake! Will definitely be renting this home again in the very near future. Thank you!!!!"
[105] https://www.vrbo.com/7747719ha - Guest Review, September 29, 2025 - "A well loved family cabin on a stunning lake. Some of the wear and tear was charming, but some teetered on safety concerns like holes in the patio decking, soft wood on the swim decking, and one of us fell through the bed. A bit of an ant problem in the kitchen."

89. The significance of unique property characteristics is also highlighted by the proposed class representative property. In its rental listing, the view and the beach are emphasized as unique features as well as the top floor sleeping loft with multiple twin beds and bunk beds.[106]

Figure 33
Example of Class Representative's Unique Property Features



90. Lastly, beyond property type and property features, the condition and maintenance of a particular property, which can vary substantially, also affect property value and any impact to property value:

> "However, real estate suffers from inexactness. No two parcels of real property are exactly alike – even two otherwise identical dwellings in a subdivision may have subtle location or maintenance characteristics or slightly different amenities or may sell at different times, and are thus impacted by variable market conditions. In practice, it is nearly impossible to find two parcels of real estate that are even close matches for one another in all respects."[107]

91. Evaluating property value diminution must take into account property-specific condition and maintenance as well as the influence of the condition and maintenance of surrounding properties, which can have a positive or negative effect:

> "Property values are negatively impacted when surrounding properties are of lesser value. Conversely, a property of lesser value is enhanced when the adjoining property values are

[106] https://www.vrbo.com/1127295 - "What makes this property unique: The view and the beach!" and "Main floor: Large porch with lots of seating, 3 bedrooms (Q, Q, F), 2 full baths (tub/shower), greatroom, eat-in kitchen, laundry & pantry. Top floor: open floor (5 T, 1 futon with top T bunk), sitting area with tv, full bath (shower – no tub). Under house: all open space with seating, Outdoors: large parking area, large yard, large beach with shade, large dock. AMAZING view of lake."
[107] Robert A. Simons, When Bad Things Happen to Good Property, Environmental Law Institute, 2005, p. 137

high. For example, a run-down house in an expensive beach community tends to be worth much more than the same house in a community where all the houses are in bad condition."[108]

92. As with so many of the critical details regarding property features and type, to fully appreciate all the individual characteristics that influence the value of a particular property requires a property-specific evaluation since critical details on condition and maintenance are not fully contained in a publicly available data source and cannot be accounted for in a class-based damages model. This important property-specific inquiry is also unique to and requires data as of the specific date of value. Factors that should be considered that may affect condition and maintenance include general deferred maintenance on a specific property as well as the prevalence of vacant homes, foreclosed properties, and rental properties in the surrounding area. Examples of variations in condition and maintenance within the proposed class are highlighted in the photographs below.

Figure 34
Examples of Varied Property Condition in the Proposed Class



[108] Real Estate Damages (2016), p. 3-4







Shoreline Type and Length, Water Access, Elevation and Terrain

93. In addition to the many considerations for land use and property characteristics, waterfront properties have unique features that must be evaluated and understood on an individual property basis when evaluating property value and any potential impacts to that value. These include shoreline type and length, water access, and elevation and terrain.

Shoreline Type and Length

94. Shoreline type and length affect water access, terrain, erosion, and many other critical property features. Shoreline type varies between manmade structures and natural materials, which can also influence the environmental sensitivity of a particular property. For example, the National Oceanic and Atmospheric Administration (NOAA) ranks lake shorelines based on the following classifications, with 1 being the least environmentally sensitive and 10 being the most environmentally sensitive.[109]

[109] https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-sensitivity-rankings-list

Figure 35
Environmental Sensitivity Index (ESI) Lake Shoreline Types[110]

ESI Rank	ESI Type
1A	Exposed rocky shores
1B	Exposed, solid man-made structures
1C	Exposed rocky cliffs with boulder talus base
2A	Shelving bedrock shores
3B	Eroding scarps in unconsolidated sediment
4	Sand beaches
5	Mixed sand and gravel beaches
6A	Gravel beaches
6B	Riprap
7	Exposed tidal flats
8A	Sheltered scarps in bedrock, mud, or clay
8B	Sheltered, solid man-made structures
8C	Sheltered riprap
9A	Sheltered sand/mud flats
9B	Vegetated low banks
10B	Freshwater marshes
10C	Swamps
10D	Scrub-shrub wetlands

95. Many of these shoreline variations exist at Lake Wateree throughout the proposed class area.

Figure 36
Variations in Shoreline in Proposed Class Area





[110] https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-sensitivity-rankings-list; https://response.restoration.noaa.gov/esi-shoreline-types








96. The Jones property, with 190 feet of shoreline and a wide sandy beach, illustrates the significance of these features when evaluating an individual property. While all of the proposed class properties are waterfront, shoreline length varies dramatically from less than ten feet of shoreline to more than two miles of shoreline. As with shoreline type, the amount of shoreline can be a significant factor in property value by affecting water access, water view, and other critical features, which requires an individual analysis.

Figure 37
Sandy Beach at Class Representative Property




Water Access

97. On a recreational lake such as Lake Wateree, water access is a key feature of any waterfront property. Boaters, fishermen, swimmers, and others who use and enjoy the lake place specific value on how they are able to access the lake. Some properties have a boat ramp, allowing a boat owner direct access to the water from the property. Other properties are unable to accommodate a boat ramp due to the slope or size of the property or the inability to obtain a boat ramp permit.[111]

98. Properties without a boat ramp must use a public access point to place a boat into or out of the water. Although there are several public and private access points at Lake Wateree, the distance, convenience, and availability of these access points varies significantly for the nearly 2,800 properties in the proposed class.

99. In addition, some properties at Lake Wateree have an existing dock and some do not. A dock is a key feature for many waterfront property owners, but all docks are not created equal. Docks at Lake Wateree vary significantly in terms of size, quality of construction, construction materials, age, condition, maintenance, and features. Some docks are multi-level, have multiple boat slips with boat lifts, and have outdoor living space, sun decks, storage, and other amenities. Other docks or piers are simple wooden structures without any additional features. In addition, docks of any shape or size may have aging boards, damaged floaters, or other condition issues.

100. For properties without an existing dock, or for buyers who want to purchase a property with a dock, dock permitting is a critical issue:

> "If the seller can't provide any permitting history, or the existing structure differs from what was originally permitted, there may be a lake use permitting compliance issue. If the

[111] https://www.duke-energy.com/community/lakes/services/permits-shoreline-activities

buyer proceeds to purchase the property and there are compliance issues, Duke Energy will likely expect the new owner to correct these issues."[112]

". . ., Lake Services doesn't pre-approve lake structures. If the ability to construct a new structure or modify an existing structure is important to a potential buyer, that buyer should require the seller to obtain Duke Energy approval for such modifications prior to closing on the property."[113]

101. The ability to access the water may also be affected by an individual property's location either on the main channel of Lake Wateree or on one of the many coves that exist at the lake. Water depth varies throughout the lake and at different times throughout the year. When the water level is low, docks at some properties may be inaccessible while others experience year-round deepwater.[114]

102. Water access continues to be a highly desirable property attribute at Lake Wateree. In 2025, 75% (37 of 49) class sales highlighted docks, boat ramps, or piers in the property description or agent remarks in the property listing. Further, since the filing of the First Amended Complaint in November 2024, twenty properties in the proposed class have filed for a dock permit in Kershaw County alone, including properties in close proximity to the Jones property.

[112] https://www.duke-energy.com/-/media/pdfs/community/lakes-and-rec/potential-buyers-info-sheet.pdf
[113] https://www.duke-energy.com/-/media/pdfs/community/lakes-and-rec/potential-buyers-info-sheet.pdf
[114] https://lakes.duke-energy.com/index.html#/detail/17/Detail#Detail

Figure 38
Post-Complaint Dock Permits in Class Area (Kershaw County)[115]

Address	Permit Issue Date	Permit #	Valuation
2254 M West Rd	12/4/2024	202402098	$7,500
1838 Lake Road	12/11/2024	202402129	$67,112
1838A Lake Road	12/11/2024	202402128	$71,000
2234 Sailing Club Lane	12/11/2024	202402130	$76,212
1780 Lake Road	1/23/2025	202500099	$21,150
2067 Lakeshore Rd	2/10/2025	202500215	$2,600
2125 Lakeshore Road	2/12/2025	202500239	$44,000
1982 Lake Road	3/7/2025	202500397	$2,500
1175 Barn Owl Road	4/15/2025	202500669	$64,800
1764 Catclaw Lane	4/15/2025	202500670	$42,000
2166 Horton Cove Rd	4/15/2025	202500668	$84,600
2358 Beaver Creek Road	4/15/2025	202500671	$4,200
2622 Lake Road	5/14/2025	202500865	$4,000
2041 Lakeshore Road	6/13/2025	202501047	$15,000
1360 Cedar Cove Road	7/2/2025	202501161	$23,250
1525 Carl A Horton Road	7/8/2025	202501184	$48,400
1756 Atoka Trail	7/8/2025	202501183	$47,800
2366 Little Gull Road	8/18/2025	202501413	$75,000
2368 Little Gull Road	8/18/2025	202501415	$34,000
67 Retreat Lane	8/18/2025	202501414	$68,210

103. Examples of the many variations in water access throughout the proposed class are highlighted in the figures below.

[115] First Amended Complaint filed November 21, 2024; https://www.kershaw.sc.gov/government/departments-h-q/planning-zoning/monthly-building-permit-reports

Figure 39
Undockable Lot at 1222 Woodside Drive[116]



Figure 40
New Dock at 1592 Lake Road[117]



[116] Canopy MLS 3645814 – 1222 Woodside Drive Public Remarks for 1222 Woodside Drive: ". . . . Lot can accommodate a portable dock. Lake Wateree is 21 square miles and known for its crappie, bass & catfish. Bring your kayaks and fish from your backyard! Nearby Lake Wateree State park features a boat ramp, refueling dock and tackle shop."
Agent Remarks for 1222 Woodside Drive: "**Lot not dockable (no dock permit will be provided)** but portable floating dock is permissible. According to DHEC, septic permit no longer on file. Back on market through no fault of seller!" (emphasis added)

[117] Canopy MLS 4110031 – 1592 Lake Road "Beautiful, fully renovated home on a superior point lot with almost 400 feet of water frontage just off the main channel! Ready to be your oasis this summer! Updated throughout, you will love all of the upgrades including a custom kitchen and walk in tiled shower with rainfall shower head in the master bath! In addition, the home has a full home water filtration system, gorgeous new sunroom with incredible panoramic water views, a great deck across the front and **a new dock. There is also a private boat launch, a new**

Figure 41
Variety of Docks and Water Access[118]








retaining wall and plenty of outdoor entertaining space such as a fire pit patio, fish cleaning station, covered area to park your boat and a storage shed for your lake toys. This property would also make a great investment property or short term rental. A rare opportunity to own a unique property! Make it yours today just in time for spring!" (emphasis added)

[118] https://www.vrbo.com/4888318, https://www.vrbo.com/7747719ha





104. Unlike many of the more elaborate docks throughout the proposed class, or the properties with no water access, the Jones property has a one level floating dock with no boat slips and damaged boards and floaters.[119] According to Mr. Jones, there are times due to flooding or unique events such as the dam construction project where his dock is inaccessible.[120]

Figure 42
Dock at Class Representative Property



Elevation and Terrain

105. Lastly, elevation and terrain are key features for waterfront property, closely related to shoreline type and water access. Elevation and terrain affect whether and to what degree a lakefront property is prone to flooding and erosion as well as what features and amenities are physically possible on the property. Elevation and terrain may also be a key valuation factor

[119] Jones deposition, p. 97-100
[120] Jones deposition, p. 92

for property owners or potential purchasers for whom accessibility issues are a concern. As illustrated below, properties in the proposed class vary widely in elevation and terrain, from extremely steep or cliffside lots to wide flat properties with very little elevation.

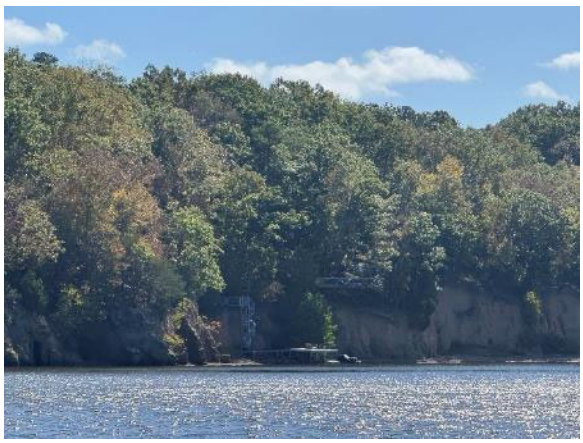
Figure 43
Variations in Elevation and Terrain in Proposed Class[121]





106. As noted in Real Estate Damages, erosion is also a key factor when evaluating property conditions; "While clay soils are often a contributing factor to slope instability, erosion can be a problem in areas of sandy soil. Erosion is most prevalent along coastal beaches, lakeshores, and coastal bluffs. Erosion can be generated by a number of factors, primarily water and wind, and can act on both rock and soil."[122]

Figure 44
Examples of Shoreline Erosion in Proposed Class





[121] https://www.realtor.com/realestateandhomes-detail/936-Timberlane-Cir_Winnsboro_SC_29180_M65233-26051
[122] Real Estate Damages (2016), p. 197

107. Similarly, the amount of each property within the floodplain varies significantly. Past or potential flooding can be a significant valuation issue as is the need for flood insurance. These concerns do not affect every property in the proposed class and must be evaluated on an individual property basis. For example, Mr. Jones testified that the impacts to his property vary from flood to flood in terms of the area impacted and the extent of damage but that the effects include erosion, damage and debris on the beach, and damage to the dock.[123]

108. Examples of differences in elevation and terrain resulting in different floodplain risks throughout the proposed class are illustrated below.

Figure 45
Potential Class Properties Variation in Flood Zone and Terrain

Jones Property - 1778 Sailing Club Rd



2207 Horton Cove Rd







109. Agent remarks in MLS listings also highlight the market's sensitivity to flooding and the need to evaluate this factor when considering property value and any impacts to value. For example, one agent notes, "SPECTACULAR SUNSETS are in your future if you're lucky enough to call this property yours! This beautiful home is squeaky clean with a huge open

[123] Jones deposition, p. 101-104

family room and spacious primary suite. The property offers a large circular concrete drive and parking pad with double carport, covered rear patio and peaceful screened porch. There is a large double detached garage and workshop to store your boat and toys. You'll love the huge shade trees on the property and mature grass and landscaping. The place to be is on the front deck that's newly resurfaced and looks out over popular Beaver Creek to the main channel. **The sloping lot assures that flood insurance is not required.** Guests will love the sandy beach and palm trees. The updated dock is ready for sunny afternoon boat rides and fishing. Don't miss this prime property in a highly desirable location just a short golf cart ride to all the restaurants and fun that Beaver Creek has to offer!"[124]

View

110. In addition to shoreline type and length, water access, elevation and terrain, view is a particularly important value-driving characteristic for waterfront property:

> "Extensive academic research indicates that a waterfront view amenity earns a price premium, with a hierarchy of pricing premiums according to the quality of the view amenity."[125]

> "In a study by Wyman, Hutchison, and Tiwari, GIS-based modeling techniques are employed to estimate the price of waterfront-adjacent properties in South Carolina. They classify three types of lakefront properties and find a significant marginal price premium of 223% for point lots, 178% for deep water lots, and 117% for cove lots. . . . Moreover, Wyman, Hutchison, and Tiwari find asymmetrical processes operating during the boom and bust periods of their study, with premium waterfront properties maintaining price premiums relative to lower quality, non-waterfront view properties."[126]

111. Notably, view affects vacant lots differently, and potentially to a larger degree, than improved properties:

> "A number of studies find varying price premiums for distinctive waterfront amenities, including canals, wetlands, rivers, lakes, and ocean views. The price premium for the water view amenity may be substantively higher for vacant lots compared to nonvacant lots where the age, size, and quality of housing structures can distort price premiums."[127]

112. View is a highly individualized property feature, and the quality of the view is critically important to understanding property value for a waterfront property:

> "The modeling applied in this study confirms that properties with higher-quality views (measured in terms of water view area) sell at a price premium relative to properties with

[124] Canopy MLS 4231695
[125] Chris Mothorpe, PhD, and David Wyman, PhD, "Appraisal of Residential Water View Properties", The Appraisal Journal, Spring 2017, p. 132
[126] Chris Mothorpe, PhD, and David Wyman, PhD, "Appraisal of Residential Water View Properties", The Appraisal Journal, Spring 2017, p. 133
[127] Chris Mothorpe, PhD, and David Wyman, PhD, "Appraisal of Residential Water View Properties", The Appraisal Journal, Spring 2017, p. 132

lower-quality views. In essence, the proposed spatial variable provides a method to quantify the quality of "big water" views (or the lack thereof) in residential property markets."[128]

113. The importance of view is demonstrated throughout the rental listing for the Jones property. Under "Why they chose this property" in their VRBO rental listing, Mr. Jones describes the view from the property as a "spiritual experience":

> "Built in 2003 and named for the owners' deep Gamecock ties, "The Roost" gives its visitors a spectacular view of Lake Wateree any time of day. With the sunrise, observe the egret or duck as he takes his early morning route across the serene lake. Mornings are only disturbed by the of the occasional fisherman's lure. Throughout the lazy day, there is always a view of a few sailboats resting at the dock of the sailing club just across the cove. Breezy days often bring their captains out to play and practice their nautical skills. Evenings are not for only observing, but for participating in one of the most breath-taking sunsets anywhere. **From the porch, from the shore, or from the dock the sunset view is a spiritual experience.**"[129]

114. The sunset view from the Jones property is further highlighted in the photographs in his rental listing, such as the one in Figure 46 whose caption emphasizes this is a "REAL photo taken from porch".[130]

Figure 46
Sunset View from the Jones Property



115. The significance of the view is also emphasized in guest reviews for the Jones property, for example:

[128] Chris Mothorpe, PhD, and David Wyman, PhD, "Appraisal of Residential Water View Properties", The Appraisal Journal, Spring 2017, p. 141
[129] https://www.vrbo.com/1127295 (emphasis added)
[130] https://www.vrbo.com/1127295

"Best lake property I've ever stayed: The photos of this house do not give the property justice! The view was spectacular and the beach at the bottom was the perfect hangout spot for a lake weekend! The hosts were also kind enough to supply us some birthday decorations for my boyfriends birthday! The room setups were perfect for our big group, and the property had a nice area for us to safely put our jet ski in the water without having to go to a boat launch! Everyone in our group loved the house, and we will definitely be returning! Can't wait until our next stay!"[131]

116. View is also regularly highlighted in MLS listings, such as these from 2025 sales in the proposed class:

"Realize your waterfront dreams in this exquisite home in the Liberty Hill area of Lake Wateree. **This home has great water views from living area, bedroom and porch where you can enjoy your morning coffee or watch the evening sunset**. You'll love the kitchen remodeled in 2019 with new cabinetry, granite countertops and new appliances. Have your family gatherings in the basement recreation room with fireplace and exit onto the concrete patio for grilling and entertaining. Cool off in the in-ground salt water pool or experience the lake life from your private boat ramp and pier. Park your vehicles in the attached carport and all your outside equipment in the storage area of the walk-out basement and detached building. Fireplaces in den and recreation room have gas logs and fireplace in bedroom is wood burning. All furniture and accessories negotiable."[132]

"**Unwind with sunset views** at this lakefront gem in the coveted Beaver Creek area of Lake Wateree! This cozy stick-built home is the ultimate retreat, nestled on a quiet dead-end road just minutes from restaurants, boat rentals, and the marina. Renovated in 2007, it features an open floor plan, cathedral ceilings with exposed beams, granite countertops, modern appliances, central air, and a gas fireplace. Relax on the spacious screened-in porch with **peaceful lake views**. Recent upgrades include new windows (2019) and a new roof (2021). Extras like a private pier, your own boat ramp, outdoor shower, and large crawl space add even more value. Whether you're seeking a weekend escape, full-time lake life, or a top-tier Airbnb investment - this one has it all. Lake season is here - don't miss your chance to make this turnkey waterfront home yours!"[133]

"Embrace your lake dreams with this fantastic cabin! This perfect weekender has great water and **huge views out to the main channel**. A perfect screened porch waits for your mornings with coffee while the convenient patio sets the stage for grilling dinner. You'll love the brand new modern kitchen with tall lighted cabinets, sleek new stainless appliances and finished concrete counters. Congregate around the island or enjoy the updated great room with open spaces and new LVP flooring. The huge screened porch is sure to be a hit! The home has also been updated with new electric throughout. An almost

[131] https://www.vrbo.com/1127295 - Guest Review, September 17, 2023
[132] Canopy MLS 4263378
[133] Canopy MLS 4247712

one acre lot has plenty of space for additions or a new build behind the cabin. Selling turn key and priced to move! Don't sleep on this one!"[134]

"Searching for a fabulous waterfront Lake house? Your search is over! This home is perfectly nestled on a .78 acre lot, w/ **panoramic Lake views year round**! 165 feet of Waterfront, NEW dock, w/covered deck and NEW boat lift. Like to entertain? You have over 1,160sf of exterior space to choose from and take in the **expansive Lake views**. You're gonna love the Stone perimeter seating walls! This beautiful Chalet style home offers an OPEN floor plan, HIGH ceilings, **WALL of windows and french doors that lead to the deck**. Main level has hardwood flooring, Bedrooms/living/dining areas, 2nd level has LOFT w/ **amazing views**, spacious Primary Suite. The partially finished basement is 1,104 sf heated/cooled, FULL Bath w/Laundry - addl Entertaining, play/sleeping - (2) sets of French doors to let the Sunshine in and the View is equal to the Views from the main level. Home currently has sleeping accommodations for 12+ people. Convenient to Columbia & Charlotte (is only little over 1 hour away)"[135]

117. Examples of variations in view throughout the proposed class are highlighted below.[136,137,138]

[134] Canopy MLS 4263089
[135] Canopy MLS 4243530
[136] https://www.vrbo.com/167106, https://www.vrbo.com/3929592; https://www.realtor.com/realestateandhomes-detail/1851-Great-North-Rd_Winnsboro_SC_29180_M57891-13491
[137] Canopy MLS 4149627 – 963 Westshore Drive "Escape to your own private oasis! This beautiful waterfront property offers breathtaking views of the lake, a private dock, and plenty of outdoor space. The view of the sunrise is spectacular! The home is situated on a .71 acre lot and has 134 +/- feet of water frontage. Located just minutes from the interstate, offering a convenient commute to the Columbia or Charlotte Metro area."
[138] Canopy MLS 3355884 – 46 Merry Way "This is lake living at its best with one of the best prices on the lake! Beautiful lake home on Lake Wateree overlooking the main open water with more than 300 ft of frontage. Enjoy the year round lake views from the great room and large master suite. Main level master also has master bath with garden tub and separate shower. Two additional bedrooms and bathroom upstairs. Home features boat dock with slip and top deck for relaxing, entertaining or enjoying the beautiful view. Ground level features storage room and full bath perfect for rinsing off after a swim. Sit on the long porch while listening to the sounds of nature."

Figure 47
Variations in View in Proposed Class












Property-Specific Environmental Conditions

118. In addition to land use, property characteristics, condition and maintenance, and all of the unique features affecting value of waterfront property (shoreline type and length, water access, elevation and terrain, and view), property-specific environmental conditions must be addressed when analyzing property value and any impact to that value. Many properties throughout the proposed class area have their own unique environmental conditions (e.g., septic fields, junk piles, wood-burning fireplaces, underground storage tanks, herbicides, and pesticides) that influence whether or how alleged environmental contamination might affect value. As with so many other considerations, it is not only the property-specific environmental conditions that must be addressed but those of surrounding properties as well:

> "Analysis of a site's environment focuses on the interrelationships between the appraised site and neighboring properties. The effects of any hazards or nuisances caused by neighboring properties must be considered."[139]

119. Presence of these conditions would likely be identified and addressed in an individual property appraisal but are typically not available in the publicly available data, yet these factors can have significant impact on property values and influence whether and how a property value is impacted by an environmental condition.

120. Examples of the diverse land uses throughout the proposed class, all of which have potential for their own property-specific environmental conditions as well as influence the surrounding property values, are illustrated in the photographs below. These demonstrate another value-driving factor that must be an individual, property-specific inquiry.

[139] The Appraisal of Real Estate, 15th Edition, p. 185

Figure 48
Potential Property-Specific Environmental Conditions in Proposed Class Area

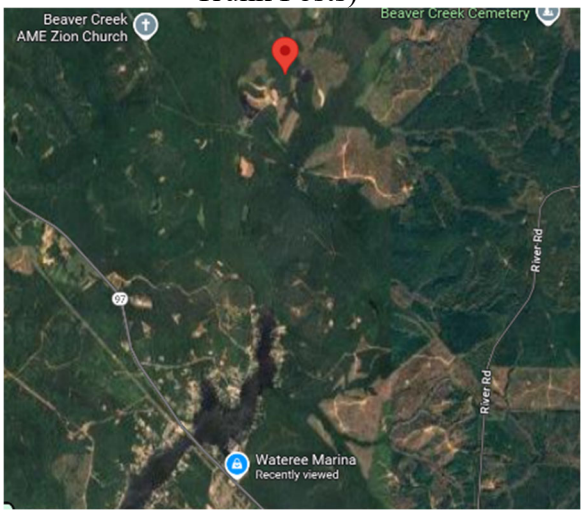
Proximity to Road Traffic



Fuel Storage Tanks[140]



Historic Property (Early Gas Station with Trunk Posts)[141]



Wood Rot and Termite Damage[142]



[140] https://www.dutchmanmarina.com/fuel/
[141] South Carolina Historic Properties Record (https://schpr.sc.gov/index.php/Detail/objects/24317) – "Difficult to view or photograph due to overgrown vegetation. Early gas station with trunk posts."; Google Maps
[142] https://www.zillow.com/homedetails/1497-Carl-A-Horton-Rd-Camden-SC-29020/83204416_zpid/; Columbia MLS 592461

Neighborhood Factors

121. Lastly, the unique combination of neighborhood factors must be accounted for at each of the nearly 2,800 properties in the proposed class. Lake Wateree spans unincorporated portions of three counties – Kershaw, Fairfield, and Lancaster. Each of these counties varies in its tax structure, municipal services offered, and the quality and proximity of schools.[143]

Figure 49
Proposed Class by County

County	Total Waterfront	Proposed Class
Fairfield	1,348	1,335
Kershaw	1,440	1,425
Lancaster	6	0
Total	**2,794**	**2,760**

122. Although not a relevant factor for Mr. Jones[144], proximity and quality of schools is a key factor for many property owners and potential purchasers who are seeking a primary residence. For example, current and future owners may have school age children or want to be aware of school locations for traffic, employment, community activities, or future marketability of the property.

123. The properties in the proposed class are located in Kershaw County School District or Fairfield County School District. The individual school ratings – which vary from "1 – Below Average" to "10 – Above Average" – are shown in the table below.

[143] https://www.kershaw.sc.gov/; https://www.fairfieldsc.com/; https://www.lancastercountysc.gov/
[144] Jones deposition, p. 94

Figure 50
School Ratings in the Proposed Class Area

School Name	Great Schools Rating[145]
Fairfield Central High School	4 – Below Average
Fairfield Elementary School	1 – Below Average
Fairfield Magnet for Math and Science	10 – Above Average
Fairfield Middle School	5 – Average
Geiger Elementary School	5 – Average
Lugoff - Elgin High School	5 – Average
Lugoff - Elgin Middle School	4 – Below Average
Lugoff Elementary School	6 – Average
McDonald Green Elementary School	7 – Above Average
North Central Elementary School	4 – Below Average
North Central High School	5 – Average
North Central Middle School	5 – Average

124. Lastly, while Lake Wateree is centrally located to Charlotte, Columbia, Charleston, and other cities, the distance and ease of travel to each of these locations varies widely depending on the specific location a particular property is located on at the lake. Being located on the east versus west side of the lake, or the north versus south side of the lake, is an individual owner preference that can affect value for a particular property and must be evaluated on an individual basis.

Conclusion: Opinion 1

125. Land use, property characteristics, condition and maintenance, shoreline type and length, water access, elevation and terrain, view, property-specific environmental conditions, and neighborhood factors are just some of the property-specific characteristics that drive unimpaired value and influence whether, and to what degree, that value is influenced by an environmental condition. These factors are not purely additive; instead an analysis of property value must consider how these complex factors interrelate for a specific property and a specific owner at a specific point in time, which can only be properly and adequately addressed on an individual property and individual owner basis.

126. The next section describes how property-specific physical impact, property value diminution (i.e., cost effects, use effects, and risk effects), and causation are affected by individual characteristics and must be addressed on an individual property and individual owner basis.

[145] Greatschools.org

Opinion 2: When evaluating potential property value diminution due to alleged environmental contamination, individual real property and property owner issues are more important considerations than any common issues.

127. Property value diminution, if any, must be evaluated on an individual property and individual owner basis. First, physical impact to a particular property must be established. Once physical impact is established, impact to property value must be examined and established. Finally, should impact to property value be established, the cause of the impact to property value must be identified on an individual property basis and cannot be assumed.

Individual Factors are More Important Than Common Factors with Regard to Physical Impact

128. According to the South Carolina Department of Environmental Services ("SCDES"), there are currently 67 rivers and lakes in South Carolina with fish consumption advisories, including Lake Wateree.[146] According to valuation literature, this is not uncommon:

> "Virtually all water supplies are naturally contaminated. Even without man-made contamination, waterways have a host of naturally occurring conditions that result in substantial environmental risks. These contaminants include salts, biological matter, disease-carrying organisms, animal wastes, alkaloids, pathogenic bacteria, viruses, and parasites. Arsenic, copper and lead also occur naturally in sediment."[147]
>
> "Furthermore, the presence of contamination must be considered in the context of the overall purchasing decision criteria, and the realities of industrialized society. While nobody goes out of their way to live or work near a contaminated waterway, the larger question is whether or not the issue has a material impact in the market, when considered along with the host of other relevant real estate issues. This could include location, square footage, amenities, access, and the proximity to work, schools, shopping, and places of worship. With waterways, clearly the view amenity itself is an important valuation consideration, as is the fact the many waterways are already contaminated, naturally or otherwise. Contamination does not automatically translate into a diminution in value; indeed, 'a property is innocent until proven guilty. For a property to be 'guilty' of any diminution in value, there must be clear, relevant, and objective market data.'"[148]

129. In this matter, Plaintiffs allege,

> "Since at least 2009, Lake Wateree has also been continuously subject to SCDHEC's [South Carolina's Department of Health and Environmental Control] restrictive consumption guidance based upon unsafe levels of PCBs detected in multiple species of fish within the water."[149]

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[146] https://des.sc.gov/programs/bureau-water/aquatic-science/fish-consumption-advisories
[147] Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 345-346
[148] Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 347
[149] First Amended Complaint, para. 63

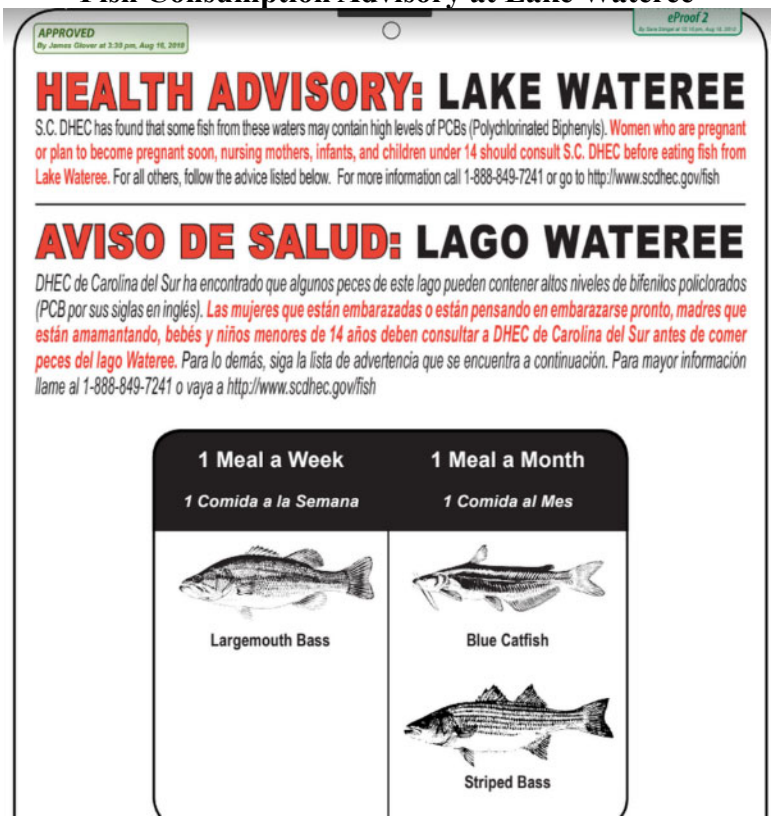
"As of the date of this filing, SCDHEC has issued fish consumption restrictions for six (6) species of Lake Wateree fish. While this list of species is routinely updated, and changes regularly, SCDHEC has consistently advised against regular consumption of fish from Lake Wateree. These perpetual consumption advisories confirm the continued presence of PCBs in Lake Wateree through the positive presence of PCBs in the tissues of these fish."[150]

130. According to SCDES, the current fish consumption advisory on Lake Wateree includes the following recommended limits:[151]

- One meal per week - Black Crappie
- One meal per month - Blue Catfish, Channel Catfish, Largemouth Bass, Striped Bass, White Bass

131. An example of the posted advisory is shown below.[152]

Figure 51
Fish Consumption Advisory at Lake Wateree



[150] First Amended Complaint, para. 64-66
[151] https://des.sc.gov/data-tools/fish-consumption-advisories/lake-wateree-fish-consumption-advisory
[152] https://www.thestate.com/news/local/environment/article285662247.html

132. Per the valuation literature, the response to fish consumption advisories is an individual decision:

> "Some anglers will either catch and release, or check fish advisories and only then carefully clean and cook their catch. Others may consider the seemingly never-ending barrage of environmental warnings, the practicalities of water movement, and the mobility of fish, and look at these advisories with some skepticism."[153,154]

133. Mr. Jones confirmed this sentiment, "I think the general public is allowed to make their own decisions on whether they fish or not in Lake Wateree."[155] According to Mr. Jones, he has had no conversations with potential renters about the fish advisories, "The public signs, I think, speak for themselves."[156]

134. According to Mr. Jones, they warned renters about the use of the lake "when the water was drawn down" due to the dam project, but that is the only lake-related warning they have provided. With regard to discussing his concerns about PCBs with renters, Mr. Jones testified, "I just – I haven't thought about that."[157] Per Mr. Jones, "The public's been advised." . . . "I have no idea what a renter would do to research what is – what they do at the lake."[158]

135. Lastly, water access and interaction with the lake is a highly individualized assessment based not only on critical property features such as shoreline type and length, type and condition of water access, and elevation and terrain, but also on the type, frequency, and intensity of activities that an individual chooses to participate in at a lakefront property. Activities may include water-based activities such as boating, fishing, swimming, kayaking, paddleboarding, or floating as well as non-water-based activities such as hiking, birdwatching, entertaining, relaxing, lawn games, gardening, and more.

Conclusion: Physical Impact

136. The presence, type and degree of physical impact, if any, varies widely when present and cannot impact the proposed class in a uniform way. Physical impact must be studied and determined on an individual property basis. Lastly, just because one property that is physically impacted may experience property value diminution, it does not imply that every property that is physically impacted will also experience property value diminution nor can the experiences of a single class representative be extrapolated across a proposed class of thousands of properties and owners:

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[153] Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 345
[154] For example – see https://des.sc.gov/sites/des/files/docs/FoodSafety/Docs/cook.pdf - "Cleaning and Cooking Fish to Reduce PCBs" – "You can reduce your exposure the PCBs by the way you prepare the fish. PCBs are found in the fatty part of fish. By cleaning or cooking fish to reduce fat, you can also reduce the amount of contaminants you eat."
[155] Jones Deposition, p. 192
[156] Jones Deposition, p. 191
[157] Jones Deposition, p. 188-189
[158] Jones Deposition, p. 197

> "All situations of environmental contamination do not inexorably lead to a reduction in the pricing and value of real property. An appraiser must not assume that the market will react in a certain way to environmental contamination when the assumed reaction has not been clearly demonstrated in observed market transaction data. Such opinions and conclusions are nothing more than speculation and should be avoided."
>
> "However, the realities of both nature and industrialized society are such that pristine and clean waterways rarely exist. Accordingly, the question of whether a property owner would want to buy next to a clean river or a contaminated river is not based in reality, as virtually all waterways have periods of natural or man-made environmental contamination."[159]

Individual Issues are Most Relevant with Regard to Property Value Impact

137. If property-specific physical impact was confirmed, the next step would be to determine whether there has also been an impact to property value, which cannot be assumed:

> "There is often a predisposition to believe that detrimental conditions automatically have a negative impact on property values. However, it is important to keep in mind that if a property's value is to be affected by a negative condition, whether internal or external to the property, that condition must be given enough weight in the decision-making process of buyers and sellers to have a material effect on pricing relative to all the other positive and negative attributes that influence the value of that particular property."[160]

138. Under proper valuation methodology and the guidance of Advisory Opinion 9 and Guide Note 6, the next step is to compare the unimpaired and impaired value for that property using a market-based analysis of property-specific cost effects, use effects, and risk effects.[161] As with physical impact, individual factors are most important—cost effects, use effects, and risk effects must be considered on an individual property basis.

139. Per Advisory Opinion 9, "Cost effects primarily represent deductions for costs to remediate a contaminated property. These costs are usually estimated by someone other than the appraiser, and should include consideration of any increased operating costs due to property remediation. The appraiser should also be aware that the market might not recognize all estimated costs as having an effect on value."[162]

140. Guide Note 6 further describes the individual nature of cost effects:

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[159] Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 351
[160] Real Estate Damages (2016), p. 314
[161] "There are well established and generally recognized and accepted analytical techniques and methods to determine how the cost, use, and risk factors referenced in [Advisory Opinion 9] affect property prices, values, and markets. Appraisers must avoid substituting their judgement for that of the marketplace. All of the techniques require consideration of market data in arriving at the impaired values. Contamination does not always have an adverse effect on value. The influence of environmental impairment on real property must always be found in the marketplace." The Appraisal of Real Estate, 15th Edition, p. 189
[162] The Appraisal Foundation, USPAP Advisory Opinions 2024 Edition, Advisory Opinion 9

> "Accordingly, prerequisites for such a deduction would be: (1) that the property was contaminated with concentrations of hazardous materials above appropriate regulatory standards; (2) that the costs were necessary for remediation of the property; and (3) that the costs would be borne by a prospective purchaser of the property rather than by a third party such as the current owner or the owner of adjacent property or some other third party responsible for the remediation."[163]

141. By definition, cost effects are tied to property-specific physical impact which by the Plaintiffs' own allegations must vary widely within the proposed class. The specific investigation, remediation, and monitoring activities, and who is responsible for paying for any such activities, required on a given property will vary based on property-specific factors and cannot and should not be assumed on a class basis.[164]

142. Per Advisory Opinion 9, "Use effects reflect impacts on the utility of the site as a result of the contamination. If the contamination and/or its cleanup rendered a portion of the site unusable, or limited the future highest and best use of the property, then there could be a use effect on value."[165]

143. The Appraisal Institute cautions, "However, the appraiser should be aware that not all site use limitations will have an effect on market value and it is the market and its reaction, as borne out in actual market data, to these limitations that should be the primary focus of the appraiser's work in estimating use effects."[166]

144. As discussed above, land use and any impacts to highest and best use are a property-specific, individual inquiry. Use impacts cannot be generalized and cannot be assumed on a class basis.

145. Lastly, per Advisory Opinion 9, "Risk effects are typically estimated by the appraiser and often represent the most challenging part of the appraisal assignment. These effects are derived from the market's perception of increased environmental risk and uncertainty. The analysis of the effects of increased environmental risk and uncertainty on property value (environmental stigma) must be based on market data, rather than unsupported opinion or judgment."[167]

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[163] https://www.appraisalinstitute.org/insights-and-resources/resources/standards-of-professional-practice/guide-notes

[164] Further, as Bell notes, there are unlikely to be cost effects for any member of the proposed class: "The real estate in proximity to contaminated waterways usually is non-source property, meaning that the property owners do not own the source of contamination and have no financial liability for cleanup. Generally, the possibility of paying cleanup costs alone is a major factor in determining the impact that environmental issues have on property values. As cleanup risk is usually not applicable to individual property owners adjoining waterways, the market may not factor these non-source contamination issues into the prices paid." Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 351-352

[165] The Appraisal Foundation, USPAP Advisory Opinions 2024 Edition, Advisory Opinion 9

[166] https://www.appraisalinstitute.org/insights-and-resources/resources/standards-of-professional-practice/guide-notes

[167] The Appraisal Foundation, USPAP Advisory Opinions 2024 Edition, Advisory Opinion 9

146. Risk effects cannot be assumed and do not always occur, even when there is evidence of physical impact (which is not the case here). According to the literature, whether a particular property experiences risk effects is affected by the individual factors that drive value for that property:

> "The most significant issue in assessing the consequences of a detrimental condition on residential property values is the general predisposition of people to believe that detrimental conditions affect residential property values. . . . If market value is going to be affected, then this particular attribute has to be given enough weight in the decision process of buyers and sellers to have a material effect on price. In other words, the detrimental condition issue has to be important relative to all the other variables that influence the home purchase decision (public safety, quality of schools, access to employment, church or synagogue, or friends and relatives, special features of the home, affordability, etc.). Like any detrimental condition, an analysis of market data is necessary to determine if the issue causes a diminution in value or if it is a . . . benign condition."[168]

147. Thus, risk effects for a particular property are influenced by the same property-specific characteristics that drive unimpaired value, and, as with unimpaired value, must be considered on an individual basis. It is not proper methodology to assume that risk effects will occur across an entire class of properties:

> "Failing to research and apply relevant market data is the single most common flaw noted in the analysis of detrimental conditions. While preconceptions about the analysis of detrimental conditions do exist, questions can only be resolved with relevant market data. The effect of a detrimental condition cannot be generalized and is unique to a particular market and the facts of a particular property at a specific date of value."[169]

Conclusion: Property Value Impacts (Cost Effects, Use Effects, and Risk Effects)

148. Proper appraisal methodology requires a property-specific analysis of the cost, use, and risk effects that comprise potential property value diminution. Individual factors are the most important considerations, and it is not appropriate or proper methodology to assume cost, use, or risk effects across an entire class.

Individual Issues Determine Causation

149. Next, if a property-specific physical impact and a property-specific impact to value have been established using the methodology outlined above, causation still must be determined. It is not appropriate to assume that a physical impact is automatically the cause of an impact to value:

[168] Real Estate Damages (1999), p. 38
[169] Real Estate Damages (2016), p. 323 (emphasis added)

"In determining the impact on value, it is critical that a distinction be made between the detrimental condition and unrelated issues."[170]

"It is also important to keep in mind that the observation of value diminution does not automatically reflect causality with respect to a detrimental condition. Some challenges in this regard might include:

- Distinguishing the effects of a detrimental condition, which often occur over a significant period of time, from the effects of market conditions
- Distinguishing the effects of a detrimental condition from simple proximity to other disamenities
- Distinguishing the effects of a detrimental condition from other sources of neighborhood change, such as public education opportunities, transportation patterns, and the location of employment centers and shopping facilities"[171]

150. The determination of causation requires addressing numerous property-specific factors that can only be evaluated on an individual property and individual owner basis.

"It is important to understand the subject's market segment as well as the basic characteristics of the property in an unimpaired condition. A crack running through a warehouse floor may be perceived quite differently from the same crack running through the living room of a single-unit home. Buyers of upscale luxury housing might be very sensitive to amenities, as opposed to the more price-sensitive buyers of entry-level housing. Property owners in an urban area may have an entirely different perception of external disamenities as compared to property owners in a suburban or rural area. Older neighborhoods often have much different dynamics than newer neighborhoods or planned communities. Reactions to a detrimental condition might differ based on market conditions. All of these dynamics can influence market perceptions and ultimately affect value, sometimes independently of the underlying issues."[172]

151. A proper, property-specific analysis of causation, unique to a particular owner at a particular point in time, must consider several critical factors, such as changing property conditions, changing neighborhoods, or changing market conditions.

Changing Property-Specific Conditions

152. Property-specific conditions (or those of surrounding properties) may contribute to a decline in value that has nothing to do with the physical impact. For example, the condition of a property may deteriorate over time, the condition of surrounding properties may deteriorate having a negative impact on a nearby property, surrounding land uses may change, or a property may develop unique environmental or structural issues that negatively affect value.

[170] Real Estate Damages (2016), p. 30
[171] Real Estate Damages (2016), p. 314
[172] Real Estate Damages (2016), p. 314

Figure 52
Changing Property Conditions – Class Representative's Dock

VRBO Listing (Date Unknown)



Site Visit (October 2025)

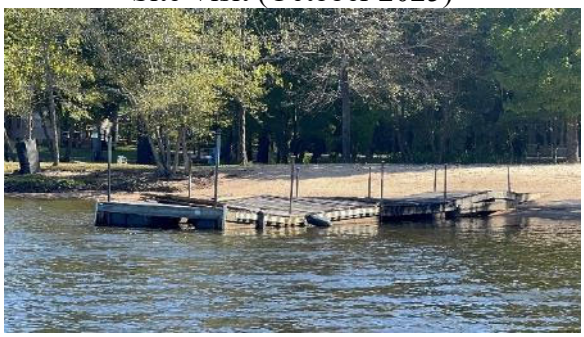


Figure 53
Changing Property Conditions – 2279 Horton Acres Lane
"House has no value due to a fallen tree."[173]







[173] https://www.zillow.com/homedetails/2279-Horton-Acres-Ln-Camden-SC-29020/83198422_zpid/?mmlb=g,6

Figure 54
121 Rion Circle
Partial Demolition, New Construction, and Remodel[174]





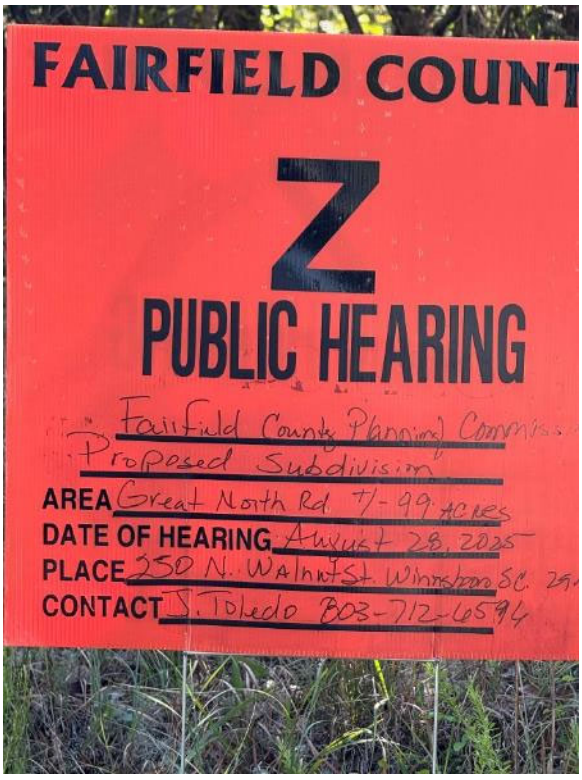

[174] Columbia MLS 561809 - "The fish are biting and spring fever is high! This remodeled 4 bedroom home sits along the shores of Dutchman Creek where the channel runs close to the shoreline so this property still has around 4 feet of water during the drawdown - 8 feet or so at normal water level! A portion of the home was demolished and rebuilt with new construction, and all mechanicals have been updated - new hvac system, new tankless hot water heater, new electrical, and new plumbing! Sod grass and gravel and stone landscaping accent the coastal/lakeside vibe of this 1 story home. Lots of sittin' & sippin' areas - multiple screen porches, multiple decks, covered gazebo on dock, and outside kitchen to grill or fry up the catch of the day!"; https://www.realtor.com/realestateandhomes-detail/121-Rion-Cir_Winnsboro_SC_29180_M67235-93226

Changing Neighborhoods

153. As discussed, neighborhood factors can have a significant influence on property value, and these factors are not stagnant but change over time. For example, numerous residential and commercial properties have been built over time at Lake Wateree, traffic patterns have changed as population growth has occurred and retail and employment centers have shifted, and infrastructure has been added to support the growing population. Meanwhile, other properties have been abandoned or left vacant, businesses have closed, and once prosperous areas have become less so. All of these shifting patterns of people and economic activity can affect property value and can be a potential source of property value diminution that must be addressed relative to the value of a specific property and a specific owner as of a specific point in time.

154. For example, the Fairfield County Planning Commission recently held a public hearing for a new residential development "Arrowhead Cove" at Lake Wateree.[175] While some residents and prospective buyers view new residential construction as a positive factor, others view the increased traffic and loss of views and natural areas as a negative impact to the community.[176]

Figure 55
Notice of Planning Commission Hearing for Proposed Residential Development[177]



[175] https://www.wltx.com/article/news/local/lake-wateree-arrowhead-cove/101-f7a5cb45-bc7d-449a-ad59-c3b74eaedb74

155. Another example of changing neighborhood conditions is partially complete or abandoned new construction. During the site visit, I observed partially complete construction and a decaying, dilapidated dock at 3471 Rockbridge Road. The clearing of the site, the partial construction, and the incompleteness of the site affect not only this property's value but also the surrounding property owners' view and potential impact to their property values.

Figure 56
Incomplete Construction



Changing Market Conditions

156. As with changing property-specific conditions and changing neighborhood conditions, changing market conditions affect property value and any impact to value and must be addressed on a property-specific basis before the causation of any property value diminution is determined:

> "In a hot sellers' market, value and price tend to firm up, and buyers tend to be willing to assume more risk with less discount than during gloomy economic times. Thus, the place and time of a transaction in the economic and market cycle is an important factor that may mitigate (or aggravate) the impact of contamination on value and price."[178]

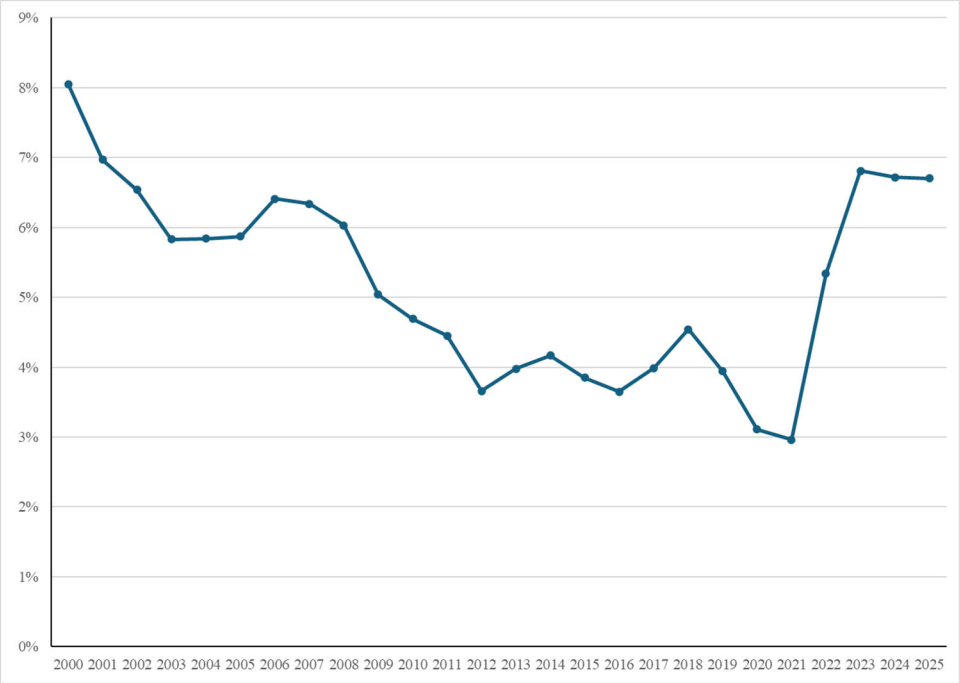
157. Numerous market conditions are present at any given time, including financial booms and recessions, housing bubbles and crashes, rising or falling inflation, rising or falling interest rates, and changing lending or regulatory climates. All of these factors can affect

[176] https://www.facebook.com/photo/?fbid=2476842969380281&set=gm.10163195687097177&idorvanity=64413932176
[177] https://www.facebook.com/photo/?fbid=2476842969380281&set=gm.10163195687097177&idorvanity=64413932176
[178] Allan E. Gluck, et al., "Mitigating Factors in Appraisal & Valuation of Contaminated Real Property", Real Estate Issues, Summer 2000, p. 27

property value (and any impact to that value) and must be considered relative to a specific property and a specific owner as of a specific point in time.

158. From the time of Mr. Jones' purchase in 2001 through current, the market has experienced several of these periods, illustrated by the changes over time in the 30-year fixed mortgage rate. The timing of a property's valuation relative to the market conditions at that time, as well as to the individual owner's timing of purchase and sale, is an individual assessment that must be accounted for to accurately and adequately address property value, any diminution to that value, and any resulting damages experienced by a particular individual.

Figure 57
30-year Fixed Mortgage Rate[179]



Conclusion: Causation

159. As with physical impact and property value diminution, causation can only be adequately addressed on an individual property basis. Physical impacts should not be assumed to be the cause of property value diminution without fully addressing all of the potential sources of property value diminution. As the literature cautions, causality cannot be assumed:

> "It is never appropriate to generally assume that a detrimental condition causes a loss in value or to assume value diminution in the absence of supporting data."[180]

[179] https://fred.stlouisfed.org/series/MORTGAGE30US
[180] Real Estate Damages (2016), p. 324

Opinion 3: Economic damages related to real estate impacts (including property value diminution or loss of use and enjoyment) can be accurately and adequately determined only on an individual property and individual owner basis.

160. Real estate damages must be determined on an individual property and individual owner basis. It is not acceptable methodology to assume that all properties that experience property value diminution result in real estate damages. Like physical impact, property value diminution, and causation, real estate damages can only be adequately addressed on an individual property and individual owner basis:

> "It is a common misconception that there is a uniform market price discount for contaminated properties. . . . Even if transactions involving comparable property types and environmental conditions are available, the pricing may have been affected by business considerations, such as the need for a particular location, the need to close the second leg of a tax deferred exchange, or private agreements between parties for mitigation of contamination costs. It is therefore necessary in each case to undertake a careful analysis of the applicable method of determining unimpaired value and the various aggravating and mitigating factors that are relevant to a determination of the impairment to value, . . ."[181]

> "The neighborhood comparative study looks at a large number of transactions to see whether generalizations can be made for an area impacted by a detrimental condition. An appraiser or analyst must recognize that if some systematic effect of the detrimental condition does reveal itself in the analysis of a neighborhood in the aggregate, the effect on individual properties must still be quantified if applicable."[182]

> "It is important to understand that in detrimental condition analysis there are no "off the shelf" solutions; . . . In fact, it is entirely possible for the same detrimental condition to result in different value impacts in different markets or at different times."[183]

161. Damages are unique to a particular property and a particular owner as of a particular point in time:

> "Damage to value is a time-sensitive, ownership-specific issue. Though the value of a property may decrease because of market recognition of a disamenity, a property owner does not automatically suffer damage. . . . A damage is specific to an owner who purchases a property before the condition that led to a diminution becomes apparent to the market, and is limited to the amount by which that owner's 'present worth of future benefits' is diminished. A damage to a subsequent owner generally is not possible if the normal or typical market participant was aware of the disamenity. It is the knowledge of the market that governs, not the knowledge of the individual owner – unless that owner

[181] Allan E. Gluck, et al., "Mitigating Factors in Appraisal & Valuation of Contaminated Real Property", Real Estate Issues, Summer 2000, p. 27-28
[182] Real Estate Damages (2016), p. 36
[183] Real Estate Damages (2016), p. 323

knows of the disamenity and its likely impact on value before it becomes general market knowledge (an insider-knowledge issue)."[184]

"Care should be taken in making inferences from regression analyses of groups of properties to individual properties. Regression models can be used to construct estimates of average (mean) impacts for the category of properties being analyzed. However, individual property impacts may differ substantially from average impacts. In addition, in areas with multiple, adverse influences and/or diverse submarkets and property types, it may not be possible to reliably estimate the effect of a single contamination source through regression analysis."[185]

162. Proper methodology requires a property-specific evaluation of physical impact, property value diminution, causation, and real estate damages. The individual factors that are critical to each of these analyses cannot be adequately or accurately addressed on a class-wide basis:

"Mass appraisal techniques are appropriate for what they are typically used for, i.e., the development of jurisdiction-wide assessments, as their individual property estimation errors tend to average out over a large number of properties. In estimating the value of individual properties, though, errors can be large. This creates problems in a class action context where damages and compensation may ultimately be paid to property owners based on the characteristics of their individual properties."[186]

163. Whether a particular property owner experiences real estate damages is related to many individual factors, including

- Timing of purchase relative to market knowledge,
- Owner type,
- Ownership interest, and
- Occupancy status.

Time of Purchase Relative to Market Knowledge

164. In Kershaw County, the county assessor tracks the most recent recorded deed transfer for each property. Although this data is not readily available for Fairfield County, the limited data from Kershaw illustrates the wide variation in timing of ownership in the proposed class. In Kershaw County, the most recent recorded transfer for properties in the proposed class ranges from 1983 to 2025. This variation in the timing of ownership relative to market knowledge means that each of the proposed class members could not and would not be damaged in the same way.

[184] Albert R. Wilson, "Real Property Damages and Rubber Rulers", Real Estate Issues, Summer 2006, p. 26
[185] Thomas O. Jackson, "Methods and Techniques for Contaminated Property Valuation", The Appraisal Journal, October 2003, p. 316
[186] Thomas O. Jackson, "Real Property Valuation Issues in Environmental Class Actions", The Appraisal Journal, Spring 2010, p. 147

165. In this matter, it is unclear exactly when Plaintiff's allege property value diminution purportedly occurred.

166. The timing of ownership relative to market knowledge (either of the fish consumption advisory, the PCB study, or other alleged conditions) can affect whether and to what degree a property owner is actually impacted, regardless of whether property value has been impacted.

> "Damage to value is specific to the property owner who purchases the property before the disamenity causing the damage becomes known in the market, and is specific only to that owner, and not to successors, because the future market will have recognized the disamenity and adjusted values accordingly. The damage may not affect an owner immediately; market recognition of a damaging impact determines the date of damage."[187]

167. Thus, any property owner who purchased after market knowledge would not be damaged since the purchase price would reflect property value diminution, if any. Only owners who purchased pre-knowledge and sell post-knowledge are potentially damaged, which must be an individual inquiry. Yet the proposed class includes the "current owners" (as of unknown date) of all waterfront property, regardless of whether they purchased before or after the market had any knowledge of fish advisories or PCBs at Lake Wateree.

Owner Type

168. The ways in which an individual and non-individual owner (e.g., churches, rental companies, investment companies, developers, trusts, commercial entities) may be damaged are not the same and must be addressed individually. For example, the impacts to use and enjoyment alleged by the proposed class representative[188] – e.g., inability to consume fish from the lake or to swim the way he used to – would not and could not be experienced in the same way by each of these various entities. Even among all owners of a particular type the ways in which a particular owner uses and enjoys his or her property can vary dramatically and necessitate an individual inquiry.

169. Owner type varies widely in the proposed class area, and currently includes the following,

- Individuals;
- Life estates;
- Trusts, including family trusts, revocable trusts, living trusts, and others;
- LLCs or Partnerships such as Blue Heron Timber LLC or Liberty Hill Land & Timber LLC;
- Commercial entities such as Wateree Marina, Inc., Carolina Piping & Rigging Mgt, Pure Green Inc., and Davis Printing Co Inc.; and

[187] Albert R. Wilson, "Real Property Damages and Rubber Rulers", Real Estate Issues, Summer 2006, p. 30
[188] Jones deposition, p. 111, 118-119, 137-138

- Religious organizations such as the Carolina Conference Association of Seventh Day Adventists.

Occupancy Status

170. Occupancy status also affects whether and to what degree a particular owner is damaged. Some properties within the proposed class are owner-occupied and others are not. Non-owner occupied properties may include vacant properties, properties occupied by a paying tenant, and those occupied by a non-paying tenant such as a friend or family member. Rental income can be a significant driver of property value and must be considered on a property-specific basis. In addition, the length of occupancy as well as the specific period of occupancy for an individual in the proposed class, relative to the property-specific physical impacts at a given property in the proposed class, affect whether and to what degree a potential class member has been damaged, if any, and requires an individual inquiry. Further, the methodology for evaluating damages for an owner-occupied property versus an income property are distinct and require different data and analysis.

171. The Fairfield County and Kershaw County assessors assign specific land use classifications to properties used as a primary residence. Unlike the majority of properties in the proposed class (53%) which are primary residences, Mr. Jones, the proposed class representative, currently uses his property as a part-time rental and for occasional personal family use.[189] Owner-occupied properties, rental properties, and second homes or vacation homes for personal use all have different value-driving characteristics and require different data and different valuation methods to properly evaluate property value, any potential impacts to that value, and whether and to what degree a particular owner is damaged, if any.

Figure 58
Percentage of Proposed Class Properties Used as a Primary Residence

County	Primary Residence	Other
Fairfield	615	467
Kershaw	541	549
Total	**1,156**	**1,016**
Percent	**53%**	**47%**

172. Esri Business Analyst is a data provider that uses data from the U.S. Census Bureau to model demographic data such as housing occupancy by location, including general occupancy status (owner-occupied, renter-occupied, vacant) and vacancy classification (for rent, for sale, seasonal use, etc.). The tables in Figure 59 and Figure 60 approximate this data for the proposed class - 56% are owner-occupied, 4% are renter-occupied, and 40% are vacant.[190] Property-specific data on historical occupancy is not readily available (if available at all). Similarly, the publicly available data does not address whether the improved

[189] Jones deposition, p. 179
[190] Esri Business Analyst

commercial, industrial, agricultural, or exempt properties throughout the proposed class area have been continuously in use or if they are currently in use. This requires an individual inquiry and must be addressed before real estate damages are determined.

Figure 59
Occupancy Status in the Proposed Class (0.25 Mile Buffer)

Variable	Proposed Class
2025 Housing Units	1,872
Owner Occupied	56%
Renter Occupied	4%
Vacant	40%

Figure 60
Vacancy Reasons in Proposed Class (0.25 Mile Buffer)

Variable	Proposed Class	Percent
2020 Total Housing Units by Occupancy	1,880	
Occupied Housing Units	1,133	60.3%
Vacant Housing Units	713	37.9%
For Rent	8	0.4%
Rented, Not Occupied	2	0.1%
For Sale Only	21	1.1%
Sold, Not Occupied	9	0.5%
For Seasonal/Recreational/Occasional Use	604	32.1%
Other Vacant	68	3.6%

Ownership Interest

173. Ownership interest, the type and amount of ownership that a particular person has in a particular property, also varies throughout the proposed class and impacts whether, and to what degree, even different owners of a single property may experience damages. Several examples of varying ownership interests in the proposed class are examined below.

174. *Life Estates*. Approximately 50 properties in the proposed class have a life estate per county assessor records. An individual who holds a life estate has the right to right to use, occupy, and control a property for their lifetime (sometimes referred to as the life tenant).[191] The remainder of the fee simple estate is held by the remainderman, who obtains fee simple interest in the property after the life estate has expired.[192] The property value to the life tenant and to the remainderman are not the same and are not valued using the same methodology. Each requires specific data and analysis that is unique to their individual

[191] The Dictionary of Real Estate Appraisal, 7th Edition
[192] The Dictionary of Real Estate Appraisal, 7th Edition

position and cannot and should not be treated the same as a property held in fee simple interest.

175. *Trusts.* Approximately 150 properties in the proposed class are held in trust, including family trusts, revocable trusts, living trusts, survivors trusts, bypass trusts, and others. A trust is defined as a "temporary, conditional, or permanent fiduciary relationship in which the legal title to, and control of, property are placed in the hands of a trustee for the benefit of another person."[193] As with life estates, special care must be taken to understand the trust relationships and the rights and ownership interests of each party created therein.

176. *Fractional Ownership.* An example of fractional ownership with the proposed class is Beaver Creek Garden Spot, Inc., who owns parcel number 111-02-00-003 (3416 John G. Richards Road) which is 4.3 acres with approximately 875 feet of shoreline located adjacent to Wateree Marina. According to Kershaw County data, this parcel has no building value and no information for year built, improvement size, or building type. However, according to aerial photography and additional Kershaw County records, there are actually 11 individually owned homesites located on this property. The Beaver Creek Garden Spot, Inc. By-Laws indicate that Beaver Creek Garden Spot, Inc. owns and maintains the real estate and that the members of the corporation pay an equal share for the assessment of taxes, insurance, and maintenance as required.[194] One of the individual homes is currently for sale and the agent remarks indicate a cash sale is required.[195] This may be due to the property being unmortgageable due to its unique ownership structure. It is unclear whether the property owners who own the improvements, but not the waterfront parcel itself, are included as members of the proposed class, however, their ownership interest and the particular factors that affect the value of their properties (including the potential lack of mortgageability) and that of the large parcel owned by Beaver Creek Garden Spot, Inc. are individual factors that must be accounted for when evaluating property value and any potential impacts to that value. This further demonstrates why an individual assessment is necessary – based on an analysis of available county data it is not clear whether other examples of fractional ownership exist in the proposed class necessitating an individual evaluation.

[193] The Dictionary of Real Estate Appraisal, 7th Edition
[194] By-Laws of Beaver Creek Garden Spot, Inc.
[195] Columbia MLS 595425 – 22 Garden Spot Rd

Figure 61
Single Parcel Comprising Beaver Creek Garden Spot



Figure 62
Individual Owners of Improvements at Beaver Creek Garden Spot[196]

Parcel Number	Address	Current Owner	Building Type	Improvement Value	Yard Item Value	Total Value
111-02-00-003I-LSE	2 Garden Spot Ln	Broome	SFR	$44,200	$0	$44,200
111-02-00-003A-LSE	10 Garden Spot Ln	Starnes	SFR	$41,300	$4,800	$46,100
111-02-00-003B-LSE	12 Garden Spot Ln	Panoz/Martin	SFR	$54,900	$3,400	$58,300
111-02-00-003C-LSE	14 Garden Spot Ln	Richardson	SFR	$87,800	$0	$87,800
111-02-00-003D-LSE	16 Garden Spot Ln	Moore	None	$0	$1,200	$1,200
111-02-00-003D-MH1	16 Garden Spot Ln	Moore	MH	$15,300	$0	$15,300
111-02-00-003E-LSE	18 Garden Spot Ln	Walters	None	$0	$1,700	$1,700
111-02-00-003E-MH1	18 Garden Spot Ln	Walters	MH	$7,900	$0	$7,900
111-02-00-003F-LSE	20 Garden Spot Ln	Kelley	SFR	$332,500	$4,200	$336,700
111-02-00-003H-LSE	22 Garden Spot Ln	Helms	SFR	$69,000	$10,000	$79,000
111-02-00-003G-LSE	24 Garden Spot Ln	Gardner	SFR	$67,300	$2,800	$70,100

177. *Leased Land.* Similarly, there are other parcels in the proposed class where the land and the improvements are not owned by the same party. For example, at 2380 Beaver Creek Road, Lillie and William Murray own the land (parcel 111-04-00-003) and Randal and Rhonda Bigham own the 1,500 square foot modular home on the land, subject to a Land Lease Agreement executed with the Murrays.[197] It is unclear whether the Bighams are prospective class members and as with fractional ownership, it is unknown to what extent

[196] Kershaw County Assessor
[197] Canopy MLS 3574872; Land Lease Agreement; Kershaw County Assessor

other properties exist with a similar ownership structure throughout the proposed class. Ownership interest must be evaluated on an individual property and individual owner basis.

178. *Partial Ownership.* Unlike ownership as joint tenants with rights of survival, in which co-owners share an undivided 100% ownership in a property and inherit the other's interest upon their death, partial ownership exists when co-owners share a divided interest in a property. Such is the case with Mr. Jones, the proposed class representative, who currently has a 75% interest in the class property at 1778 Sailing Club Road. From 2001 to 2020, Mr. Jones held a 33.3% interest in the property. From 2020 to 2024 he held a 100% interest, and in December 2024 he transferred a 25% interest to his daughter Kathryn J. Demetri resulting in a 75% interest for himself.

179. Mr. Jones' ownership history is summarized in the table below.[198]

Figure 63
Ownership History of 1778 Sailing Club Road

Sale Date	Sale Price	Deed Book/Page	Grantor	Grantee	Jones Ownership
8/4/1998	$70,000	662/259	Shirley Hanley	Williard C. Copp	0%
11/29/2001	$114,900	1083/318	Williard C. Copp	John M. Deal Jr, Clyde M. Jones, and **Clyde M. Jones II**	33.3%
2/17/2016	$0	3485/17	John M. Deal Jr & Clyde M. Jones & Emily C. Jones (Personal Representative of Estate of Clyde M. Jones)	John M. Deal Jr	33.3%
6/2/2020	$46,000	4233/13	John M. Deal Jr and Emily C. Jones	**Clyde M. Jones, II**	100%
12/6/2024	$5	5263/260	**Clyde M. Jones, II**	Kathryn Jones Demetri	75%

180. A divided or partial ownership structure affects whether and to what degree an individual owner has suffered damages, yet it is not always apparent in the publicly available data and must be evaluated on an individual property and individual owner basis.

Conclusion: Opinion 3

181. Proper property value diminution methodology requires a property-specific evaluation of physical impact, property value diminution, causation, and real estate damages. The individual factors that are critical to each of these analyses outweigh any commonalities:

[198] See individual deeds

> "Lastly, all of the foregoing issues, property types, ownership issues, market knowledge, market conditions, changing effects over time, multiple sources and effects, and others tend to have a multiplicative effect on the number of categories of properties and property interests that must be analyzed by the appraiser in determining the extent of any diminution in value on a class wide basis. At some point, common interests may not predominate and it simply becomes untenable to evaluate impacts on a class-wide basis."[199]

Opinion 4: There is no market-based evidence of class-wide property value diminution or loss of use and enjoyment.

Class-wide Damages are Contrary to Actual Market Data

182. The valuation literature and appraisal methodology are clear that any determination of property value diminution and real estate damages must be based on relevant market data:

> "To understand perceptions within the real estate market, market data must be used to measure how the market actually reacts. A property is considered "innocent" until a negative impact is demonstrated through an analysis of relevant market data. The simple assumption that an incident caused a diminution in value is one of the most common errors in the field."[200]

> "When conducting a damage study, analysts must look to the marketplace for answers and analyze what the marketplace data is actually saying. Scientific conclusions about persistence of contaminants do not necessarily correlate with the marketplace's conclusion about the duration of economic impact on real estate. Accordingly, the reliability of the analyst's results must be demonstrated and supported by credible market evidence. For waterways, it would be critical to have studies that identify the full spectrum of contaminants for waterways impacting both the subject (test) areas as well as the comparable (control) data."[201]

> "A waterway contamination assignment typically would focus on application of the sales comparison approach, where market data with the incremental factor is compared to data on properties without the incremental factor. This could take the form of paired sales analyses, time-value studies, case studies, regression analysis, and perhaps survey techniques for market data backup . . ."[202]

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[199] Thomas O. Jackson, "Real Property Valuation Issues in Environmental Class Actions", The Appraisal Journal, Spring 2010, p. 143

[200] Real Estate Damages (2016), p. 1

[201] Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 348-349 [Referencing Richard J. Roddewig, "Temporary Stigma: Lessons from the *Exxon Valdez* Litigation," *The Appraisal Journal* (January 1997): 100 and John D. Dorchester, Jr., "The Federal Rules of Evidence and *Daubert*: Evaluating Real Property Valuation Witnesses," *The Appraisal Journal* (July 2000):306.]

[202] Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 349

183. To evaluate potential risk effects due to the alleged conditions at Lake Wateree, I conducted a preliminary market analysis. I downloaded and reviewed sales data from the two MLS systems serving Lake Wateree – Canopy MLS and Columbia MLS – from January 2010 through August 2025. I reviewed key fields in the data to determine whether each sale was an arm's-length transaction, and I also mapped each sale to determine whether it was waterfront (i.e., part of the proposed class). I next identified two similar lakes in South Carolina – Moultrie and Marion – to use as benchmark lakes for the proposed class. I analyzed trends in sales volume, sale prices, and time on market at all three lakes to determine if there was a divergence in trends that could indicate potential property value diminution. If any indication of potential property value diminution was seen, further property-specific analyses would need to be conducted:

> "The critical consideration in neighborhood comparison is whether there appears to be any change in the relationship between the test area and the control (unimpaired) area after the market becomes aware of the issues related to the detrimental condition; this is usually resolved by observing trends in price or price per square foot. If the trends start to diverge in favor of the control areas after the market becomes aware of a detrimental condition, this suggests that the divergence (i.e., diminution in the test area) is due to the detrimental condition. To reach this conclusion, however, other plausible explanations for the divergence must be investigated; in other words, causality cannot necessarily be assumed."[203]

184. Lake Moultrie is located within Berkeley County and has approximately 210 miles of shoreline, 8 public access points, and covers more than 60,000 acres.[204] Lake Moultrie currently has a fish consumption advisory limiting Bowfin (Mudfish) to one meal per week. The advisory explicitly states there are no restrictions on Black Crappie, Bluegill, Largemouth Bass, Redear Sunfish, Yellow Perch, Blue Catfish, Channel Catfish, Redbreast Sunfish, Warmouth, and Chain Pickerel. There is no warning or advisory related to PCBs at Lake Moultrie.[205]

185. Lake Marion is bordered by Berkeley, Calhoun, Clarendon, Orangeburg, and Sumter counties. It has 511 miles of shoreline, 16 public access points, and covers more than 90,000 acres.[206] Lake Marion currently has a fish consumption advisory limiting Bowfin (Mudfish) and Largemouth Bass to one meal per week. The advisory explicitly states there are no restrictions on Black Crappie, Bluegill, Channel Catfish, Redbreast Sunfish, Warmouth, Blue Catfish, Chain Pickerel, Redear Sunfish, and Yellow Perch. There is no warning or advisory related to PCBs at Lake Marion.[207]

186. The locations of Lake Wateree, Lake Marion, Lake Moultrie, and surrounding cities are illustrated in Figure 64 and a demographic comparison of the three lakes is provided in Figure 65.

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[203] Real Estate Damages (2016), p. 36
[204] https://www.dnr.sc.gov/lakes/moultrie/description.html
[205] https://des.sc.gov/data-tools/fish-consumption-advisories/lake-moultrie-fish-consumption-advisory
[206] https://www.dnr.sc.gov/lakes/marion/description.html
[207] https://des.sc.gov/data-tools/fish-consumption-advisories/lake-marion-fish-consumption-advisory

Figure 64
Benchmark Lakes and Surrounding Cities

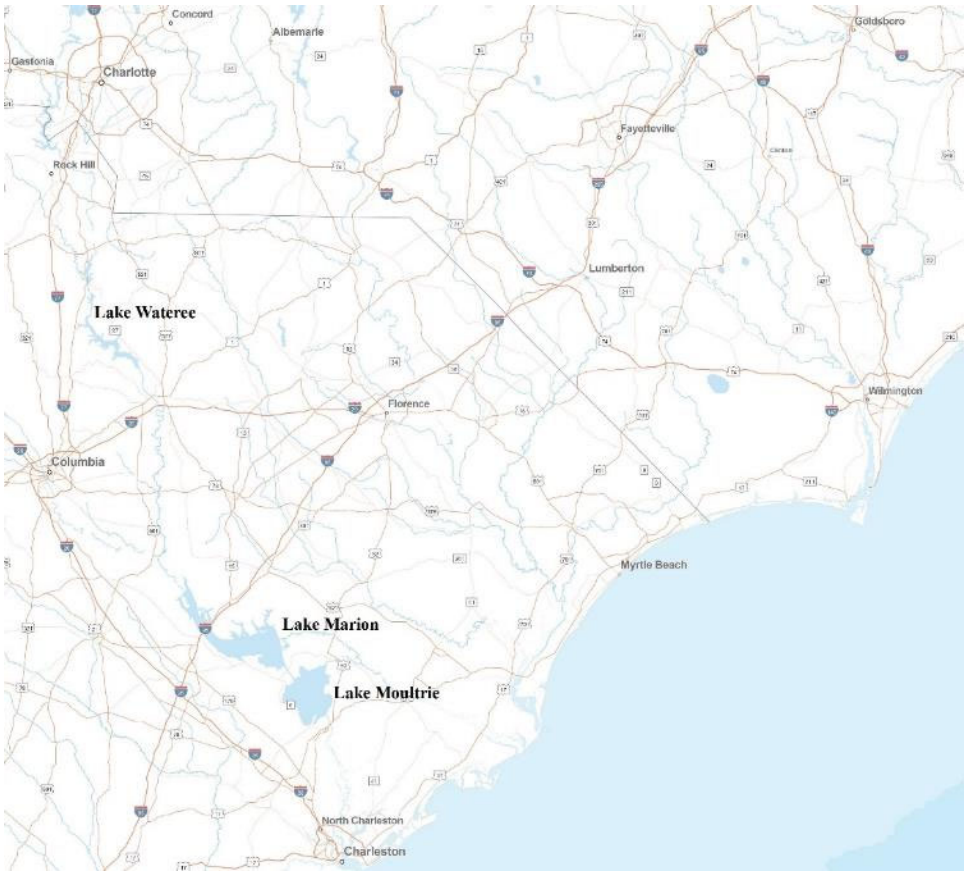


Figure 65
Demographic Summary of Proposed Class and Benchmark Lakes (0.25 Mile Buffers)

Variable	Lake Wateree	Lake Marion	Lake Moultrie
2010 Population	1,843	5,452	2,830
2025 Population	2,186	5,609	3,007
Population Change, 2010-2025	18.6%	2.9%	6.3%
2025 Total Households	1,120	2,929	1,428
2025 Average Household Size	1.95	1.91	2.11
2025 Median Age	60.7	59.5	53.9
2025 Unemployment Age 16+	0.7%	3.7%	7.2%
2025 Population 25+ Bachelor's Degree or Higher	34.4%	20.5%	29.2%
2025 Median Household Income	$95,417	$56,083	$80,112
2025 Housing Units	1,872	4,912	1,787
Owner Occupied	55.8%	51.3%	69.6%
Renter Occupied	4.1%	8.3%	10.4%
Vacant	40.2%	40.4%	20.1%
2025 Median Home Value	$430,189	$247,016	$368,414

187. In Figure 66 and Figure 67, the number of arm's-length sales of single-family homes on waterfront properties at each lake is illustrated. Sales for 2025 are annualized.

188. As these charts illustrate, sales volume rose sharply in the proposed class between 2010 and 2017 and again from 2019 to 2021 before steeply declining through 2024, driven largely by increasing interest rates. Lake Marion exhibited a similar pattern in sales volume throughout the period analyzed, while Lake Moultrie has historically had consistently lower volume (and fewer spikes or declines in activity) than the other two lakes.

Figure 66
Number of Arm's-length Sales

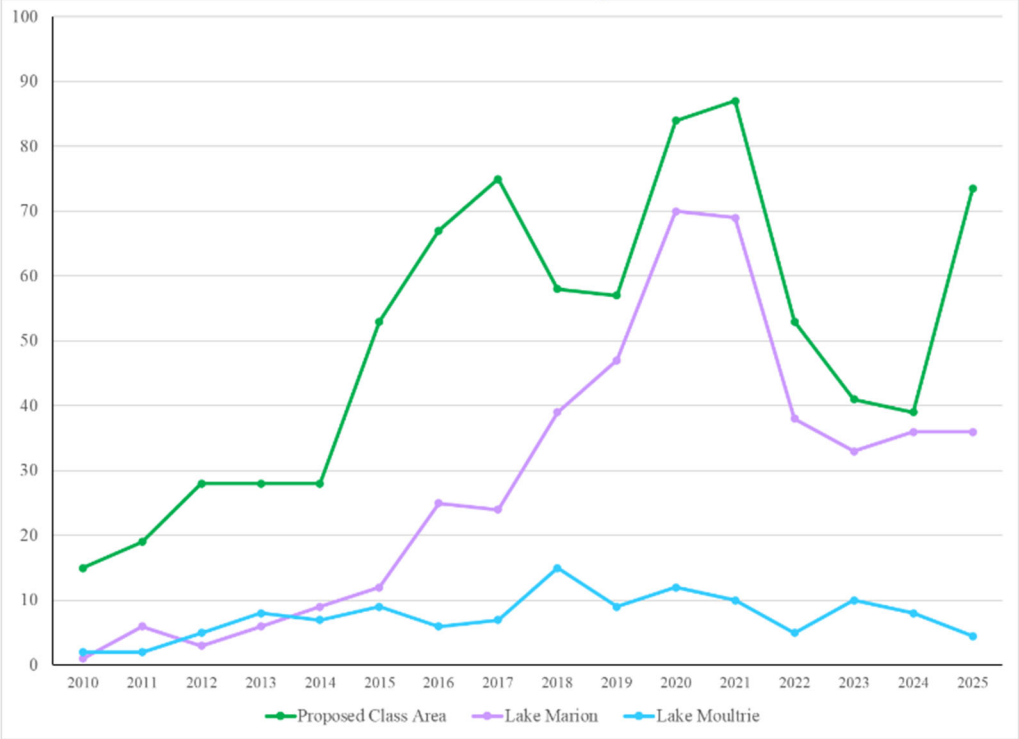
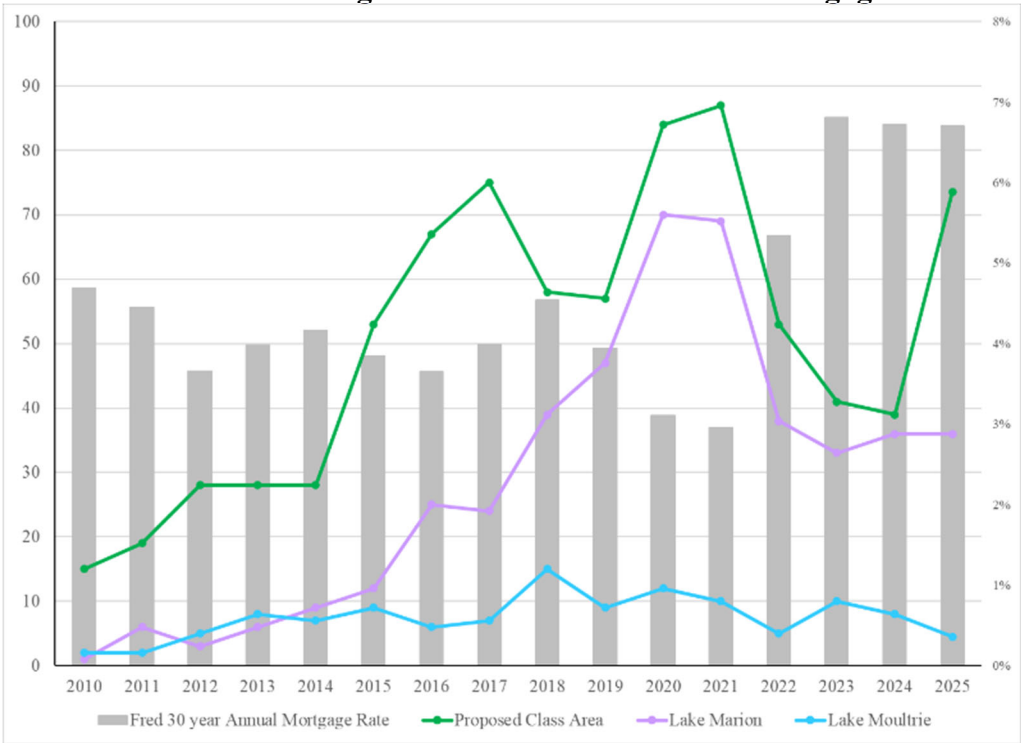


Figure 67
Number of Arm's-length Sales with 30-Year Fixed Mortgage Rate



189. In Figure 68, Figure 69, and Figure 70, I analyze sale prices in the form of average sale price, average sale price per square foot, and average sale price as a percentage of list price.

190. As these charts illustrate, sale prices in the proposed class have trended consistently with price trends at both Lake Moultrie and Lake Marion. All three markets have exhibited consistent growth in average price and average price per square foot throughout the period analyzed, with Lake Wateree exhibiting particularly strong growth in average price per square foot from 2020 through 2024.

Figure 68
Average Sale Price

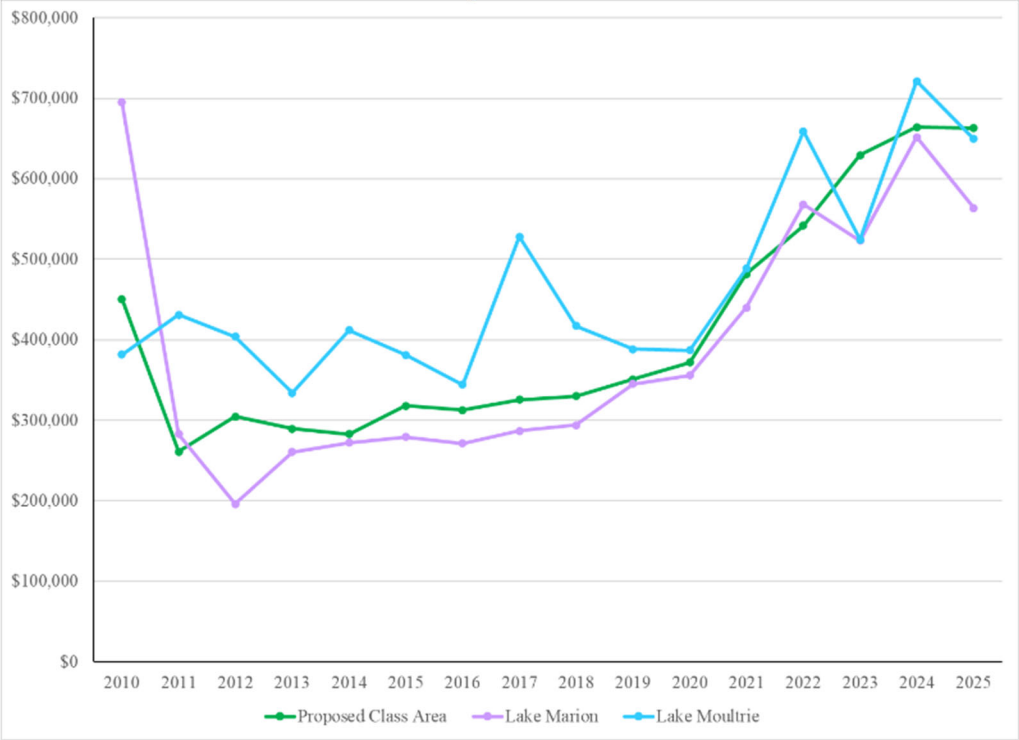


Figure 69
Average Sale Price per Square Foot

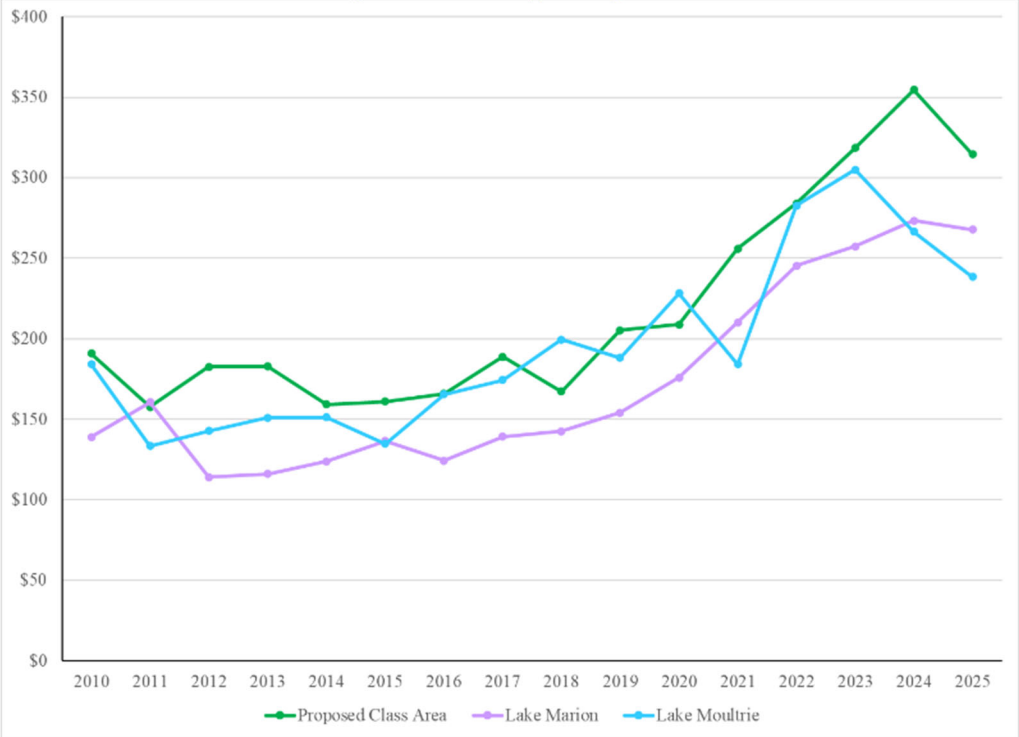
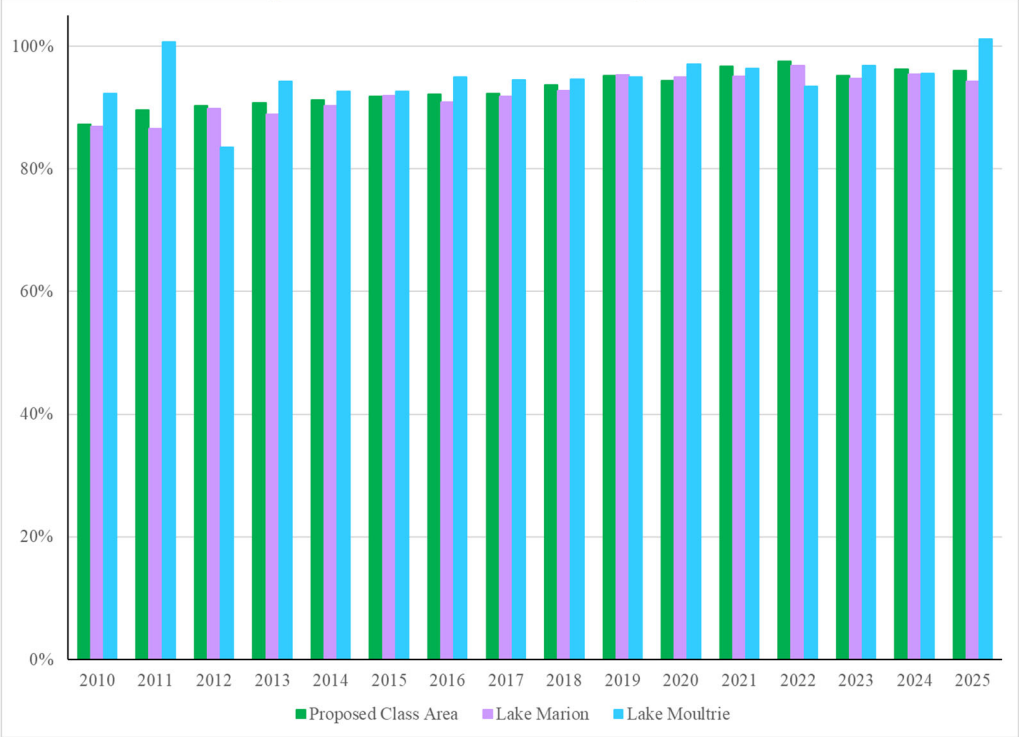
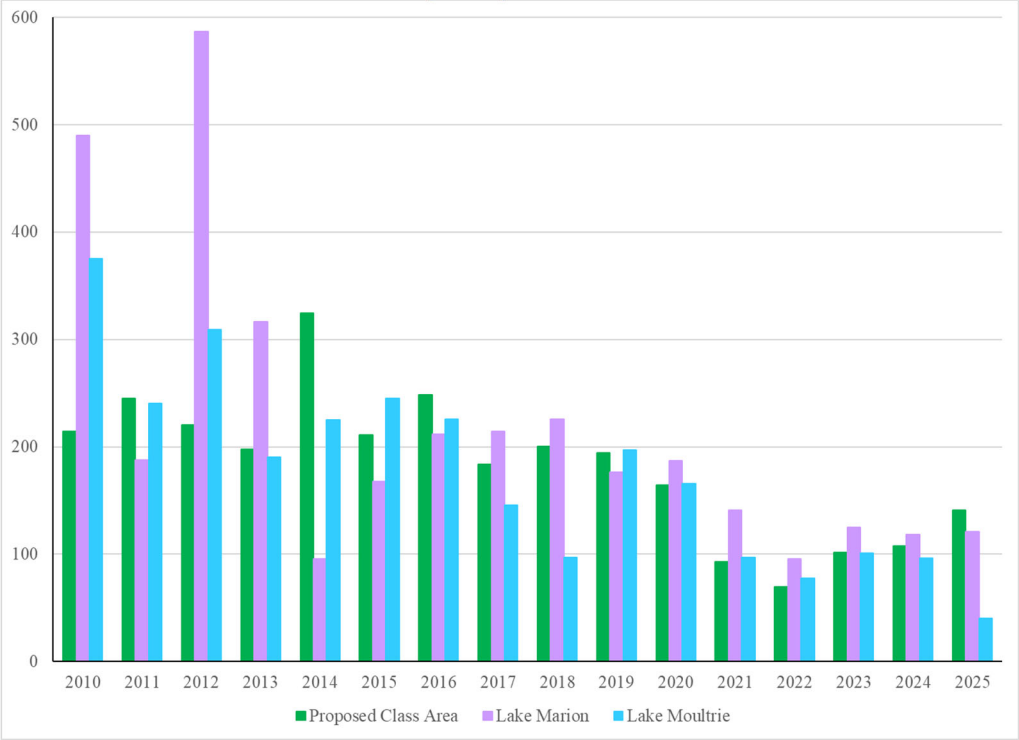


Figure 70
Average Sale Price as a Percentage of List Price



191. In Figure 71, I analyze time on market using average days on market (i.e., the time between list date and closing date). Time on market decreased steadily in the proposed class from 2014 through 2022 and has risen slightly from 2023 to 2025, following similar patterns at the benchmark lakes.

Figure 71
Average Days on Market



192. Based on this preliminary trend analysis, there is no market-based evidence of class-wide impacts to sales volume, sale prices, or time on market at Lake Wateree due to any of the alleged conditions. If any potential impacts to the proposed class area had been found, further investigation on a property-by-property basis would still be needed.

Sale of Phillips Property

193. In the First Amended Complaint, Dennis and Deborah Phillips are also designated as class representatives. However, Mr. and Mrs. Phillips sold their Lake Wateree property (2284 Beaver Creek Road) in May 2025 and are no longer proposed class representatives.

194. The Beaver Creek Road property is a four bedroom, four bathroom single family home with 2,070 square feet built in 1981.[208] It has approximately 106 feet of shoreline and a dock. Mr. and Mrs. Phillips purchased the property in August 2014 for $283,000 for use as a second home (based on the "second home rider" attached to their mortgage at the time of

[208] Kershaw County Assessor; Canopy MLS 4205162

purchase and their mailing address in Cherokee County).[209] It was listed for sale in December 2024 for $675,000 and sold on May 21, 2025 for $635,000.[210] The new owner financed the entire purchase price through the VA.[211]

195. Confirming the lack of market impacts demonstrated in the charts above, Mr. and Mrs. Phillips sold for a profit of $392,000 representing 124.4% total appreciation and 7.8% average annual appreciation for each year they owned the property. Their sale price per square foot of $307 was near the 2025 average price per square foot for Lake Wateree of $314 and well above the 2025 average price per square foot at Lake Moultrie ($234) and Lake Marion ($264).

196. The MLS listing described the property as follows:

> "Beautiful home located in popular Beaver Creek at Lake Wateree. Home features a spacious great room with wood burning fireplace and hardwood floors. Upper owners suite highlights tree house views, bay window, private bath with separate shower, garden tub, huge walk in closet and double vanity. Main level entertains 3 bedrooms, 2 baths with a second owners suite option. For entertainment, home has a spacious sun room with bar and uncovered deck for outdoor grilling and sunshine! Enjoy great views and natural lighting through out with beautiful landscapes. Attached garage contains half bath with plenty of storage, extra storage under sun room and lake fed irrigation. Sunset views, sandy beach front, covered dock with boat lift and quick access to big water. Location is a golf cart ride to dining, marina and convenience store."[212]

197. The Seller's Disclosure dated December 4, 2024 and attached to the MLS listing further described the property:

- Under "Describe any known property environmental contamination problems . . .", Phillips responded "See SCDES fish advisories for Lake Wateree"
- Under "Flood hazards, wetlands, flood hazard designations, flood zones, or flood risk affecting the property", Phillips indicated "Yes" and noted "on Lake Wateree"

[209] Columbia MLS 348915; August 2014 Deed and Mortgage
[210] Canopy MLS 4205162
[211] Canopy MLS 4205162; May 2025 Deed and Mortgage
[212] Canopy MLS 4205162

Figure 72
Phillips Property[213]



Class-wide Damages are Contrary to Ongoing Evidence of Use and Enjoyment on Lake Wateree

198. With regard to Lake Wateree, Plaintiffs allege specific impacts:

> "Plaintiffs are all property and homeowners with waterfront property on Lake Wateree. As property owners, Plaintiffs were vested with certain fundamental rights, including littoral and riparian rights, and were entitled to enjoy those rights without undue interference or trespass from intruders, including through the invidious release of harmful chemicals."[214]

> "At the same time, fishing, boating, and general use of waterfront property is a specific right for waterfront property owners."[215]

199. Contrary to Plaintiffs' claims of class-wide impact, I found widespread evidence of ongoing use and enjoyment of properties throughout the proposed class:

- Rental activity and guest reviews of class representative's property,
- Lake activities in the same cove as the class representative's property,
- Other rental homes on Lake Wateree,
- Ongoing activity at Lake Wateree State Park,
- Local fishermen on Lake Wateree, and
- Social media.

[213] Canopy MLS 4205162
[214] First Amended Complaint, para. 119-120
[215] First Amended Complaint, para. 70

Evidence of Ongoing Use and Enjoyment at Class Representative Property

200. As recently as July 20, 2025, guests were posting "exceptional" reviews of the Jones property noting that the positives outweigh any negatives and they "we would definitely book here again!":

> "Lovely house with plenty of beds but not enough sitting room if you're a big family and stuck inside due to weather. The only real complaint we had was there was 1/2 a roll of toilet paper left in each bathroom and 1 extra in the hall closet. We bought a 12 pack and stocked up for the next family! And less than 1/2 a roll of paper towels. We bought a 2 pack and left what we didn't use. The beach area was full of trash and dead fish but we cleaned that up. Enough of the cons! For the pros: This place has a large sitting area under the house, we used that space every evening. The porch is fantastic for morning coffee. The best part was the easy access to the water! We lounged in the water all day long. It was exactly what we hoped for. Fishing off the pier was a bonus. Albeit the pier needs a little repair. Great stay for our family getaway. We would definitely book here again."[216]

201. Overall, the Jones property has received 61 reviews between August 2017 and July 2025 – 57 rated "10 – Exceptional" and four rated "8 – Good". Examples of additional guest comments are included below:

> June 15, 2025 – "Just left an incredible vacation at this amazing house! The house was clean, well stocked, and a great setup for large families. The beach was the perfect spot for the kids to play and adults to relax. Marc and Kathryn were amazing to work with and replied quickly anytime we had a question. Already planning to rebook for next summer. My husband said his favorite part was pretending to rub Howard's Rock and run down the hill - GO TIGERS!"
>
> June 8, 2025 – "Had another great year!! Always choose this house because it's the best. Fits our needs perfectly!!"
>
> October 30, 2023 – "My family had a great time. The house was awesome and the lake was so nice. The kids had a blast fishing and swimming."
>
> July 16, 2021 – "There were lots of extra toys that were not listed. Kayaks, paddle board, and a pool table which we enjoyed playing every night while listening to music. The driveway is a little steep especially when trying to get up while pulling my boat. I would recommend putting your boat in the water first before getting to the house. Overall this place is beautiful and relaxing."
>
> May 7, 2018 – "We all did not want to leave! Both kids and adults agreed it was one of the best family trips! You got a little piece of the beach with the sand down at the water. The kids had a blast in the sand and the guys fished day and night off the dock! It was

[216] https://www.vrbo.com/1127295

absolutely amazing! The house was beautiful like the pictures and had plenty enough room."

October 3, 2017 – "Excellent conditions! The house is really awesome and looking better than in the pictures. We were 6 adults and 5 kids and it was plenty of space. All of us were accommodated properly, we have fun swimming, fishing, grilling etc. Two thumbs up for Mr. and Mrs. Jones (the owners) hospitality! We love it and we definitively plan to come again!"

August 14, 2017 – "Beautiful spacious lakefront home with immaculate deep water views: This spacious lake front home exceeded expectations for our short Lake Wateree family vacation. The home provided all the amenities needed for a relaxing stay. My 7 year old son caught a catfish, blue gill, and yellow pirch from the two docks on the property. We also enjoyed using the pool table and the cornhole boards during our stay. The family pictures throughout the home added a very special touch... the home creates beautiful family memories for everyone that has the opportunity to spend time here. Kathryn was extremely informative and very responsive! Sadly, the home is up for sale and it doesn't appear that we'll have the opportunity to stay in this lovely home again. I'd love to make future memories for my boys here!"

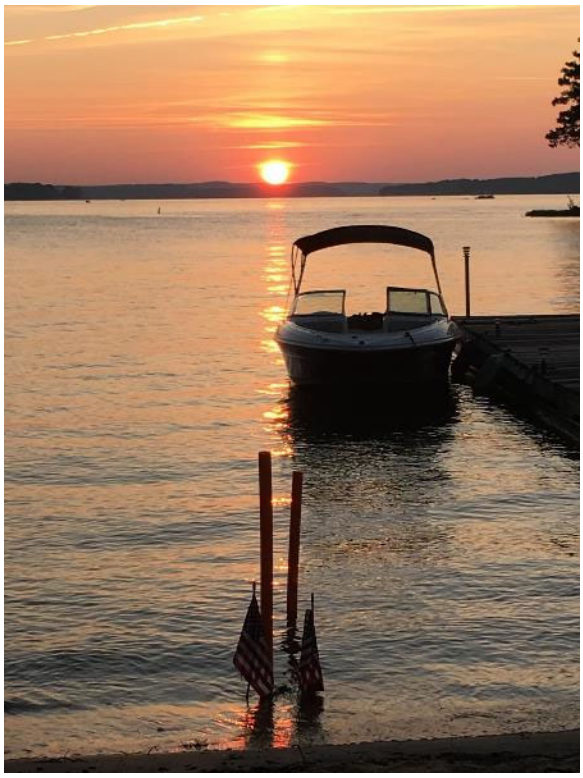
202. These reviews, as well as the photographs from the rental listing highlighted below, demonstrate the ongoing use and enjoyment of the Jones property. There is no mention of fish consumption advisories, PCBs, or a change to any planned or typically-enjoyed activity at the property. Rather, numerous guests indicate they are repeat guests and intend to rent the house again in the future. Mr. Jones testified he is not aware of any guest or potential guest who has cancelled a reservation or made any type of complaint due to PCBs in Lake Wateree.[217]

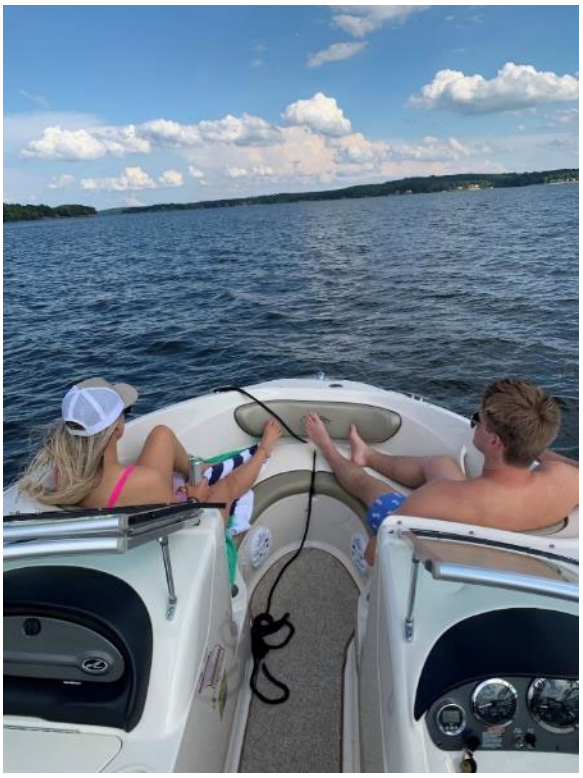
Figure 73
Outdoor Amenities and Ongoing Use and Enjoyment at Jones Property





[217] Jones deposition, p. 199-200





Ongoing Evidence of Use and Enjoyment at Properties Near Class Representative Property

203. The Lake Wateree Sailing Club is located in the same cove as the Jones property directly across the water, as illustrated in Figure 74 below.[218]

[218] https://www.lakewatereesailingclub.com/

Figure 74
Jones Property and Lake Wateree Sailing Club



204. According to its website,

> "The Wateree Sailing Club is a family-oriented water recreational club. The club offers private access to Lake Wateree for sailing and other personal watercraft usage. Other social activities included in the membership are cookouts, picnics and other social events. Bathrooms are available for members. Sailboats, powerboats, and personal watercraft alike enjoy the secure, easy access the sailing club offers to Lake Wateree's 'Big Water'. The Wateree Sailing Club's membership comes from across both South and North Carolina. Members enjoy well kept grounds with a beautiful club house and launch ramp. WSC also has wet slips to accommodate many types of boats. Each year the club organizes a year-round schedule of 'sailing' and 'social' activities. Sailboat cruises and social activities such as picnics, cookouts and oyster-roasts are representative of activities members can select from."[219]

205. The 2025 schedule of events (March to November) includes activities on Lake Wateree such as overnight sails, Family Fun Float Day ("small boats to noodles, bring grandkids"), Thursday sails, and club work days.[220] These events involve active use of the lake and are illustrated in the photographs below. There is no mention of cancelled events or a change to regularly scheduled activities due to fish consumption advisories or PCBs.

[219] https://www.lakewatereesailingclub.com/home
[220] https://www.lakewatereesailingclub.com/home/2025-activities-schedule

Figure 75
Lake Wateree Sailing Club Recent Activities[221]



Figure 76
Lake Wateree Sailing Club April 2025 Family Fun Float Day[222]



[221] https://www.lakewatereesailingclub.com/home/gallery
[222] https://www.lakewatereesailingclub.com/home/family-fun-float-day-april-2025

Ongoing Evidence of Use and Enjoyment at Other Rental Homes on Lake Wateree

206. There is an active rental market for homes on Lake Wateree, and guest reviews for properties throughout the proposed class continue to mention the water activities enjoyed on the lake (swimming, boating, fishing) and other recreational activities being enjoyed based on the specific property characteristics of each rental property. A small sample of guest reviews and guest photographs are highlighted below:

> June 2025 "**We've stayed at this house 3 times**, and my kids love it! They enjoy the covered porch and **swimming off the dock**. My husband has a boat, and the boat ramp is nearby. I really enjoyed shopping at the antique stores and gift shops in Ridgeway. The house is clean, supplied with everything we needed, and the owners were accessible if we needed anything. **We definitely hope to come back**!"[223]
>
> July 20, 2025 - "We truly enjoyed our stay at this beautiful lake house for our church youth retreat! The location was absolutely perfect, offering a wonderful backdrop for our group. **There was a ton to do right on the property, which was a huge bonus for keeping everyone entertained – the availability of kayaks, paddleboards, swimming, and fishing meant there was never a dull moment**. Overall, everything was great, and the owner was incredibly helpful and fast-responding to any questions we had, which we greatly appreciated. However, there were just a few minor downfalls that impacted our experience. The elevator was not working, and with four levels, carrying luggage and groceries up and down was quite a workout and definitely hard on the knees. Additionally, the bugs and spiders were a considerable issue. We found it nearly impossible to sit on the porch or go outside without being swarmed, especially at night, and every time the door was opened, they seemed to find their way into the house. Lastly, the air conditioning was not working in the garage, where the pool table and ping pong table are located. This made the space super hot and uncomfortable, preventing us from enjoying the game area for very long. **Despite these challenges, the overall positive aspects and the wonderful amenities available on the lake made for a memorable retreat! Would definitely book again**!"[224]
>
> September 2, 2025 "We really enjoyed our stay. **The property is very easy to access and walk around due to the flat areas which was important to us with aging parents with some disabilities.** We enjoyed the cabin feel and how big the porch was to hang out and eat dinner overlooking the water. The big porch made it easy to have eyes on the kids at all times. Communication was excellent also. Will definitely be back!"[225]
>
> October 13, 2025 "**Always a pleasure to visit a lil bit of heaven every chance we get**."[226]

[223] https://www.vrbo.com/167106
[224] https://www.vrbo.com/2505515
[225] https://www.vrbo.com/167106
[226] https://www.vrbo.com/167106

Figure 77
Photographs from 2025 Guest Reviews on Lake Wateree[227]







Ongoing Evidence of Use and Enjoyment of Lake Wateree at Lake Wateree State Park

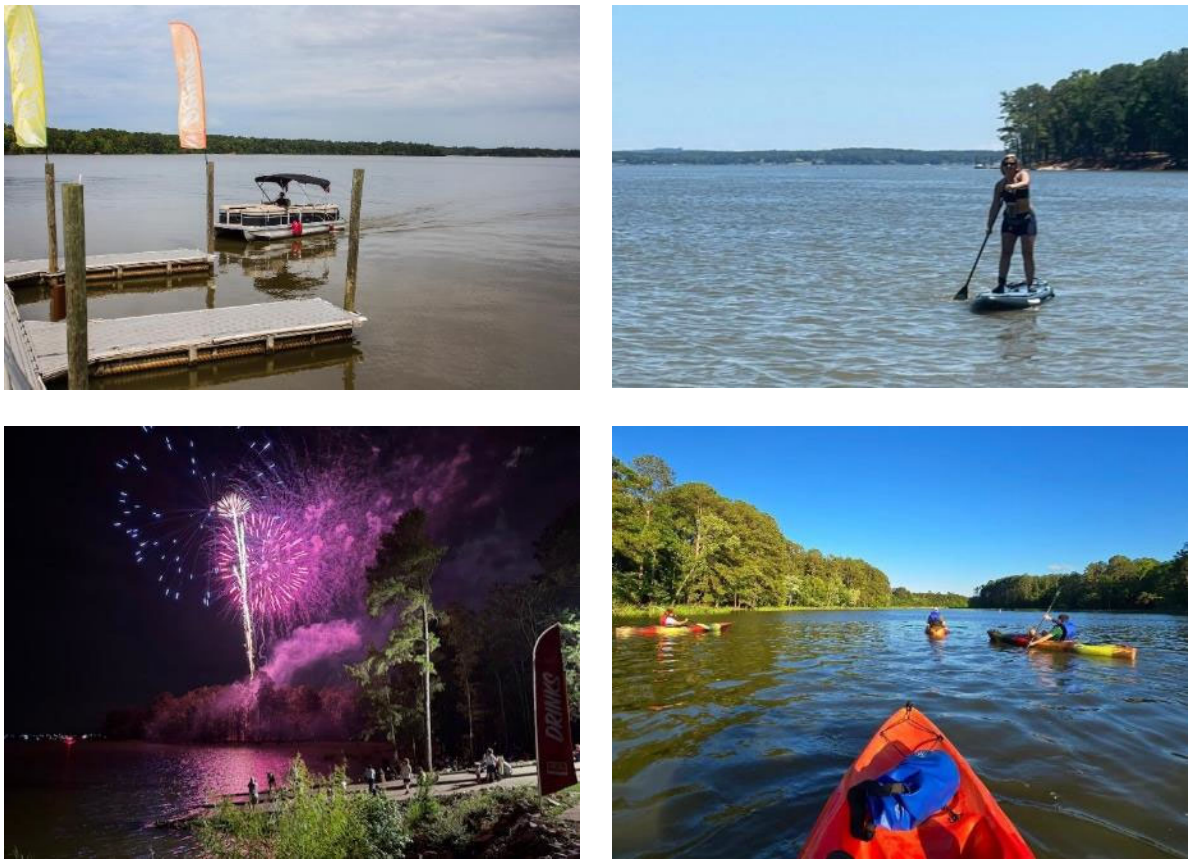
207. Social media posts tagging Lake Wateree State Park demonstrate the continued use and enjoyment of the lake by a variety of guests. The amenities and attractions of the lake are summarized by Travis Sellers, manager of Lake Wateree State Park:

> "My favorite thing about Lake Wateree State Park is going out on the lake to fish and enjoy the sunset. Fishing is one of my favorite pastimes and the lake is the perfect place to relax."[228]

[227] https://www.vrbo.com/7747719ha; https://www.vrbo.com/167106
[228] https://southcarolinaparks.com/lake-wateree

"Lake Wateree fishing and boating can meet the needs of anyone looking for fun on South Carolina lakes. Numerous Lake Wateree fishing tournaments are hosted here every year, and the park provides a publicly accessible boat ramp, tackle shop and a refueling dock."[229]

Figure 78
2025 Photographs Tagged #LakeWatereeStatePark[230]



Ongoing Evidence of Use and Enjoyment at Lake Wateree – Local Fishermen

208. Angler's Headquarters, a Columbia, South Carolina-based family-owned business, describes Lake Wateree as "A very fertile lake with a healthy baitfish population and a relative lack of development compared to other, more urban lakes, Lake Wateree is known to anglers as one of the premiere all-around fisheries in South Carolina. The popular species

[229] https://southcarolinaparks.com/lake-wateree
[230] https://southcarolinaparks.com/lake-wateree

targeted by fishermen on the lake include largemouth bass, striped bass, crappie, bluegill, white perch, and catfish."[231,232]

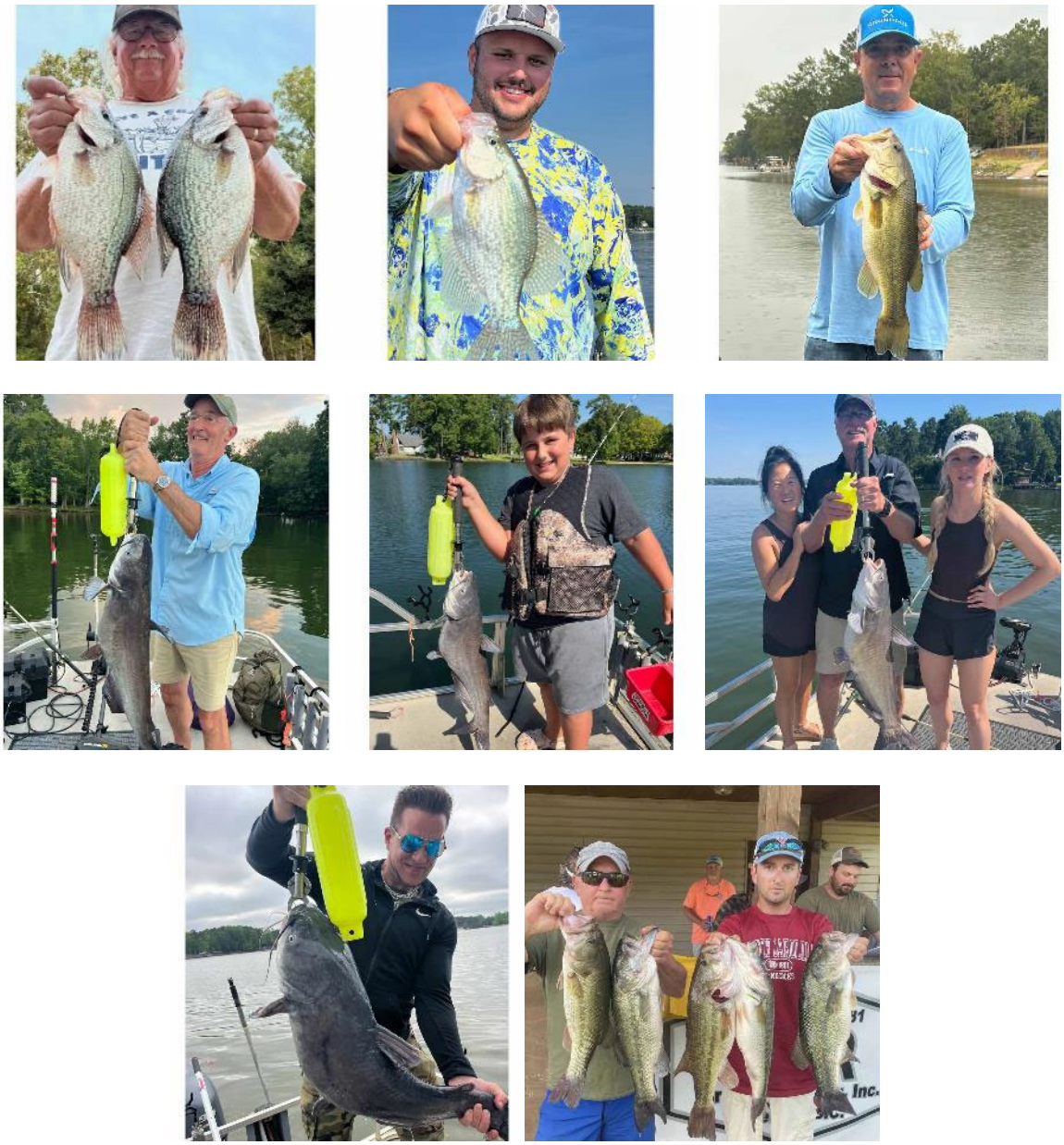
209. Angler's Headquarters also identifies upcoming fishing tournaments, including the following at Lake Wateree:[233]

- October 25, 2025 – Carolina Anglers Team Trial Lake Wateree Open Qualifier #18
- November 1, 2025 – Carolina Anglers Team Trial Lake Wateree Open Qualifier #19
- November 15, 2025 – Carolina Anglers Team Trial Lake Wateree Open Final

210. Lastly, as a service to local fishermen, Angler's Headquarters publishes a weekly subscription-based "AHQ Insider" Fishing Report for several different waterbodies, including Lake Wateree. These reports summarize the current lake and fishing conditions and include a recent photograph of fishing activity at the lake, illustrated below. [234]

[231] https://www.anglersheadquarters.com/pages/lake-wateree-fishing-report?srsltid=AfmBOopLXmIm1sI0eS0IpS7c7s1EhL7SFW317xb5uG-zvLlimBbJMMtt
[232] Largemouth bass, striped bass, and black crappie are all subject to a fish consumption advisory at Lake Wateree - https://des.sc.gov/data-tools/fish-consumption-advisories/lake-wateree-fish-consumption-advisory
[233] https://www.anglersheadquarters.com/pages/sc-fishing-tournaments
[234] https://www.anglersheadquarters.com/pages/lake-wateree-fishing-report; https://www.anglersheadquarters.com/blogs/ahq-report/tagged/lake-wateree

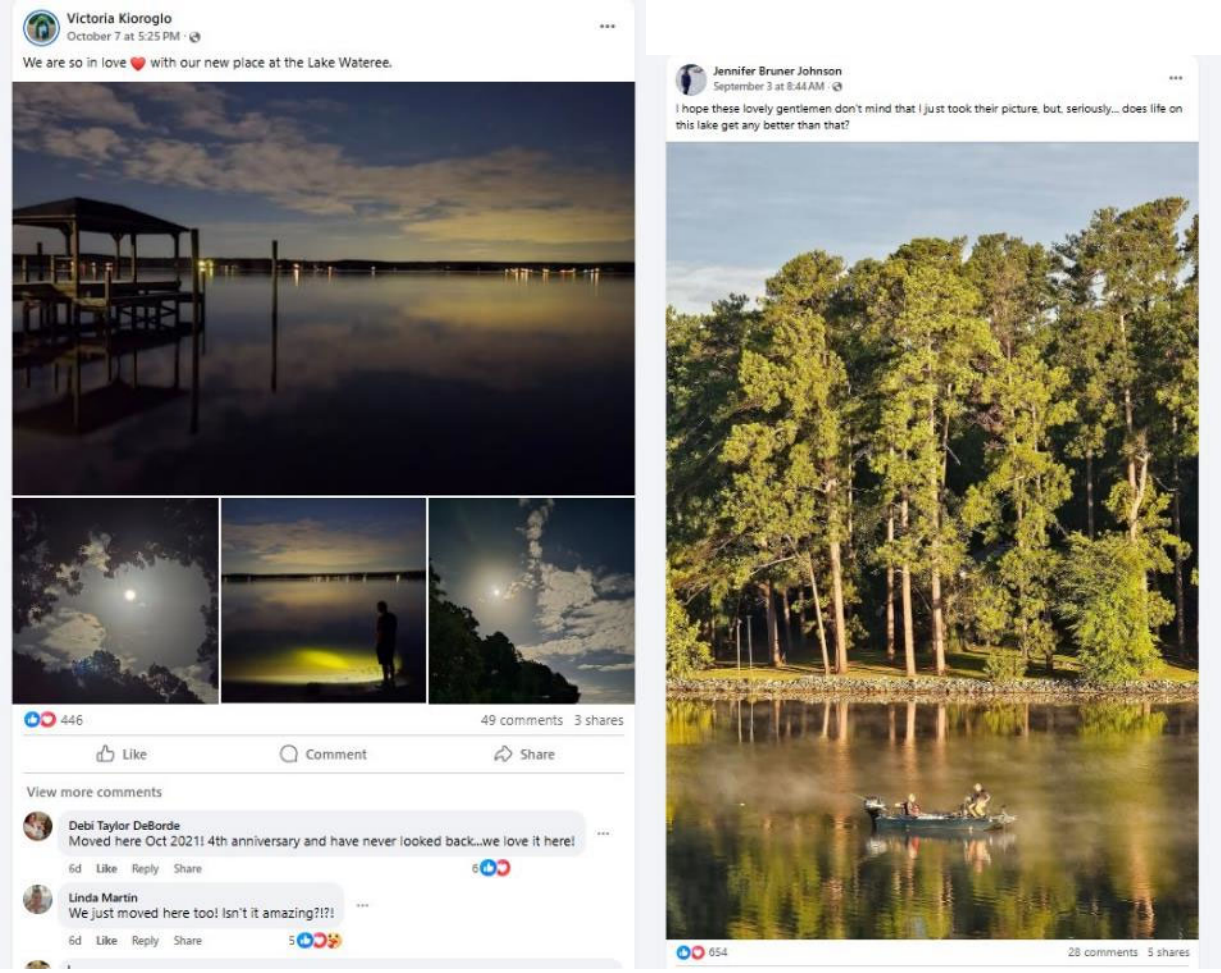
Figure 79
2025 Fishing Activity at Lake Wateree

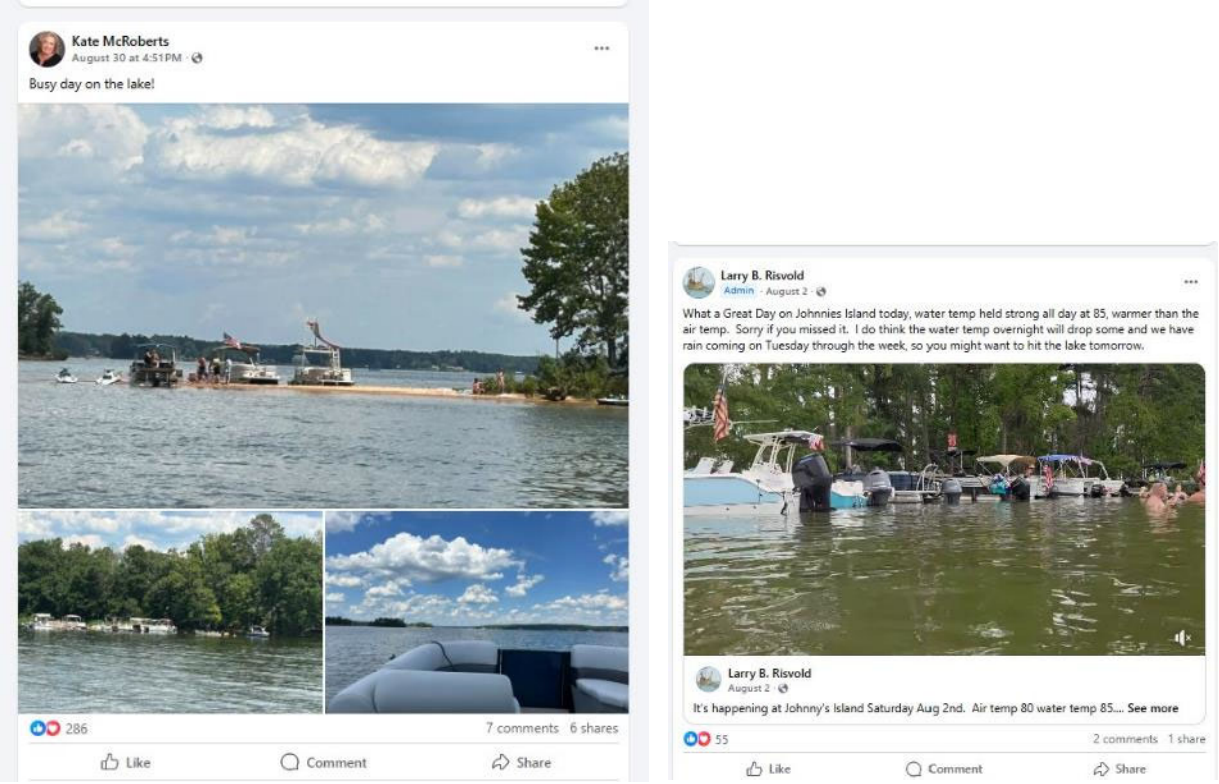


Ongoing Evidence of Use and Enjoyment on Lake Wateree from Social Media

211. Lastly, a review of posts on the Lake Wateree Facebook page demonstrates the ongoing use and enjoyment of residents and guests at Lake Wateree, including new homeowners, fishermen, boaters, and swimmers. A small sample of representative posts is included below.

Figure 80
2025 Posts on Lake Wateree Facebook Page





Conclusion: Opinion 4

212. Prior to quantifying individual damages (which cannot and should not be assumed on a class basis), a proper market analysis must be conducted to establish whether any property value impacts exist in the first place. As demonstrated throughout this opinion, the preliminary market analysis and ample, readily available online documentation confirm class-wide impacts cannot be assumed—on the contrary, there is no market-based evidence of class-wide property value diminution or class-wide loss of use and enjoyment.

213. This is not surprising. The literature makes clear that contaminated waterways are prevalent throughout the United States and have largely become an accepted part of an industrialized society. This contamination rarely has impacts on surrounding property values, due to the possible explanations highlighted below:

> "If the tens of thousands of contaminated waterways throughout the United States did result in a measurable diminution to nearby property values, it would impact billions of dollars of property values. This news would certainly be a major media event. However, such reactions to contamination and allegations of property damage rarely arise. There are many possible explanations for this:
> - While waterways commonly have negative environmental issues, they also have strong positive characteristics for view amenities as well as recreational activities like boating.
> - Waterway contamination is so common that real estate markets may simply consider it an unfortunate sociological reality that does not get factored into real estate prices.

In other words, people may look to government regulation and cleanup as the solution to waterway contamination, rather than adjusting individual property values. . . .

- Some market participants, seeing the barrage of environmental warnings, may view contamination advisories as old news or believe that it is sufficient simply to drink bottled water, shower after swimming, or eat limited amounts of fish; others may choose not to worry about the waterway contamination at all. . . .
- The question, what is the impact on property values? may naturally arise when properties are located in proximity to a contaminated waterway. However, a fairer question may be, compared with what? With so many contaminated waterways, what other choice is there? In other words, moving from proximity to one waterway to another may simply be changing one set of problems for another, with no net positive effect."[235]

Conclusion

214. Based on the materials reviewed, analyses performed, my experience, and my understanding of the accepted valuation and appraisal literature, I conclude

- Opinion 1: The value of a property cannot be determined based upon common issues on a class-wide basis because a property's value is driven by the property's individual characteristics, how those characteristics interplay with each other and the characteristics of surrounding properties, and the value that an owner or potential purchaser places on those characteristics.

- Opinion 2: When evaluating potential property value diminution due to alleged environmental contamination, individual real property and property owner issues are more important considerations than any common issues.

- Opinion 3: Economic damages related to real estate impacts (including property value diminution or loss of use and enjoyment) can be accurately and adequately determined only on an individual property and individual owner basis.

- Opinion 4: There is no market-based evidence of class-wide property value diminution or loss of use and enjoyment.

215. I reserve the right to supplement this report should new information become available or I am asked to perform additional tasks.

[235] Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008, p. 351-352

Respectfully submitted November 3, 2025.



Christina M. Brunk, CFA, CRE, FRICS

Exhibit A

Curriculum Vitae

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National Association of Realtors
Royal Institution of Chartered Surveyors
American Bar Association
Appraisal Institute

Certifications/Designations
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Counselor of Real Estate (CRE)
Fellow, Royal Institution of Chartered Surveyors (FRICS)
Alabama Licensed Real Estate Salesperson

Education
Post-baccalaureate Certificate, *Geographic Information Systems*
Pennsylvania State University, 2007
Master of Arts, *Finance*
University of Alabama, 1999
Bachelor of Science, *Commerce and Business Administration (Finance)*
University of Alabama, 1998

Professional History
Alvarez & Marsal (2007-present)
AEA Group (2002-2007)
Tait Advisory Services (2001-2002)
PricewaterhouseCoopers (2000-2001)

Ms. Brunk specializes in the modeling of complex real estate and economic damages claims, real estate market analysis, and the development of geographic information systems (GIS). Over the last 25 years, Ms. Brunk has advised clients in varied industries, including heavy manufacturing, oil and gas, chemical companies, utilities, financial services, public sector, healthcare, retail, and others. She brings expertise in sensitivity analysis and the development of data intensive models used to evaluate real estate market activity, alleged real estate and economic damages, and potential settlement alternatives in class action and mass tort matters.

With expertise in real estate markets, financial analysis, and economic damages, Ms. Brunk has assisted clients throughout the United States in evaluating the effects of alleged air, soil, and groundwater contamination and other potential disamenities on property values, use and enjoyment, lost profits, and lost business opportunity. She advises clients in all stages of litigation including discovery, evaluating class certification issues, quantifying alleged damages and rebutting opposing experts, identifying and modeling settlement alternatives, and serving as a court-appointed Settlement Administrator. In addition, Ms. Brunk regularly utilizes GIS to assist clients in understanding the spatial and temporal relationships between locations and other key factors, evaluating potential exposure, and analyzing demographic, economic, real estate, and environmental data.

Ms. Brunk is a member of the Counselors of Real Estate, having previously served on the Budget and Finance Committee and as the CRE Liaison to the National Association of Realtors' Land Use, Property Rights, and Environment Committee. She is a board member of Alvarez and Marsal's Women's Leadership Connection and leads the Disputes and Investigations' Women's Leadership Initiative. Prior to joining Alvarez & Marsal, Ms. Brunk began her career with the Financial Advisory Services Practice at PricewaterhouseCoopers and was a Managing Consultant with Accounting, Economics, and Appraisal Group.

Representative examples of Ms. Brunk's engagements are highlighted below.

REAL ESTATE AND ENVIRONMENTAL DAMAGES

- Issued an expert report in federal court in Kentucky evaluating allegations of property value diminution and loss of use and enjoyment arising from soil contamination on a residential property.

- Issued an expert report in a class action alleging property value diminution and loss of use and enjoyment for more than 36,000 residential properties in southern California following a release of jet fuel.

- Analyzed potential property value diminution related to elevated levels of disinfection byproducts in a private municipal water system in Florida, which included a proposed class of more than 1,600 homes.

- Evaluated claims of property value diminution related to proximity to a municipal landfill in Montana.

- Evaluated claims of temporary loss of use and enjoyment related to odor and other effects from a fire and resulting damage to a coke manufacturing facility in Pennsylvania.

- Analyzed claims of property value diminution and diminished tax income for a municipality due to alleged contamination after a refinery fire in northern California.

- Studied property characteristics and real estate market trends for over 75,000 properties in a five county area in Pennsylvania to analyze allegations of property value diminution and loss of use and enjoyment due to air emissions from a coal-fired power plant.

- Served on the Deepwater Horizon real property settlement team, assisting in the development of real property frameworks, claims processes, settlement modeling and analysis.

- Examined the effect of proximity to an oil refinery on property values and use and enjoyment in Illinois.

- Analyzed demographic, property, and market data in opposition to class certification in a matter involving alleged property damage resulting from airborne ash materials stored at a paper mill in Florida.

- Evaluated allegations of property value diminution in a series of class action suits involving PCB contamination; analyses included study of residential real estate market, commercial real estate market, residential rental market, lender surveys, and media studies.

- Compiled and maintained a database of more than 3,000 plaintiffs in PCB litigation; prepared daily reports for counsel on strategic issues: soil test results, blood/fatty tissue test results, proximity of plaintiff locations to plant site, ownership issues, damages per opposing expert, etc.

- Designed and constructed a sales database incorporating data from county records, multiple listing service, and appraiser records; applied internal controls and resolved data conflicts to preserve

integrity of the sales data; prepared data for analysis by categorizing according to location, property type and transaction type.

- Utilized building permits, dock permits, county property records, aerial photography and historic sales data to construct a database of improvements and sales of marsh-front properties alleging property diminution due to lead, mercury and PCB contamination.

REAL ESTATE CONSULTING

- Analyzed demographic data for a subsidized multi-family property and benchmarked against patterns in the relevant populations to assist in responding to a U.S. Department of Housing and Urban Development inquiry regarding tenant selection processes.

- Served as Settlement Administrator of a property class involving 1,600 residential parcels in Alabama alleging contamination from operations of a former industrial coke operation.

- Monitored the performance of a city-wide residential real estate market and comparable city markets for a client involved in ongoing litigation with claims of property value diminution.

- Developed and administering a Value Assurance Program for residential property owners in Louisiana, and presented the program at multiple public meetings held by the Louisiana Department of Environmental Quality.

- Developed and administering a Value Assurance Program for residential, commercial, and vacant property owners in Michigan in response to offsite migration of a groundwater plume from an adjacent auto manufacturing facility.

- Completed a land use study as part of a regulatory exposure assessment, including number of parcels, approximate size, land use, and presence of crops, wells, irrigation equipment, livestock, and other land attributes.

- Evaluated the proposed privatization of a municipal landfill department on behalf of a county government.

- Developed and administered a Value Assurance Program for residential property owners in Ohio in close proximity to a coke facility.

- Developed and administered a Value Assurance Program developed as part of a settlement of claims of property value diminution surrounding a groundwater plume in rural Oklahoma.

- Developed and administering a Value Assurance Program in New York designed to alleviate property owner concerns regarding property value diminution from a regulatory soil investigation; met with property owners and other stakeholders at public meetings held by the New York State Department of Environmental Conservation.

- Designed and implemented a Value Assurance Program and Property Purchase Program for residential property owners adjacent to a groundwater plume in New Hampshire.

- Developed and administering a Value Assurance Program as part of an institutional control program involving several hundred property owners downstream from a manufacturing facility in Michigan.

- Developed a Value Assurance Program used in settlement of a suit involving air emissions from coal operations adjacent to and surrounded by more than 10,000 residential properties in Alabama.

- Developed of a Value Assurance Program provided to residential property owners adjacent to a coal combustion by-product facility in West Virginia to settle claims of alleged property value diminution.

- Implemented a Value Assurance Program for single family and multi-family residential properties on the sites of two former manufactured gas plants in California.

- Assisted in the development of a Value Assurance Program for residential and commercial properties on the site of a former manufactured gas plant site in Ohio.

- Developed and administered a Value Assurance Program for use in a matter involving nearly 3,800 residential parcels located around and downstream from a manufacturing facility in Alabama.

- Crafted settlement alternatives involving a class of more than 60,000 residential parcels in a three-county area in Alabama, including a Value Assurance Program and a cash component.

- Designed and assisted in the implementation of a Value Assurance Program, a property purchase program, a neighborhood improvement program and other remedies for the site of a gas pipeline explosion in northern California.

GEOGRAPHIC INFORMATION SYSTEMS

- Created zone-based maps and a plaintiff database to assist in the selection of bellwether trial plaintiffs.

- Mapped 4,200 potential plaintiffs to determine eligibility for class participation based on property location relative to four Environmental Protection Agency voluntary cleanup zones.

- Utilized mapping software to illustrate that subsequent plaintiffs were located within the class area defined in the Final Judgment Order of a previous suit.

- Implemented a web-based GIS to track key data related to the management of a $40 billion commercial real estate portfolio.

- Used multiple property databases and search engines to identify properties in the relevant geographic area potentially owned by named plaintiffs; created maps illustrating the location of the plaintiff properties in relation to the jurisdiction boundary.

- Created a secure, online, interactive map with strategic data and tools such as parcel lines, building footprints and aerial photography; a custom querying function to identify parcels and display results on the map and in a table; and measuring and buffering capabilities to identify parcels within a specific distance of a certain location.

- Incorporated historic photographs, aerial photography, and employee statistics to display the location of current, closed and adaptive reuse industry surrounding a defendant's manufacturing site.

- Created an animated map illustrating the location of new residential development, new residential improvements, new commercial development, and new special use development (e.g. churches, schools and parks) to refute opposing expert's opinion that the alleged contamination caused a halt in all such activities.

- Utilized aerial photography, mapping software, and economic data in the creation of strategic exhibits for deposition and trial.

- Designed and implemented a demographic database for use in the analysis of several thousand potential class properties, including school zone, land use, zoning, assessed values, improvement types, income, population, and other variables.

- Designed and implemented a GIS to analyze key demographic factors related to the proposed relocation of a regional hospital, including population, age, income, household size, employment, traffic count, adjacent land uses, access to major transportation arteries, and proximity to retail districts.

LOST PROFITS AND ECONOMIC DAMAGES

- Computed the lost profits of the developer of a mixed use waterfront development near Chicago delayed due to discovery of groundwater contamination.

- Investigated historical financial statements of a manufacturing company in Tennessee alleging lost profits due to uranium and plutonium groundwater contamination from an adjacent site, including a review of vendor accounts, the owner's personal financial statements, and key customer accounts to determine if allegations impacted the plaintiff's business operations.

- Quantified the lost profits of a real estate developer over a failed subdivision in northern Alabama.

- Critiqued the opposing expert's damages calculation and performed a market study in connection with a dispute over alleged PCB contamination and resulting lost profits in the appliance sales and repair industry.

- Quantified the lost profits of a real estate developer for two special use student housing properties in Indiana due to impacts on occupancy, rents, and expenses from a faulty and failed HVAC system.

- Critiqued opposing expert's lost profits opinion as a result of alleged offsite contamination, including researching local and national automotive industry trends and an analysis of the proposed damages model and assumptions.

- Analyzed the damages claim to a shopping center resulting from the closure and relocation of a big box retailer.

- Critiqued a financial model involving damages to a mixed use development resulting from an inaccurate calculation of wetlands acreage.

- Evaluated real property claims from residential and commercial developers related to the Deepwater Horizon oil spill.

- Performed a market study and identified case study sites in order to analyze the sale price trends of residential properties surrounding existing cemeteries in New York as part of a permitting response.

- Performed industry research and analyzed the profile of typical big box retail customers relative to convenience store customers and the difference in geographic draw of big box retail sites relative to convenience store locations.

- Researched key inputs and developed financial models and projections for a startup company engaged in the manufacture and development of affordable housing projects in under-developed countries.

- Compiled demographic and economic data, reviewed internal company guidelines, researched industry trends, and mapped competitor locations to demonstrate factors contributing to the deepening of insolvency of a regional grocery store chain.

PUBLICATIONS AND LECTURES

- *"Stop, Collaborate, and Listen: Creative Settlement Strategies for Real Property Damages"*, The National Association of Certified Valuators and Analysts (NACVA) QuickRead, April 2021.

- *"Stop, Collaborate, and Listen: Creative Settlement Strategies for Real Property Damages"*, Alvarez & Marsal Raising the Bar Newsletter, March 2021.

- *"Ethical Implications in Settlement Strategies for Your Mass Toxic Tort Case"* with John L. Carroll and Lucian T. Pera, Defense Research Institute – Toxic Torts and Environmental Law Seminar, Presentation and Course Materials, March 2019.

- *"VAPs: A Creative Solution to Property-Value Disputes"*, American Bar Association Section of Litigation, Real Estate Litigation Newsletter, January 2013.

- *"Value Assurance Programs: A Case Study in the Model City"* with Jerry M. Dent, Reprinted from the American Bar Association Tort Trial & Insurance Practice Section Spring CLE and Leadership Forum Course Materials, May 2011 to The Environmental Litigator, Summer 2011.

- *"Mapping It Out: Using Technology as a Strategic Advantage in Litigation",* Alvarez & Marsal Raising the Bar Newsletter, July 2011.

- *"Value Assurance Programs: A Case Study in the Model City"* with Jerry M. Dent, American Bar Association Tort Trial & Insurance Practice Section Spring CLE and Leadership Forum Course Materials, May 2011.

- *"Value Assurance Programs: An Alternative Response to Property Value Disputes"* with Jerry M. Dent, Reprinted from The Environmental Litigator, Spring 2009 to American Bar Association Regional Continuing Legal Education Workshop Course Materials, November 18, 2010.

- *"Responding to Property Damage Claims: A Case Study Review of the McWane, Inc. Value Assurance Program"* with Jerry M. Dent and E. Bryan Nichols, Defense Research Institute – Toxic Torts and Environmental Law Seminar Course Materials, March 2010.

- *"Worth More, Worth Less or Worthless: Assessing the Impact of Contamination on Residential Property Value"* with Jerry M. Dent, Environmental Litigator, Fall 2009.

- *"Value Assurance Programs: An Alternative Response to Property Value Disputes"* with Jerry M. Dent, Environmental Litigator, Spring 2009.

- Speaker, *"Use of GIS in Environmental Litigation"* ESRI Southeast Regional Users Group Conference, Jacksonville, Florida, May 2007.

- Instructor, *Corporate Finance*, The University of Alabama, 1999.

PROFESSIONAL AFFILIATIONS AND COMMUNITY INVOLVEMENT

- American Bar Association, Associate Member

- Counselors of Real Estate, Designated CRE

- Royal Institution of Chartered Surveyors, Designated FRICS (Fellow and Chartered Valuation Surveyor)

- Appraisal Institute, Affiliate Member

- National Association of Realtors, Land Use, Property Rights, and Environment Committee

- CFA Institute (formerly Association for Investment Management and Research), Designated CFA (Chartered Financial Analyst)

- Birmingham Business Journal, Top 40 Under Forty

- National Multiple Sclerosis Society Leadership Class, Alabama Chapter

- United Way of Central Alabama Visiting Allocation Team

- The University of Alabama National Alumni Association

- Arthritis Foundation, Alabama Chapter – State Board Member, President - Associate Board

- The Service Guild of Birmingham – Board Member, Membership Chair, Marathon Chair

PRIOR TESTIMONY – LAST FOUR YEARS

- *Charles E. Adams, et al. v. Adient US LLC, et al.*
  United States District Court, Western District of Tennessee
  Case 1:20CV01197
  November 22, 2024

- *Jacob Barnes, et al. v. Dresser, LLC, et al.*
  United States District Court, Western District of Louisiana, Alexandria Division
  Civil Action No. 1:21-cv-00024
  November 1, 2024

- *Ricky Bush, et al. v. Clean Harbors Colfax, LLC*
  United States District Court, Western District of Louisiana, Alexandria Division
  Civil Action No. 1:22-cv-02026-DDD-JPM
  October 11, 2023

- *Frankie Lomas, et al. v. Delta Air Lines, Inc.*
  United States District Court, Central District of California
  Case No. LA CV20-00786 JAK (SKx)
  June 29, 2023

- *David Bell, et al. v. Kokosing Industrial, Inc., et al.*
  United States District Court, Eastern District of Kentucky, Covington Division
  Civil Action No. 2:19-cv-0053
  April 5, 2023

Exhibit B

Documents Relied Upon

Case Documents:

- Original Complaint
- First Amended Complaint
- Deposition of Clyde M. Jones, II on October 8, 2025
- Plaintiffs' Memorandum in Support of Motion for Class Certification

Data Sources:

- Kershaw County Assessor
- Fairfield County Assessor
- Lancaster County Assessor (Schneider Corporation)
- Esri Business Analyst
- Esri ArcGIS Map Layers and Datasets
- Canopy MLS
- Columbia MLS
- FRED Database – Federal Reserve Bank of St. Louis
- Google Maps, Google Street View, Google Earth

Literature:

- The Appraisal Foundation, USPAP 2024 Edition (Effective January 1, 2024), Advisory Opinion 9
- Guide Note 6
- Randall Bell, MAI, "Contaminated Waterways and Property Valuation", The Appraisal Journal, Fall 2008
- Randall Bell, Real Estate Damages (1999)
- Randall Bell, Real Estate Damages (2016)
- James A. Chalmers and Scott A. Roehr, "Issues in the Valuation of Contaminated Property," The Appraisal Journal, January 1993
- Allan E. Gluck, et al., "Mitigating Factors in Appraisal & Valuation of Contaminated Real Property", Real Estate Issues, Summer 2000
- Deborah R. Huso, "On the Water: Appraising marina properties is a challenging niche with as many variables as there are bodies of water.", Valuation Magazine, published by The Appraisal Institute, 2Q 2013
- Thomas O. Jackson, "Methods and Techniques for Contaminated Property Valuation", The Appraisal Journal, October 2003
- Thomas O. Jackson, "Real Property Valuation Issues in Environmental Class Actions", The Appraisal Journal, Spring 2010

- Chris Mothorpe, PhD, and David Wyman, PhD, "Appraisal of Residential Water View Properties", The Appraisal Journal, Spring 2017
- Robert A. Simons, When Bad Things Happen to Good Property, Environmental Law Institute, 2005
- The Appraisal of Real Estate, 15th Edition
- The Dictionary of Real Estate Appraisal, 7th Edition
- Albert R. Wilson, "Real Property Damages and Rubber Rulers", Real Estate Issues, Summer 2006

Websites:

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- www.duke-energy.com
- www.dnr.sc.gov
- www.sciway.net
- www.kershawcountychamber.org
- southcarolinaparks.com
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- response.restoration.noaa.gov
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- des.sc.gov
- www.thestate.com

- www.wltx.com
- www.wjcl.com
- www.lakewatereesailingclub.com
- www.anglersheadquarters.com
- Greatschools.org

Exhibit 13

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION

Clyde Marcus Jones, II; Dennis Phillips, and Deborah Phillips, on behalf of themselves and all others similarly situated, Plaintiffs, v. Duke Energy Corporation and Duke Energy Carolinas, LLC, Defendants.	Civil Action No.: 3:24-cv-1281-MGL **PLAINTIFFS' RESPONSES TO DEFENDANTS' FIRST INTERROGATORIES**

Pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure, Plaintiff Clyde Marcus Jones, II, on behalf of himself and all others similarly situated ("Plaintiff"), hereby responds to Defendants Duke Energy Corporation and Duke Energy Carolinas, LLC (collectively "Defendants") First Set of Interrogatories.

TERMS OF RESPONSE

1. The following responses are based upon information and documents presently available and known by Plaintiff after diligent search and reasonable inquiry. In accordance with Plaintiff's continuing obligation, and pursuant to the Federal Rules of Civil Procedure ("Fed. R. Civ. P."), Plaintiff will, as appropriate, supplement and/or update responses and present additional information as may be disclosed through continuing discovery and investigation. Plaintiff expressly reserves the right to conduct further discovery and investigation for information that would have been included in this response.

2. Plaintiff objects to the Interrogatories to the extent they seek information protected from disclosure by the attorney-client privilege or attorney work-product doctrine. Nothing

contained in these responses is intended as, or shall in any way, waive any privilege or protection, or any other applicable privilege or doctrine. Inadvertent disclosure of such information or documents shall not constitute a waiver of any privilege, or a basis for objecting to discovery, or the right of Plaintiff to object to the use of any document or information inadvertently disclosed, and defendant shall return those documents to the Plaintiff. To the extent that any document(s) is withheld from disclosure, the document(s) will be specifically identified on contemporaneously produced privilege log.

3. To the extent Plaintiff has objections regarding any of the Interrogatories propounded, Plaintiff will specifically object to each request.

4. The following responses are made solely for the purpose of this action. Each response is subject to any and all objections as to competency and relevancy, materiality, and admissibility of evidence that may be applicable at any pre-trial or trial proceeding. In addition, each response is subject to any and all objections and grounds that would require the exclusion of any statement or material provided if the interrogatories were being asked of, or any statement or material were being provided by, a witness present and testifying in court. All objections and grounds are reserved and may be interposed at the time of trial or any appropriate pre-trial proceeding. By providing a response to any interrogatory or requests propounded, Plaintiff does not intend to waive any objections as to relevance, or admissibility that may exist.

5. Plaintiff will make reasonable efforts to respond to each request. If Defendant should subsequently assert an interpretation of a request that differs from Plaintiff's understanding, Plaintiff reserves the right to supplement and/or modify their objections and responses.

6. Plaintiff's pronouncement that documents will be produced is not intended to indicate to Defendant that responsive documents exist, but rather that Plaintiff will engage in a good faith search for responsive information and will produce same to the extent available.

RESPONSES TO INTERROGATORIES

INTERROGATORY NO. 1

Provide the following information for Plaintiffs and any and all other class representatives: **Plaintiff objects to the extent this seeks sensitive personal information, including Plaintiff's social security number, which is neither relevant nor reasonably calculated to lead to the discovery of relevant evidence. Subject to and without waiving any objection:**

(a) Full name; **Clyde Marcus Jones, II**

(b) Date of birth; **August 7, 1969**

(c) Social security number; **CONFIDENTIAL 249-084-642**

(d) Current address; **410 Hampton, St. Camden 29020**

(e) The address of Your Property on or near Lake Wateree which is the subject of this Action, if it differs from your current address; **1778 Sailing Club Rd. Camden, SC 29020**

(f) The date You purchased or otherwise acquired the Property on Lake Wateree; **June 3, 2020**

(g) Any other owners of the Property; **Kathryn Jones; Kathryn Demetri**

(h) Whether the legal boundaries of Your Property extend to or below the ordinary high-water mark of Lake Wateree, and if not, how close the boundaries get to the ordinary high-water mark of Lake Wateree; and – **As reflected in his deed, PLTF_000063-64, the legal boundary of Plaintiff's property is Lake Wateree.**

(i) Whether the Property has direct access to Lake Wateree via a beach, dock, boat launch, or otherwise. **Beach and dock access.**

INTERROGATORY NO. 2

Describe the ownership history of the Property from 1900 to present, including but not limited to identifying any property rights that were acquired, impacted, or affected through condemnation, easement, or release by the Wateree Power Company.

RESPONSE: Plaintiff objects to this interrogatory because the duration of the information sought exceeds any reasonable limitation including the Mosquito Control Program itself, which began in 1923. Plaintiff further objects to the extent that the information requested is more or equally available to Defendants. Subject to and without waiving any objection, the Jones and Deal families purchased the property in the fall of 2001 from the Klopp family. Plaintiff and his wife became the sole owners of the home in June, 2020. In December, 2024, Plaintiff added his daughter, Kathryn Demetri, as an owner.

INTERROGATORY NO. 3

Identify each and every expert you may call or expect to call as a witness at trial. As for each expert, please state in detail: (a) the subject matter on which the expert is expected to testify; (b) the substance of the facts and opinions to which the expert is expected to testify, including any opinion he or she is expected to testify to; and (c) a summary of the grounds for each opinion of the expert.

RESPONSE: Plaintiff objects to this interrogatory as it seeks information prematurely. Plaintiff will disclose the expert(s) on whom he intends to rely in the manner contemplated by Rule 26, FRCP and as set forth in the agreed upon scheduling order. Subject to and

without waiving any objection, in the parties' joint submission pursuant to Rule 26(f), Plaintiff identified some of the experts on which he intends to rely at trial.

INTERROGATORY NO. 4

Describe all Communications You have had with any Person other than your attorneys regarding the allegations in the FAC.

RESPONSE: Plaintiff objects to this interrogatory because the term "communications" is vague and undefined, and the request has no reasonable limit on potential conversations, including informal or incidental discussions. Plaintiff further objects to the extent this interrogatory seeks information protected by the attorney-client privilege or work product doctrine, including communications with agents or representatives acting at the direction of counsel. Subject to and without waiving any objection, other than conversations with his family, none.

INTERROGATORY NO. 5

Identify the name, address, telephone number, and employment of all other witnesses You expect to call at trial and the subject matter upon which You expect each to testify.

RESPONSE: Plaintiff identifies the following individuals or categories of individuals who Plaintiff may call as fact witnesses at the trial of this case:

a. **Plaintiff: Owner of the subject property; expected to testify regarding the subject property, his use of the property, and damages;**
b. **Kathryn Jones: Plaintiff's wife, and co-owner of the subject property; expected to testify regarding the subject property, her use of the property, and damages;**

c. Kathryn Demetri: Plaintiff's daughter, and co-owner of the subject property; expected to testify regarding the subject property, her use of the property, and damages;

d. Members of the Wateree Homeowner's Association: expected to testify regarding their various lakefront properties, the FERC re-licensure agreement, Defendants' management of Lake Wateree; use of Lake Wateree, use of their subject properties; and damages;

e. Property owners who reside or own property that touches Lake Wateree: expected to testify regarding their various lakefront properties, the FERC re-licensure agreement, Defendants' management of Lake Wateree; use of Lake Wateree, use of their subject properties; and damages;

f. Representatives of SCDES: expected to testify regarding testing performed on Lake Wateree, to include any sediment and water sampling, as well as fish tissue studies, and the basis for advising against consuming certain species of fish from Lake Wateree, further expected to testify regarding the Duke Energy Defendants' obligations in managing Lake Wateree;

g. Representatives of SCDNR: expected to testify regarding interactions with Defendants, including creating and implementing the Catawba-Wateree Habitat Enhancement program, and the Duke Energy Defendants' obligations to manage Lake Wateree;

h. Employees, agents, and/or representatives of the Duke Energy Defendants: expected to testify regarding the Duke Energy Defendants' obligations to manage Lake Wateree, including any interaction with or responsibilities between and toward

Defendants and lakefront property owners, the history of the MCP including the decision to terminate the program, the Duke Energy Defendants' obligations toward the environment under their control; the Catawba-Wateree Habitat Enhancement Program including funding of the program; testing performed on Lake Wateree including the selected laboratories and detection limits, and such additional information as may be relevant as discovery in this matter continues;

i. **Contractors of Duke Energy Defendants who performed any regular or periodic remediation, abatement, and/or testing upon Lake Wateree: expected to testify regarding the scope of any work, any testing to support or derived from such work, the basis for testing, the laboratory used, detection limits, and the basis for any detection limits, the outcome of any work, and any additional information as may be relevant as discovery in this matter continues;**

j. **Such additional witnesses as may be identified during discovery in this case.**

INTERROGATORY NO. 6

Identify with specificity all statements or representations made by Defendants which You contend were false and/or misleading and which You relied on to support the allegations in the FAC that Defendants downplayed or otherwise denied that the Mosquito Control Program created any risk of harm to Lake Wateree, including but not limited to identifying any scientific data released to the public by Defendants that You allege were artificially manipulated, describing how such data were allegedly manipulated, and what You and the general public would have learned from such data absent the alleged manipulation that was not previously known or available to You and the general public.

RESPONSE: Plaintiff objects to this interrogatory to the extent it seeks expert opinions not yet disclosed, and to the extent it calls for speculation regarding what the public "would have learned". Subject to and without waiving these objections, Plaintiff refers Defendants to the allegations set forth in the operative complaint, including paragraphs 58, 59, 60, 100, 101, and 102. Further, Plaintiff refers Defendants to the scientific, peer-reviewed article co-authored by James B. Glover and Deke Gundersen, which determined that Defendants' long-standing use of PCBs in its Mosquito Control Program led to contamination of Lake Wateree, and Defendants' internal studies cited in that article, which allegedly used higher than normal detection limits for PCBs. Plaintiff further identifies Defendants' press releases, and news articles describing and celebrating the MCP, which were issued to the general public, and emphasized that the program used only government approved larvicides. Plaintiff did not rely on any particular news article or press release. Rather, Defendants did not disclose – and have never disclosed – that their past use of PCBs (including transformer oils and waste oils) led to contamination of Lake Wateree and its aquatic and biologic life. Defendants' use of these substances was not known by members of the public, or by homeowners, and to the best of Plaintiff's knowledge, Defendants did not publicly disclose any information about their use of these harmful substances.

INTERROGATORY NO. 7

Identify the date and circumstances of the first time that You learned of the presence of PCBs in Lake Wateree.

RESPONSE: Plaintiff was not aware of the presence of PCBs in Lake Wateree resulting from Duke Energy's MCP until sometime in late 2021 or early 2022 when Plaintiff read a

peer-reviewed study regarding the MCP and its historical use of banned substances to control mosquito populations in reservoirs along the Catawba-river.

INTERROGATORY NO. 8

Describe any Tests You conducted at, on, or near the Property before You purchased, leased, or otherwise acquired the Property.

RESPONSE: Plaintiff objects to this interrogatory as "Tests" is undefined and overly broad and, as it relates to property, could encompass all manner of tests, including tests that are neither relevant to the current case nor reasonably calculated to lead to the discovery of relevant evidence. Interpreting this interrogatory to seek information about tests that Plaintiff performed to determine contamination of the subject property prior to his purchase, none.

INTERROGATORY NO. 9

Identify with specificity any Tests on which You relied to support the allegations in the FAC, or which contradicts the allegations in the FAC, including the entity that performed any testing, the methodology of any sampling and testing, why a decision was made to perform or not perform testing, and the results of any testing.

RESPONSE: Plaintiff objects to this interrogatory as it seeks information prematurely. Plaintiff will disclose the expert(s) on whom he intends to rely in the manner contemplated by Rule 26, FRCP and as set forth in the agreed upon scheduling order. Subject to and without waiving any objection, Plaintiff has not alleged injuries from direct contamination to his property. Rather, Plaintiff has alleged that Defendants' contamination of the lake, which adjoins his property and shares a shoreline with his property, has interfered with Plaintiff's use and enjoyment of his property, and his littoral and riparian rights.

INTERROGATORY NO. 10

Identify with specificity any publications, studies, Tests, Documents, or Communications on which You relied to support the allegations in the FAC that the presence of PCBs in Lake Wateree is linked to any action or inaction taken by Defendants.

RESPONSE: Plaintiff refers Defendants to the allegations set forth in the operative complaint, including paragraphs 58, 59, 60, 61, 62, 63, 64, 65, 66, 100, 101, 102, and 105. Further, Plaintiff refers Defendants to the scientific, peer-reviewed article co-authored by James B. Glover and Deke Gundersen, which determined that Defendants' long-standing use of PCBs in its Mosquito Control Program led to contamination of Lake Wateree, and Defendants' internal studies cited in that article, which allegedly used higher than normal detection limits for PCBs. Finally, Plaintiff refers Defendants to the fish consumption advisories issued by South Carolina's Department of Health and Environmental Control n/k/a Department of Environmental Services.

INTERROGATORY NO. 11

State with specificity each item of damage that You claim to have incurred in this Action, including but not limited to describing the alleged diminution in value of the Property, alleged losses of use and enjoyment of the Property, alleged degradation of Your natural resources, and alleged infringement of each and every littoral, riparian, or other property right You possess due to Your alleged ownership of the Property, how each of these rights were allegedly infringed by the presence of PCBs in Lake Wateree, what actions, if any, of the Duke Energy Defendants caused or contributed to the presence of PCBs in Lake Wateree or any of these alleged damages, and the date and circumstances of the first time that You learned of each item of alleged damage.

RESPONSE: Plaintiff objects to this interrogatory to the extent Defendant seeks to limit or otherwise preclude Plaintiff from introducing categories of damages or from allowing a jury to determine the value of the damages. Subject to and without waiving any objection, Plaintiff owns property adjoining a contaminated lake, and Plaintiff has suffered diminution in the value of his property and loss of the full use and enjoyment of his property, including the loss of Lake Wateree's natural resources.

INTERROGATORY NO. 12

Identify any portions of the Property or other property over which You hold littoral and/or riparian rights that You allege were physically invaded by contaminated water.

RESPONSE: Plaintiff's property extends to Lake Wateree and Plaintiff's property contains a beach touching the water. Defendants control Lake Wateree's levels and Plaintiff cannot prevent this water from entering onto his property, or from Defendants periodically elevating or lowering the water level in the lake.

INTERROGATORY NO. 13

With respect to the nuisance discussed in the FAC, please provide the date(s) on which the nuisance was created, the steps You contend are needed to abate the nuisance, the cost of such action, and how the injuries You allegedly suffered as a result of the alleged nuisance differed in kind and degree from the injury that would have been suffered by the public generally as a result of the alleged nuisance, including describing how your access to and use of Lake Wateree differs from access and use available to the public.

RESPONSE: Plaintiff is unsure of when Defendant first created the nuisance, although Defendant has administered the MCP on Lake Wateree since roughly 1923. Defendants withheld or downplayed the use of toxic substances in the MCP and Defendants are in a

better position than Plaintiff to identify the steps needed to abate the nuisance, although Plaintiff reserves the right to supplement this response as discovery in this matter continues. Nevertheless, Plaintiff own lakefront property, including a dock, and beach, and shares a property line with Lake Wateree. As Defendants are aware, in South Carolina a "private nuisance" is "anything done to the hurt or annoyance of the lands, tenements, or hereditaments of another." *Charleston Dev. Co., LLC v. Alami*, 433 S.C. 533, 860 S.E.2d 687 (Ct. App. 2021); *see O'Cain v. O'Cain*, 322 S.C. 551, 561, 473 S.E.2d 460, 466 (Ct.App. 1986) ("[G]enerally, a private nuisance is that class of wrongs that arises from the unreasonable, unwarrantable, or unlawful use by a person of his own property, personal, or real."). Defendant's interrogatory fails to take Plaintiff's status as a property owner into account. By virtue of his title, Plaintiff's relationship with Lake Wateree is distinct from the relationship enjoyed by the general public. Indeed, Duke's own title to certain parcels reflects littoral and riparian rights, which stem from the water. Plaintiff and all other landowners with water adjoining Lake Wateree hold these unique rights, whereas the general public does not. Plaintiff has a relationship with Defendants by virtue of his title and deed, which provides Defendants' with a right of access to Plaintiff's property. In terms of abating the nuisance, Plaintiff objects to the extent that this interrogatory seeks information that is more appropriate for expert discovery, and is more or equally available to Defendants, whose ownership of the lake creates a responsibility to appropriately manage the lake so as not to disturb the rights of lakefront neighbors.

INTERROGATORY NO. 14

If You fish, boat, or participate in other recreation at Lake Wateree, describe Your recreational activity. its frequency, and whether and why that frequency has changed over the duration of Your ownership of the Property.

RESPONSE: Plaintiff objects to this interrogatory because it is vague as to the scope of "recreational activity" and improperly seeks a narrative response regarding frequency and causation over an extended period. Plaintiff further objects to the extent this interrogatory calls for speculation or subjective narratives not supported by documented evidence. Subject to and without waiving any objection, Plaintiff no longer fishes in Lake Wateree as a result of the warnings against consumption and his knowledge of PCB contamination in the water, rarely uses his boat on Lake Wateree, has decreased his use of the lakefront property, and no longer swims in the shallow water.

INTERROGATORY NO. 15

Identify which portion(s) or provision(s) of the Catawba-Wateree Relicensing Agreement or other related documents contain or describe any promises, representations, warrantees, or guarantees made by Defendants to You that Defendants were and would be "responsible for the fish and wildlife habitat, water quality, and conservation of the land surrounding the lake, including shoreline management," as stated in ¶ 51 of the FAC.

RESPONSE: Defendants' statements and promises in these agreements were not targeted toward any individual homeowner. Rather, the promises were made broadly to support relicensure. Defendants defined the Lake Wateree homeowners as "stakeholders" in the relicensure and publicly stated that the new license would "provide balanced and sustainable benefits for the river and for the communities for decades to come." *See, e.g.*, Duke Energy Press Release: "Stakeholders sign Catawba-Wateree license agreement," available at:

https://www.duke-energy.com/community/lakes/hydroelectric-relicensing/catawba/license-agreement . Defendants entered into lake-specific agreements promising to enhance the quality of the water and fish habitats including in Lake Wateree. These agreements expressly contemplated that Defendants' control of the various reservoirs would impact lakefront neighbors. Finally, in conjunction with the relicensure, Defendants, along with South Carolina Department of Natural Resources, created the Catawba-Wateree Habitat Enhancement Program. This program was organized to enhance and protect fish and wildlife within the Catawba-Wateree reservoirs, including Lake Wateree, while simultaneously enhancing private recreational access. This program is funded, in part, by lakefront property owners.

INTERROGATORY NO. 16

Describe Your involvement in any regulatory processes associated with licensure or permitting of the dam on Lake Wateree, including but not limited to public comments You submitted, public meetings You attended, licensure or permitting-related documents You reviewed, and any other actions or efforts You undertook relating to the Defendants' efforts to license or re-license the dam on Lake Wateree.

RESPONSE: Plaintiff does not recall any involvement and did not submit comments or attend meetings relating to the relicensure.

INTERROGATORY NO. 17

If You consume fish from Lake Wateree, state the type of fish consumed and the frequency with which You consume them.

RESPONSE: Plaintiff objects to this interrogatory because it does not account for changes in consumption over time due to public health advisories. Plaintiff further objects to the

extent this interrogatory calls for speculation or subjective narratives not supported by documented evidence. Subject to and without waiving any objection, since learning that certain species of fish contained harmful PCBs, Plaintiff has ceased all consumption of fish from Lake Wateree. Prior to becoming aware of the contamination, Plaintiff fished and consumed catfish, bass, crappie, and brim.

INTERROGATORY NO. 18

Identify which portion(s) or provision(s) of the Catawba-Wateree Relicensing Agreement or other related documents contain or describe any promises, representations, warrantees, or guarantees made by Defendants to You that Defendants were and would be "responsible for the fish and wildlife habitat, water quality, and conservation of the land surrounding the lake, including shoreline management," as stated in ¶ 51 of the FAC.

RESPONSE: Plaintiff objects to this interrogatory because it is redundant of Interrogatory No. 15, which already requests identification of portions or provisions of the Catawba-Wateree Relicensing Agreement or related documents containing promises, representations, warranties, or guarantees regarding Defendants' responsibility for fish and wildlife habitat, water quality, and shoreline management. Plaintiff incorporates by reference his response to Interrogatory No. 15.

INTERROGATORY NO. 19

Identify any community, neighborhood, or homeowners' associations in which You are a member in relation to the Property.

RESPONSE: Plaintiff is a member of the Lake Wateree Home Owners Association and has previously been a member of the Wateree Sailing Club.

INTERROGATORY NO. 20

Identify any Documents and Communications on which You relied to support the allegations in the FAC that Defendants used PCBs in the Mosquito Control Program and disposed of PCBs in Lake Wateree.

RESPONSE: Plaintiff objects because this interrogatory seeks information that is more appropriate for expert discovery, including analysis of the chemical makeup of materials used in the Mosquito Control Program. Plaintiff further objects to this interrogatory to the extent it is redundant of previous interrogatories. Plaintiff incorporates by reference his responses to Interrogatory No. 10.

INTERROGATORY NO. 21

Describe with specificity Your understanding of Defendants' practices regarding fuel, motor, and transformer oils You allege were used by Defendants on or at Lake Wateree, including but not limited to the type and quantity of transformer oil used, disposal practices, and any documents, testimony, or other evidence on which Your understanding is based.

RESPONSE: Plaintiff objects to this interrogatory because it seeks information that is more appropriate for expert discovery, including analysis of the chemical makeup of materials used in the Mosquito Control Program. Plaintiff further objects to this interrogatory as it seeks information more available to Defendants. Plaintiff is not a scientist and has no personal knowledge relating to Defendants' practices. Notwithstanding, and according to scientific research, Defendants employed substances containing PCBs in their MCP program on Lake Wateree. Plaintiff has provided information in these responses regarding this historic use. Plaintiff reserves the right to identify Defendants' documents in support of this interrogatory and further reserves the right to supplement and/or modify this response as discovery in this matter continues.

INTERROGATORY NO. 22

Identify any Communications, data, articles, studies, or similar findings that indicate individuals, entities, or sources other than Defendants are responsible for the presence of PCBs in Lake Wateree.

RESPONSE: None.

INTERROGATORY NO. 23

Identify any Social Media accounts which you have used and/or maintained in the last six (6) years.

RESPONSE: Plaintiffs object to this interrogatory because it requests the disclosure of personal, sensitive, and confidential information that is irrelevant to the issues pertinent to this action. Subject to and without waiving any objection, Plaintiff has the following social media accounts: Instagram, Facebook, TicToc, X, SnapChat, Threads, WhatsApp, Reddit, YouTube, Venmo, LinkedIn, Pinterest.

Respectfully submitted,

WYCHE, P.A.

s/Jessica L. Fickling
Jessica L. Fickling (Fed. ID No. 11403)
Jim May (Fed. ID No. 11355)
M. Lucy Dinkins (Fed. ID No. 11961)
P.O. Box 12247
Columbia, SC 29211-2247
P: (803) 254-6542
jfickling@wyche.com
jmay@wyche.com
ldinkins@wyche.com

SAVAGE, ROYAL & SHEHEEN, LLP

Vincent A. Sheheen (Fed. ID No. 7016)
Austin M. Sheheen (Fed. ID No. 13938)
P.O. Drawer 10

Camden, S.C. 29021
P: (803) 432-4391
vsheheen@thesavagefirm.com
asheheen@thesavagefirm.com

SPEIGHTS & SOLOMONS, LLC

A. Gibson Solomons, III (Fed. ID No. 7769)
Post Office Box 685
Hampton, SC 29924
P: (803) 943-4444
gsolomons@speightsandsolomons.com
Attorneys for Plaintiffs

October 3, 2025

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION

Clyde Marcus Jones, II; Dennis Phillips, and Deborah Phillips, on behalf of themselves and all others similarly situated, Plaintiffs, v. Duke Energy Corporation and Duke Energy Carolinas, LLC, Defendants.	Civil Action No.: 3:24-cv-1281-MGL **CERTIFICATE OF SERVICE**

I hereby certify that I have served Plaintiffs' Responses to Defendant's First Set of Interrogatories by email, addressed as follows:

Kevin A. Dunlap
Steven D. Weber
Parker Poe Adams & Bernstein, LLP
Kevindunlap@parkerpoe.com
steveweber@parkerpoe.com

Nash E. Long
Katharine W. Durante
Merideth S. Daly
Hunton Andrews Kurth, LLP
nlong@hunton.com
kdurante@hunton.com
mdaly@hunton.com

Attorneys for Defendants



Sarah B. Davis
Wyche, P.A.

October 3, 2025

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION

Clyde Marcus Jones, II; Dennis Phillips, and Deborah Phillips, on behalf of themselves and all others similarly situated, Plaintiffs, v. Duke Energy Corporation and Duke Energy Carolinas, LLC, Defendants.	Civil Action No.: 3:24-cv-1281-MGL **VERIFICATION**

I, Clyde Marcus Jones, II, state that I have read the Plaintiff's Responses to Defendants' First Set of Interrogatories to Plaintiffs and know the contents thereof, and verify that the statements therein contained are true and correct to the best of my knowledge and belief. I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment by contempt.

October 2, 2025

Clyde Marcus Jones, II

Exhibit 14

672

Commissioners of The Sinking Fund of the State S. C.
To:
Wateree Power Company.

The State of South Carolina.

Know all men By these Presents, That this Indenture made this seventh day of January A. D. 1916, between the Commissioners of the Sinking Fund of the State of South Carolina, party of the first part and Wateree Power Company a Corporation organized under the laws of the State of South Carolina, party of the second part; Witnesseth:

That the said Commissioners of the Sinking Fund, party of the first part by virtue of the authority conferred by the act of the General Assembly of the said State, in consideration of the sum of Twenty four hundred Sixty seven & 84/100 Dollars to them in hand paid by the said Wateree Power Company, and in further consideration of the complete and faithful performance of the conditions hereinafter expressed and hereby promised and undertaken to be performed completely and faithfully by the said Wateree Power Company, its successors or assigns, have granted bargained, sold and released and by these presents, do grant, bargain, sell and release unto the said Wateree Power Company, party of the second part all the rights, title, interest and estate of the State of South Carolina, in and to the following lands and property, to wit:

All the right, title and interest of the State of South Carolina in and to that piece, parcel or lot of land lying being and situate in Berkeley County in the State of South Carolina, lying in the river flats along the western bank of Wateree River, being one hundred (100) feet wide, and five (5) miles long extending from the mouth of Savney's Creek to foot of hill at Devil's Elbow, being well defined and commonly known as the Wateree Canal.

Together with all and singular the rights, members, hereditaments and appurtenances to the said premises belonging, or in any wise incident or appertaining; Provided, never the less, that this title, deed or grant is made upon the following expressed terms and conditions, to wit: That the said Wateree Power Company its successors or assigns shall on or before the seventh day of January A. D. 1921, erect or cause to be erected a dam and power house on Wateree River, adjacent to the property

Marshall & Solomon Power Co.
Charlotte, N.C.
1-29-16

herein before granted, or other improvements in the developement of the water power thereon, of the value of not less than Five Hundred Thousand Dollars ($500,000.00), or shall within said period, expend the said sum of not less than Five Hundred Thousand Dollars, ($500,000.00) in the erection of said dam, power house or other improvements for the generation, developement, manufacturing or transmission of electricity to be used for lightning, manufacturing or other purposes; and provided further, that should the said Wateree Power Company, party of the second part, its successors or assigns, not expend the said sum of Five Hundred Thousand ($500,000.00) Dollars in the erection and operation of said dam power house, or other improvements for the development of said Water Power as herein provided before the expiration of the time and period herein limited, then the said property herein before granted, shall revert to the State of South Carolina, and the said State by or through its agents, may at any time thereafter, take exclusive possession of said canal property and land herein conveyed conditionally as above set forth, together with all improvements placed thereon, by the party of the second part, its successors or assigns and this title deed shall thereupon become null and void.

To Have and To Hold all and singular the premises before mentioned unto the said Wateree Power Company, its successors or assigns forever, subject however to the terms and conditions herein before set forth.

Witness the hands and seals of the said Commissioners of the Sinking Fund, the party of the first part, and the said Wateree Power Company, party of the second part has caused this instrument to be executed by N. A. Cocke its Secretary the year and day first above written.

Signed sealed and delivered
in the presence of
Ada C. La Borde.
T. K. Johnstone

1.50
Rev.

Richd. I. Manning (L.S.)
Governor
Thos. H. Peeples (L.S.)
Attorney General.
Carlton W. Sawyer (L.S.)
Comptroller General.
D. T. Carter (L.S.)
State Treasurer.
J. T. Lide (L.S.)
Chairman House Committee
on Ways & Means

Niels Christensen (L. S.)
Chairman Senate Finance Committee
Wateree Power Company,
By N. A. Cocke
Its Secretary.

State of South Carolina }
County of Richland }

Personally appeared before me T. K. Johnstone and made oath that he saw the above named Richard I. Manning Governor, Thomas H. Peeples Attorney General, Carlton W. Sawyer, Comptroller General Niels Christensen Chairman Senate Finance Committee, S. T. Carter State Treasurer, J. T. Giles, Chairman House Committee on Ways & Means, and Wateree Power Company by N. A. Cocke its Secretary, sign, seal and as their act and deed execute and deliver the foregoing instrument for the uses and purposed therein mentioned and that he with Miss Ada C. La Borde witnessed the execution thereof, the words "Niels Christensen Chairman Senate Finance Committe" were interred in the probate before signing by witness and attestation by notary Public.

Sworn to and subscribed
before me this twelfth day
of January A. D. 1916. T. K. Johnstone.
D. H. Means
Notary Public
for S. C.

Recorded Jan 25 1916.

R. B. Elliott, J. H. Elliott, Ellen H. Tidwell & Carrie E. McCoy
-To-
Nettie Young.

State of South Carolina, }
County of Kershaw }

Know all Men by these Presents, That we R. B. Elliott, Ellen Henrietta Tidwell, Carrie Elizabeth McCoy and J. H. Elliott in the State aforesaid for and in consideration of the sum of Ten Dollars and other valuable consideration to us paid by Nettie Young in the State aforesaid, have granted, bargained, sold and released, and by these presents do grant, bargain, sell and release unto the said Nettie Young

All of that piece, parcel or tract of land, situate, lying and being in the County and

Deeds Vol 9 Page 5-1916

Exhibit 15

11790 BK1083 PG317

NOTE:
LINES A TO B FOLLOW CONTOUR ELEVATION 226.5' U.S.G.S. SEA LEVEL DATUM AS SHOWN ON P.B. 36, AT PAGE 223, RECORDED IN THE KERSHAW COUNTY CLERK OF COURT OFFICE.

PIER
Permit # 1984

CERTIFICATE

LAKE WATEREE

This is to certify that this plat is approved by The Kershaw Co. Planning & Zoning Dept. for recording in the Clerk of Court for Kershaw Co.

11-29-01
Date

Planning & Zoning Director As'

LOCATION MAP

GRAPHIC SCALE
40 0 20 40
1 inch = 40 . ft.

FILED FOR RECORD 11/29/2001
AT 04:02P BOOK 01083 PAGE 00317
Joyce McDonald-Clerk of Court - RMC
Kershaw County Courthouse 000011790

1778 SAILING CLUB ROAD

Lot 41
Section 41

Lot 40
Section 41

0.98 acre

Lot 39
Section 41

N 69°47'31" E
84.50'
N 55°00'37" E
76.19'
S 41°45'15" E
270.69'
N 45°08'43" W
286.85'
S 57°28'30" W
149.22'

POSSIBLE LOCATION OF SEPTIC TANK

FILED FOR RECORD 11/29/2001
AT 04:02:03PM BOOK 01083 PAGE 00317
Joyce McDonald - Clerk of Court - RMC
Kershaw County Courthouse 000011790
PLAT

POWER POLE
TELEPHONE PEDESTAL
WATER METER
ASPHALT APRON
UNPAVED DRIVE
CL ACCESS ROAD (P.B. 36, PG. 223)
CENTERLINE OF DITCH
16' R/W

SAILING CLUB ROAD
S-28-739 66' R/W

SOUTH CAROLINA REGISTERED LAND SURVEYOR 14799 ROBERT H. LACKEY

SOUTH CAROLINA ROBERT H. LACKEY SURVEYING, INC. No.C00753 CERTIFICATE OF AUTHORIZATION

LEGEND:
Iron Pin Found – ●
Iron Pin Set – ○
Power Pole – /

Prepared for:
JOHN M. DEAL, JR.
CLYDE M. JONES
CLYDE M. JONES, II

Prepared by: ROBERT H. LACKEY SURVEYING, INC.

PROPERTY SURVEY November 13, 2001 Tax Map No. 128-04-41-040

Located in Flat Rock Township – Kershaw County – South Carolina

Being shown as Lot 40 – Section 41 – LAKE WATEREE – P.B. 36, PG. 223

References: D.B. 662, PG. 259

This property is subject to Restrictive Covenants recorded in the Office of the Clerk of Court for Kershaw County in Deed Book IR, at page 818.

A portion of this property lies in a 100 year flood plain as shown on FIRM map 45055C, panel 0145 D, dated 12/6/2000.

I hereby state that to the best of my knowledge, information, and belief, the survey shown hereon was made in accordance with the requirements of the Minimum Standards Manual for the Practice of Land Surveying in South Carolina, and meets or exceeds the requirements for a Class B survey as specified therein; also there are no visible encroachments or projections other than shown.

LWSAIL40.DWG ACD-581

Robert H. Lackey – SCRLS # 14799 – P.O. Box 713 – Camden, SC 29020 – Phone 803-432-0968

Exhibit 16

9

STATE OF SOUTH CAROLINA
COUNTY OF KERSHAW

FILED FOR RECORD
1982 MAR 16 AM 9:55

THIS DEED, made this 8th day of February, 1982, from CRESCENT LAND & TIMBER CORP., a corporation organized under the laws of the State of South Carolina, hereinafter called "Grantor", to

STEPHEN L. HANLEY

hereinafter called "Grantee" (whether one or more, individual or corporation);

0316-00-00-040

WITNESSETH: That the said Grantor in consideration of the sum of Thirteen Thousand Four Hundred and no/100----------($13,400.00) Dollars to it paid, the receipt of which is hereby acknowledged, has bargained and sold and by these presents does grant, bargain, sell and convey unto the said Grantee, all of that certain tract of land situate, lying and being in Kershaw County, State of South Carolina, said land being more particularly described as follows:

BEING Lot 40 in Section 41, as shown on map recorded in Map Book 36 at page 223 in the office of the Clerk of Court for Kershaw County AND BEING a part of the property conveyed to Crescent Land & Timber Corp. by deed of Duke Power Company recorded in Book HW at page 1493 in the office of the Clerk of Court for said County.

This conveyance is made subject to the following easements, reservations, conditions and restrictions:

1. That said lot shall be used only for single family recreation and/or single family residence purposes;

2. That not more than one private single family residential dwelling, together with accessory buildings and facilities normally incident to a private single family residential home site shall be constructed upon the said lot;

3. Said lot shall not be used for business, commercial, industrial, condominium, apartment or other multi-family residential uses;

4. Subdivision of the land conveyed by this deed into two or more lots is expressly prohibited except where:

A. Every lot resulting from such subdivision shall contain at least 30,000 square feet in area; and

B. Every lot resulting from such subdivision, if any part of any boundary line of that lot is within one hundred fifty (150') feet distance from one of the Catawba River lakes, shall have a lake or water front width of seventy-five (75') feet or more. The lake or water front width shall be measured on a straight line between the two points at which the side lines of said lot intersect with Duke Power Company's lake property;

5. No part of any building shall be constructed nearer than ten (10') feet from any lot line or nearer than fifty (50') feet from the contour shown on the aforesaid map; provided, however, existing buildings located on the land conveyed hereby may remain where they are;

6. No trucks, trailers or other vehicles (other than permanently installed mobile homes) shall be placed upon said lot and used as a building;

7. No refuse, garbage, rubbish or waste of any kind shall be placed upon other lands, roadways, or waters adjoining said lot nor shall any refuse, garbage, rubbish or waste of any kind be placed upon or allowed to remain upon said lot;

8. No illegal, offensive or obnoxious use shall be made of said lot nor shall a nuisance be maintained thereon;

9. Grantee will construct and maintain in accordance with the requirements of local Health Departments and the State Board of Health, either an outside toilet or an inside sewage system and septic tank or an inside sewage system connected to a utility system meeting the aforesaid governmental requirements;

10. Grantee will not permit any use of the premises and buildings thereon by the general public for compensation or otherwise, provided that this provision shall not preclude normal visiting by and entertainment of Grantee's nonpaying guests, and provided further, that this provision shall not preclude Grantee's leasing his single family residential building to a third party for use in compliance with the restrictions herein contained;

11. Any water system used to supply said lot shall comply with the regulations of local Health Departments and the State Board of Health;

12. Grantor reserves unto Duke Power Company, its successors and assigns, an easement or easements ten feet (10') in width over any portion(s) of the lot herein conveyed adjoining any road right of way shown on the recorded map. Said easement shall be on either side or both sides of any road right of way shown on the recorded map and may be used for the purpose of the installation, maintenance and operation of utilities, including electric, telephone, radio and television transmission cables, and other service facilities, together with the accessory right to locate guy wires, braces or anchors, and to cut, trim or remove trees and plantings wherever necessary upon said lot in connection with such installation, maintenance and operation;

13. Grantor reserves unto Duke Power Company, its successors and assigns, an easement for the maintenance and operation of any existing electric distribution lines that may be located upon said lot, together with the right to cut, trim or remove any trees and plantings wherever necessary in connection with such maintenance and operation;

14. Grantor reserves for itself, its successors and assigns, an easement over a ten-foot wide strip running along the inside of all side lot lines of said lot together with the right to, but not the obligation to, construct and maintain drainage ditches, slopes or storm sewers. In the event that Grantee has now a presently existing structure on said strip, then the strip shall detour around said structure (keeping within the aforesaid lot lines and having a ten-foot (10') width from the edge of the structure) and except for said detour, run along said side lot lines with said ten-foot width;

15. Grantor reserves unto Duke Power Company, its successors and assigns, the right to deposit by air upon the land herein conveyed any emissions arising from or associated with the operation of the electric power plant or plants now constructed or to be constructed on the Catawba River or its tributaries by the said Company;

16. No owner of said lot shall have any claim or cause of action against Grantor, its affiliates or its licensees arising out of the exercise or non-exercise of any easement or other right reserved hereunder or referred to herein except in cases of willful or wanton misconduct;

17. No delay or failure on the part of an aggrieved party to invoke an available remedy in respect to a violation of any provision contained herein or referred to herein shall be held to be a waiver by that party of any right available to him upon the recurrence or continuance of said violation or the occurrence of a different violation;

18. In the event Duke Power Company, its successors or assigns, hereinafter acquires title to the property conveyed hereby, none of the restrictions, easements, conditions, or reservations herein contained shall preclude or be construed to preclude said Company from using said property for any of the following purposes: (1) electric generating plant(s) including ancillary facilities for construction and operation of the electric generating plant(s); (2) electric substation(s) and transmission lines, together with necessary rights of way for the construction of said substation(s) and lines and ingress and egress thereto; (3) "Exclusion Area(s)" as now or hereinafter defined in 10 CFR § 100.3, as amended; (4) sewer line(s); and (5) water supply line(s); and

19. Every restriction, easement, condition and reservation set out herein or referred to herein is hereby declared to be independent of and severable from each other, and if any of same shall be held by a court of competent jurisdiction to be invalid or unenforceable all the remainder of said easements, conditions, reservations and restrictions shall continue unimpaired and in full force and effect.

20. If an existing access road crosses the lot herein conveyed, the right of ingress and egress over said road is reserved for the purchasers of recreational lots served by said road, their heirs, successors and assigns, and for Grantor, its successors and assigns.

Grantee shall have the nonexclusive right of ingress and egress over the access roads(s) shown on the recorded map. However, Grantor, its successors and assigns, reserves the right to relocate at any time, with or without the consent of Grantee, any access road(s) or portion(s) thereof, provided:

(a) Construction of the relocated portion(s) of said access road(s) shall be completed prior to the closing of the discontinued portion(s).

(b) Grantor shall record a plat of survey showing the portion(s) of any road(s) to be relocated and the relocation of the road(s) and right of way for said road(s) as relocated.

(c) In the exercise of its right to relocate access roads, Grantor may, if it shall deem desirable, increase the road distance between the lot herein conveyed and the nearest public road.

(d) The provisions of this paragraph shall not apply to roads which have been formally dedicated and accepted as publicly maintained roads; recording of the plat of survey for the lot herein conveyed shall not be construed as an offer of public dedication of the roads shown thereon.

21. By accepting this deed, Grantee signifies his understanding that Grantor will not hereafter construct, maintain or improve any access road other than those access roads relocated as provided in paragraph 20 above. Grantor grants to Grantee the right to maintain and repair at Grantee's expense the access roads to the lot herein conveyed provided that such maintenance and repair shall not unreasonably interfere with the use thereof by Grantor or other lot purchasers.

As part of the consideration for this conveyance, Grantee does hereby give and grant unto the Grantor, its successors and assigns, the right, privilege and option to purchase for the sum of Ten ($10.00) Dollars any right(s) of way for ingress and egress which may be acquired by Grantee, whether by operation of law or otherwise, over any lands of Grantor and any lands formerly of Grantor heretofore conveyed to others, except those rights of way for access shown upon the recorded maps of Grantor for the section and lot herein conveyed. This option shall remain in effect for a period of time equal to the period established in the Option to Purchase given by Grantee to Duke Power Company by instrument of even date herewith to be recorded. This option shall run with the land and shall be binding upon the Grantee, Grantee's heirs, successors and assigns.

As part of the consideration for this conveyance, Grantee hereby releases and forever quitclaims unto Grantor all Grantee's right, title and interest in and to any adjoining or nearby lands, the record title to which is in Grantor, except such interest in said adjoining or nearby lands as Grantee holds pursuant to a written instrument between Grantor and Grantee which instrument is still valid after the recording of this deed. By delivering and accepting this deed Grantor and Grantee acknowledge and agree that the Lease between them dated prior to the recording of this deed and including all or part of the land hereby conveyed is hereby terminated.

By accepting this deed Grantee signifies his understanding that Grantor specifically makes no promises, covenants, warranties or guarantees relative to:

1. The continued existence of any lake;

2. The purity or any other characteristic of the water in any lake;

3. The maintenance of any particular water level at any time or season in any lake;

4. Any right to use for any purpose or any right to access to the water of any lake; and

5. Any right to construct piers, docks, boathouses, or any other improvements of any sort except upon the land conveyed hereby in keeping with the aforesaid restrictions, easements, conditions and reservations.

By accepting this deed Grantee signifies his understanding that Duke Power Company has certain privileges and easements affecting the property hereby conveyed which include the right, privilege and easement of backing, ponding, raising, flooding or diverting the waters of the Catawba River and its tributaries upon and over said property, as more specifically described in the deed from Duke Power Company to the Grantor recorded in the office of the Clerk of Court in the aforesaid County.

TOGETHER with all and singular the rights, members hereditaments, and appurtenances to the said premises belonging, or in any wise incident or appertaining.

TO HAVE AND TO HOLD all and singular the premises before mentioned, unto the said Grantee, Grantee's heirs, successors and assigns forever, except that this conveyance is made subject to the easements, reservations, conditions and restrictions set out above and to all other conditions, easements, reservations and restrictions of record.

And the said Grantor for itself and its successors and assigns covenants with the said Grantee and Grantee's heirs, successors and assigns, that it is seized of said premises in fee and has right to convey the same in fee simple; that the same is free and clear from all encumbrances and that it will warrant and defend said title to the same against the lawful claims of all persons whomsoever, except that this conveyance is made subject to the reservations, easements, conditions and restrictions set out above or of record and to the taxes for the current year which Grantee hereby assumes and agrees to pay.

IN WITNESS WHEREOF, the said Grantor has caused this instrument to be executed by its duly authorized officials this the day and year first above written.

Signed, Sealed and Delivered
in the Presence of:

Sammy W. Grace

Ethelene D. Williams

CRESCENT LAND & TIMBER CORP.

By Miles M. Bowyer
Vice President

Attest: Edward L. Kelly Jr.
Asst. Secretary

STATE OF ~~SOUTH~~ NORTH CAROLINA
COUNTY OF MECKLENBURG

PERSONALLY appeared before me Sammy W. Cross and made oath that he saw the within named CRESCENT LAND & TIMBER CORP. by Miles J. Boyer, Vice President, and Edward S. Helms, Jr., Assistant Secretary, sign, seal and as its act and deed deliver the within written instrument, and that he with Ethelene G. Williams witnessed the execution thereof.

Sammy W. Cross

SWORN to before me this 8th day of February, 1982

Ethelene G. Williams
Notary Public

My Commission Expires: March 10, 1986

ETHELENE G. WILLIAMS NOTARY PUBLIC MECKLENBURG COUNTY, N. C.

D E E D

CRESCENT LAND & TIMBER CORP.
TO
STEPHEN L. HANLEY

Drawn by:
Crescent Land & Timber Corp.

Please Mail To:
Stephen L. Hanley
122 Union Street
Camden, SC 29020

I hereby certify that the within Deed has been this 16th day of March, A.D., 1982 recorded in Book IR of Deeds, page 818 at 9:55 o'clock A.M.

Recorded this 16th Day of March 19 82

In Book 3 Page 115

Linda W. Smedale
CLERK OF COURT
KERSHAW COUNTY, S. C.

STEVE S. KELLY, Kershaw County Treasurer
Auditor Kershaw County









KERSHAW COUNTY 0 2 2 3 1 1

