IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
SOUTHERN DIVISION
No. 7:23-CV-897

IN RE:	)
	)
CAMP LEJEUNE WATER LITIGATION	)
	)
This Document Relates To:	)
ALL CASES	)

REPLY IN SUPPORT OF UNITED STATES' MOTION TO EXCLUDE PLG's PHASE I EXPERT TESTIMONY IN SUPPORT OF USING ATSDR'S WATER MODELS TO DETERMINE EXPOSURE LEVELS FOR INDIVIDUAL PLAINTIFFS

It is PLG's burden to demonstrate that ATSDR's water models for Tarawa Terrace and Hadnot Point/Holcomb Boulevard are scientifically valid under *Daubert* for the purpose of using the water models in this litigation to determine exposure levels for individual plaintiffs. As the Court noted during the March 25, 2025, Phase I Hearing, "I don't see confidence intervals anywhere in these models, and there has to be for them to be scientifically valid." D.E. 343, 33:7-10. PLG acknowledges that ATSDR's water models systematically overpredict simulated contaminant concentration levels when compared to the limited available data from the 1980s, and neither PLG's opposition brief nor PLG's Phase I expert reports address error rates or error bounds, confidence intervals, or the results of the uncertainty analyses performed on ATSDR's water models for simulated concentration levels into the past. Instead, PLG and PLG's Phase I experts hide behind the complexity of ATSDR's water models and environmental modeling in general to distract from the fact that the uncertainty in ATSDR's water models is far too great to accurately and reliably use the models to determine exposure levels for individual plaintiffs.

Even though the results of ATSDR's uncertainty analyses are not discussed in their expert reports, PLG's Phase I experts repeatedly recognized the limitless uncertainty in ATSDR's water models at the time the models were being developed for a much more limited purpose of determining relative exposure levels for population level epidemiological studies. PLG asks this Court to disregard contemporaneous statements from ATSDR, PLG's Phase I experts, and outside reviewers about the intended purpose and limitations of ATSDR's water models in favor of the present-day *ipse dixit* of PLG's Phase I experts in this litigation.

The Court should exclude the broad and sweeping opinions of PLG's Phase I experts and reject PLG's request to adopt ATSDR's water models to determine exposure levels for individual plaintiffs in this litigation.

BACKGROUND

I. ATSDR's Water Models Were Not Created or Intended for the Purpose of Determining Exposure Levels for Individual Plaintiffs in Litigation.

PLG acknowledges that ATSDR's water models were "were not created for litigation," and PLG's Phase I experts agree that a model's intended purpose informs the foundation for building the model. D.E. 397, p. 37; D.E. 368, pp. 4-5. Dr. Aral wrote in his own book that "[t]he use of models in a specific application cannot and should not go beyond the question posed during the model development stage." D.E. 396-1, p. 40. As a federal public health agency, ATSDR developed water models to determine relative exposure levels for population level epidemiological studies and public health assessments that ultimately informed policy decisions about presumptions for VA benefits related to Camp Lejeune. D.E. 368, p. 1.

Indeed, the results of the ATSDR's water models were not intended for determining exposure levels of individual plaintiffs in litigation. During the 2009 ATSDR Expert Panel, a meeting in which PLG's experts, Mr. Maslia, Dr. Konikow, Dr. Aral, and Mr. Faye, attended and participated, another expert panelist, Dr. Rao S. Govindaraju, commented:

> **I was not preparing myself by trying to advise people by what one should do in case of litigation. And maybe if that is the case our objective functions should be somewhat different** . . . So I just want us to be able to explain that if we should be thinking in terms of what would fly in a court of law or see what we can do –

D.E. 369-6, 174:18-175:6. Mr. Maslia reassured Dr. Govindaraju that the intended purpose of the water models was to inform epidemiological studies: **"Well, the answer is anyone can sue or sue anyone at any time of the day…we're not gearing our study for that. What we're gearing our study for is [sic] to be able to provide the epidemiologists and the epidemiologist to be able to access epi results."** *Id.* at 175:7-13 (emphasis added). Dr. Frank Bove, ATSDR's Lead Epidemiologist for ATSDR's Camp Lejeune health studies, added that **"We want to add, make a contribution if we could to that literature.**

That's the primary goal here. It's not litigation. It has nothing to do with litigation." *Id*. at 176:8-12 (emphasis added).

PLG's own Phase I experts raised concerns at that time about the accuracy and precision of the results of ATSDR's water models. D.E. 368, pp. 7-10. Mr. Faye, stated: **"I will find it very difficult to defend these results to my technical peers or in a court of law" and that "[w]e let the 'tail wag the dog' and assigned extraordinary credibility to simulated numbers rather than to well established concepts."** D.E. 372-11 (emphasis added). Notably, PLG retained Mr. Faye as an expert and had him start preparing a rebuttal report in this case, but Mr. Faye's rebuttal report ultimately was not disclosed, and Mr. Faye has not been deposed in the case. D.E. 369-10, 56:20-58:18.

Contemporary outside reviewers of ATSDR's water models also raised concerns about the models' accuracy and precision, including Dr. Dan Waddill, the Navy's water modeler, Dr. Prabhakar Clement, working for the National Research Council, and other experts who participated in ATSDR's 2005 and 2009 Expert Panels. *See* D.E. 368, pp. 7-12; *see also* D.E. 369-5, 51:5-18 ("DR. HILL: Two things. I'm kind of uncomfortable with having numbers like this reported with three significant digits…DR. BOVE: … So I actually reduced the number of digits. But, yeah, I mean, again, it doesn't affect the relative positions. DR. HILL: Right, it just affects the appearance of [precision]."). Dr. Dan Waddill, who drafted the evaluation attached to the Navy's letter to ATSDR, testified in this case that the results of ATSDR's water models were not scientifically valid:

> Do you have an opinion as to whether ATSDR water modeling followed the scientific approach -- followed a scientific approach?
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> ****
>
> THE DEPONENT: You know, I do not think their results were scientifically valid, because, you know, science needs to be based on real-world observation and analysis. That's the first thing, and there were just not enough real-world measurements for this to count as a scientifically valid approach. The other thing that's fundamental to science is that if you have a hypothesis, it has to be testable and it has to be a hypothesis that can succeed or fail. And the -- you know, the idea that the model reconstruction of those three-plus decades, '70s, '60s, '50s, there's just no way to test that. There's no data to test it against. So it's not a testable idea. There's no way it can fail. You can say it's successful, but you can't -- you can't justify that claim.

D.E. 397-15, 221:17-222:8; 234:17-235-9. Further, PLG speculates that "Dr. Clement appeared to back off of his criticisms in his published reply to ATSDR's comments," but PLG did not seek to take Dr. Clement's deposition in this case. D.E. 397, p. 14.

ATSDR's water modeling reports, which Mr. Maslia, Dr. Aral, and Dr. Bove were involved in drafting, also make clear that the water models were not intended for determining exposure levels in individual plaintiffs. D.E. 368-6, p. 145. For example, Appendix I5 to the Chapter I report for the Tarawa Terrace model includes a disclaimer issued by ATSDR notifying the public that the model's results "**may not reflect actual exposure of specific individuals to contaminants in the water system**." D.E. 371-2 (emphasis added). Mr. Maslia confirmed that he requested the disclaimer in 2007 to put on ATSDR's website. D.E. 369-10, 137:20-138:4. The disclaimer in Appendix I5 remains on ATSDR's website today. *See* ATSDR Website, Chapter I Table, available at https://stacks.cdc.gov/view/cdc/156706.

Similarly, the Chapter A reports authored by Mr. Maslia and Dr. Aral for ATSDR's water models make clear that the models cannot be used to determine whether an individual has suffered health effects as the result of past exposure to Camp Lejeune water. D.E. 370-3, p. A98; D.E. 371-3, p. A182. Moreover, both Chapter A reports explicitly state that there was not sufficient data available to accurately estimate daily levels of the contaminants in the water at Camp Lejeune, as the results have been used by PLG's causation experts. D.E. 370-3, p. A97 ("**No. The available data are not specific enough to accurately estimate daily levels of PCE in the Tarawa Terrace water system.**") (emphasis added); D.E. 371-3, p. 181 ("**No. The available data are not specific enough to accurately estimate daily levels of VOCs (PCE, TCE,1,2-tDCE, VC, and benzene) in the Hadnot Point-Holcomb Boulevard (HPHB) study area**.") (emphasis added). For example, PLG disclosed a Phase III exposure expert, Dr. Kelly Reynolds, that misuses ATSDR's water models to determine daily exposure levels for individual plaintiffs in the litigation,

and PLG's Phase III specific-causation experts in turn rely on these improper exposure estimates. **Ex. A**, Reynolds Report, Appendices 1-25.[1]

II. As A Public Health Agency, ATSDR Developed Its Water Models Using Conservative, Health-Protective Assumptions That Resulted in Higher Estimated Contaminant Concentration Levels Over Longer Timeframes.

PLG wrongly suggests that "[t]he Government incorrectly claims that ATSDR made 'health protective' or 'worst case scenario' assumptions… ." D.E. 397, p. 21. In 2017, ATSDR issued a Public Health Assessment on "Camp Lejeune Drinking Water," which relied on ATSDR's water models. D.E. 397-3. In a section entitled "Overall Limitations of Conclusions," ATSDR stated:

> ATSDR attempted to assess accurately the potential health effects that contamination had on the MCB Camp Lejeune community. However, limitations exist in the environmental data sets used to make that assessment. **When such data limitations appeared, ATSDR chose conservative (health-protective) data-interpretation options that were estimates of exposure in the upper end of the range of recommended values.**
>
> **Limitations related to VOCs include the lack of water sampling data prior to 1982, uncertainty about when contamination first occurred in water supplies, reliance on the testing of finished water for leaving the treatment plant rather than at the point of exposure (i.e. the faucet or shower) for estimating exposure, limited information about site-specific exposure parameters**, lack of indoor air samples, **uncertainties that are intrinsic to the use of models to predict inputs to the assessment**… .

Id. at xix (emphasis added).[2]

As ATSDR told the Navy, "a successful epidemiological study places little emphasis on the actual (absolute) estimate of concentration and…emphasizes the relative level of exposure… regardless of how

[1] PLG suggests that the United States' Phase III exposure expert, Dr. Judy LaKind, also relied on ATSDR's water models to calculate individual exposure levels. D.E. 397, p. 16 n. 23. However, Dr. LaKind's report was in response to Dr. Reynolds' report and, unlike Dr. Reynolds, Dr. LaKind used a very conservative methodology, acknowledging the uncertainty, limitations, and unreliability of using ATSDR's water models for determining individual exposure levels. *See* D.E. 397-11, p. 11.

[2] In relying on ATSDR's water modeling results, the 2017 Public Health Assessment further states that "a major data limitation was the small number of drinking water contaminant results from actual samples taken at the water treatment plant or at the point of exposure" and that "[t]he approach used in this assessment was to assume the historical reconstruction concentrations were the point of exposure concentrations, which is consistent with the approach used in the ATSDR health studies." D.E. 397-3, p. 43. In other words, ATSDR used its water modeling results for a public health purpose, not for determining individual exposure like in a toxic tort case.

far off the estimated concentration is to the 'true' (measured) PCE concentration)." D.E. 370-7, p. 6; *see also* **Ex. B**, Bove Dep. (Oct. 17, 2024), 176:13-179:15.[3] ATSDR made this statement in direct response to concerns raised by the Navy about the accuracy and reliability of the ATSDR's Tarawa Terrace water model. D.E. 370-5. Specifically, the Navy observed that Mr. Maslia's team had selected a wide calibration standard for the Tarawa Terrace model of plus or minus "1/2-order of magnitude of the observed value." *Id*. at 5. For example, a measured PCE concentration of 1,580 ug/L had a calibration target range of 500 to 5,000 ug/L (approximately three times higher or three times lower than the observed concentration). *Id*. Despite this very wide calibration standard for the Tarawa Terrace model, 12% of simulated PCE concentrations failed the calibration standard at the water treatment plant and 53% of the simulated concentrations fell outside the calibration standard at the water supply wells. *Id*. In the Chapter F report written by Mr. Faye, ATSDR stated that the "results indicate that simulated PCE concentrations moderately to substantially overpredicted observed concentrations at water-supply wells."[4] D.E. 395-13, F33, F42. When asked about the Tarawa Terrace model's results, Mr. Maslia testified that "If I were to go back and look again today, we probably would not use a calibration standard… ." **Ex. C**, Maslia Dep. (May 29, 2025), 54:5-55:11.

[3] Mr. Maslia unequivocally testified that he drafted ATSDR's response to the Navy before claiming later in his deposition that an epidemiologist had drafted the specific language above and that he had only overseen and reviewed it. *Compare* D.E. 369-10, 86:20-24 *with* 160:17-162:3.

[4] PLG points to geometric bias in arguing that ATSDR's water models have an acceptable rate of error. D.E. 397, p. 27. Geometric bias is a metric that compares model simulated concentrations with observed concentrations to evaluate the calibration and goodness of fit of a model. D.E. 370-3, p. A25; **Ex. C**, Maslia Dep. (May 29, 2025), 15:11-17:4. A geometric bias greater than one represents a model systematically overpredicting. *Id*. For the Tarawa Terrace model, ATSDR and Mr. Maslia calculated the geometric bias to be 5.9 at the water supply wells and 1.5 at the water treatment plant. TT Ch. A, Dkt. 370-3, p. A25. As an example of how models can be manipulated to reach a desired conclusion, Mr. Maslia submitted a late supplemental expert report recalculating the geometric bias for the Tarawa Terrace model, which was an obvious effort to belatedly demonstrate that the model does not "moderately to substantially overpredict." **Ex. D**, Maslia Supp. Report. Even after recalculating the geometric bias, however, Mr. Maslia agreed that the Tarawa Terrace model still overpredicts. **Ex. C**, Maslia Dep. (May 29, 2025), 34:11-38:7. For the Hadnot Point/Holcomb model, Mr. Maslia testified that a geometric bias was not calculated for the water supply wells, and claims in his report that the geometric bias for the water treatment plant was calculated to be 2.3, a number that confirms the model overpredicts. D.E. 369-10, 264-8-264:24; D.E. 397, p. 27.

III. The Uncertainty in ATSDR's Water Models Is Too Great to Accurately and Reliably Use Them to Determine Exposure Levels for Individual Plaintiffs.

PLG's Phase I Experts, now feigning ignorance of their pre-litigation statements about the intended purpose, uncertainty, and limitations of ATSDR's water models, offer broad and sweeping opinions about the correctness, accuracy, reliability, and soundness of the methodologies and results of ATSDR's water models. *See*, *e.g.*, D.E. 368-6, p. 18; D.E. 369-7, p. 13; D.E. 369-11, pp. 32-33; D.E. 369-12, p. 6-1. Notably absent from PLG's opposition brief and Phase I expert reports are opinions about rates of error or error bounds, confidence intervals, or the results of the uncertainty analyses performed on ATSDR's water models for simulated concentration levels into the past. *Id*. at *passim*. To sidestep addressing these issues, PLG and PLG's Phase I Experts claim that the question of whether ATSDR's water models are sufficiently accurate and reliable to make exposure determinations in individual plaintiffs is outside of their expertise and should be directed to epidemiologists and medical professionals. *See*, *e.g.*, D.E. 369-9, 231:18–232:19; D.E. 397, p. 20. However, the accuracy and certainty of ATSDR's water modeling results fall squarely within their expertise. PLG's Phase I experts simply do not want to address the issue because ATSDR's water models systematically overpredict when compared to the available data from the 1980s and the uncertainty analyses performed on the models reveal enormous amounts of uncertainty in the results for simulated concentration levels into the past.

For example, Mr. Maslia and Dr. Aral wrote in the Chapter I report for the Tarawa Terrace model that "[a]ll models, including the aforementioned models, are subject to varying degrees of uncertainty which are associated with: (1) limited or lack of data, (2) erroneous data due to precision and accuracy limitations, and (3) simplifications of mathematical equations represented by the model." D.E. 397-6, p. I3. For the Tarawa Terrace model's uncertainty analysis, ATSDR performed a probabilistic analysis to assess variability and uncertainty associated with the model results. *Id*. at I48. The model was run 840 times to produce "realizations" that form a distribution of simulated PCE concentrations. *Id*. However, only 510 physically viable realizations were produced. *Id*. In other words, 330 out of 840 or **approximately 39% of the realizations were not viable**, raising concerns about the accuracy of the model and the

representativeness of the input parameter distributions. *Id.*; D.E. 370-5, p. 6. Similarly, for the Hadnot Point/Holcomb Boulevard contaminant fate and transport model, Mr. Maslia and Dr. Aral wrote in Chapter A "i**nsufficient data existed to conduct a statistical analysis for assessment of model calibration fit**" and that "**[t]he results (i.e., range of concentration) presented in the sensitivity analysis report herein should not be considered or interpreted as the results of a robust and comprehensive uncertainty analysis**… ." D.E. 372-2, p. S6.45 (emphasis added); *see also* D.E. 368, p. 9-10; D.E. 369-10, 260:4-264:6.

Indeed, ATSDR itself subsequently determined that the water model results were not useful even for its epidemiological studies. For ATSDR's 2024 Mortality and Cancer Incidence studies for Camp Lejeune the ATSDR did not use the water model results for ***any analysis***, including the dose-response analyses for which it had used the water model results in prior studies. **Ex. E**, Bove Dep. (Oct. 18, 2024), 19:5-20:11.

ARGUMENT

It is PLG's burden to demonstrate that opinions using ATSDR's water models are helpful and reliable under Fed. R. Evid. 702 for the purpose for which PLG proposes using the water models in this litigation to determine exposure levels for individual plaintiffs. D.E. 343, 33:24-34:3 ("[A]s a party with the burden, why are we not looking at the party with the burden's ability to prove anything greater than that if that is sufficient to result in the model -- or for the model to account for the actual known exposure."); *Maryland Cas. Co. v. Thermo-O-Disc, Inc.*, 137 F.3d 780, 782-83 (4th Cir. 1998); Fed. R. Evid. 702 (burden to show expert testimony admissibility is "more likely than not").

I. ATSDR's Water Models for Tarawa Terrace and Hadnot Point/Holcomb Boulevard Will Not Help the Trier of Fact Because the Models' Results Do Not Fit This Case.

ATSDR's water models will not help the trier of fact because the results of the models do not fit this case. The models were intended for the purpose of informing population level epidemiological studies, and ATSDR "chose conservative (health-protective) data-interpretation options that were estimates of exposure in the upper end of the range of recommended values." D.E. 370-7, p. 6; D.E. 397-3, p. xix. The district court's statement in *Coleman v. Union Carbide Corp.*, No. 2:11–0366, 2013 WL 5461855 (S.D.

W.V. Sept. 30, 2013), is directly on point here: a model in a "public safety setting for which it is intended, namely where a regulator desires to know the possible effects that a facility's emissions may have on a given community…tells the fact finder…very little, if anything, [] about whether a class of individuals suffered significant exposure to a proven hazardous substance." *Id*. at *24.

PLG argues that "[c]ontrary to the Government's repeated assertions, Plaintiffs are not required to prove '*absolute* concentrations for individuals for individual exposure determinations." D.E. 397, p. 3. However, PLG misunderstands the issue. In responding to the Navy's concerns about the accuracy of the Tarawa Terrace model, ATSDR stated that "a successful epidemiological study places little emphasis on the actual (absolute) estimate of concentration and…emphasizes the relative level of exposure… regardless of how far off the estimated concentration is to the 'true' (measured) PCE concentration)." D.E. 370-7, p. 6. By referring to "actual (absolute) estimate of concentration," what ATSDR was saying is that the water models' results were not accurate but that accuracy did not matter for purposes of the epidemiological studies.[5] However, in a toxic tort case, the accuracy of concentration levels and exposure estimates do matter, making the results of ATSDR's water models unhelpful and irrelevant to this case.

PLG also argues that "[t]he five questions that the ATSDR modelers set out to answer are the very questions that this Court identified a pertinent to Phase 1." D.E. 397, pp. 5, 19. PLG's argument ignores the fact that as a federal public health agency, ATSDR attempted to answer these questions based on conservative, health protective assumptions and data interpretations. Whether ATSDR's water models tried to answer five generic questions does not inform how accurately or precisely the ATSDR's models did so or the purpose for doing so, which are the relevant considerations for admissibility. Moreover, the fact that ATSDR's water models were used to make comparisons between simulated-concentration levels and

[5] It is true that the Fourth Circuit held in *Westberry v. Gislaved Gummi AB*, 178 F.3d 257 (4th Cir. 1999), that "precise information concerning the exposure is not always available, or necessary, to demonstrate that a substance is toxic to humans given substantial exposure and need not invariably provide the basis for an expert's opinion on causation." *Id*. at 264. However, the Fourth Circuit did not hold in *Westberry* that plaintiffs may rely on irrelevant and scientifically unreliable expert testimony to prove exposure in a toxic tort case. *Id*.

maximum contaminant levels ("MCL") does not demonstrate that the water models are relevant because the MCLs are not relevant to individual causation and ATSDR's "estimates of exposure [were] in the upper end of the range of recommended values." D.E. 397, p. 6; D.E. 397-3, p. xix.

II. ATSDR's Water Models Are Not Scientifically Reliable for Determining Exposure Levels for Individual Plaintiffs in This Litigation.

Even if PLG could show that ATSDR's models were developed for the purpose of determining individual exposure levels, PLG has not demonstrated that the results are scientifically reliable for this purpose. In *Sommerville v. Union Carbide Corp.*, 2:19-cv-00878, 2024 WL 1204094 (S.D. W.Va. Mar. 20, 2024), the district court observed that "some scholars have opined that '[*Daubert*] has proven especially inappropriate and inadequate in evaluating model reliability. The problems that plague all models—namely uncertainty and a lack of transparency—are exacerbated in environmental-tort litigation.'" *Id*. at *6. The district courts in both *Sommerville* and *Coleman* recognized that the accuracy and reliability of a model bears a strong relationship to the inputs and assumptions used in the model. *Sommerville*, 2024 WL 1204094 at *7-19; *Coleman*, 2013 WL 5461855 at *23-34. In an apparent acknowledgement that ATSDR's water models do not reflect real-world conditions, PLG avoids the analyses of *Sommerville* and *Coleman*, which dealt with similar models, and instead attempts to support admissibility of the ATSDR water models' results under the *Daubert* factors without explaining how those "illustrative" factors allow the Court to conclude that ATSDR's water models reliably simulate contaminant concentrations for individual plaintiffs. *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 at 137 (1999). This underscores PLG's failure to produce evidence that ATSDR's water models are scientifically reliable for determining exposure levels for individual plaintiffs in this litigation.

A. ATSDR's Water Models Are Not Scientifically Reliable Because They Relied on Conservative, Health-Protective Assumptions that Do Not Reflect Real-World Conditions.

PLG fails to demonstrate that ATSDR's water models reflect real-world conditions. To the contrary, ATSDR stated that it "chose conservative (health-protective) data-interpretation options that were estimates of exposure in the upper end of the range of recommended values." D.E. 397-3, p. xix. This includes conservative, health protective assumptions and data interpretation methods related to "the lack of

water sampling data prior to 1982," "when contamination first occurred in water supplies," "reliance on the testing of finished water for leaving the treatment plant rather than at the point of exposure (i.e. the faucet or shower) for estimating exposure," and "limited information about site-specific exposure parameters." *Id*. PLG does not dispute that ATSDR made layered assumptions in its water models about mass loading, including conservatively assuming that (1) contaminants immediately entered into the aquifer and (2) that contaminants entered the environment at a constant rate, when, in reality, it would have taken years for contaminants for reach the aquifer and the rate of contaminant entry into the environment would have varied. D.E. 397, p. 21. PLG does not dispute other conservative assumptions which prevented the model results from reflecting reality. PLG does not dispute that ATSDR made conservative assumptions about well pumping and cycling schedules. D.E. 397, pp. 12-13. PLG also does not dispute that ATSDR's water models did not take into account VOC losses, which ATSDR's contractor estimated to be approximately 10%. D.E. 397, pp. 22-23; *see also* D.E. 368, pp. 21-27. In short, ATSDR's water models do not reflect real-world conditions and are unreliable under Fed. R. Evid. 702 and *Daubert* for the purpose of determining exposure levels for individual plaintiffs in this litigation.[6]

B. ATSDR's Water Models Are Unreliable Under Traditional *Daubert* Factors.

PLG's attempt to establish admissibility of the results ATSDR's water models for the purpose of determining exposure levels in individual plaintiffs under the *Daubert* factors is unavailing.

Potential rate of error. As outlined above, PLG acknowledges that the geometric bias for both the Tarawa Terrace and Hadnot Point/Holcomb Boulevard models indicate that the models systematically overpredict when compared to the limited available data from the 1980s. Moreover, neither PLG's opposition brief nor PLG's Phase I expert reports addresses error rates or error bounds, confidence intervals,

[6] PLG points out that the United States' expert Dr. Remy Hennet relied on aspects of the Tarawa Terrace water model in his calculation of the time for PCE to arrive at supply well TT-26. D.E. 397, p. 16. PLG fails to recognize that Dr. Hennet did not rely on the Tarawa Terrace model to calculate PCE concentrations because he recognized that there was not enough data to do so. *See* D.E. 374-3, p. 69. Instead, Dr. Hennet's opinion is limited to "a reasonable range" of times for PCE to arrive at a supply well based on calculations that did not repeat fundamental errors made in ATSDR's model. D.E. 349-3, p. 268:4-6.

or the results of the uncertainty analyses performed on ATSDR's water models for simulated concentration levels into the past. That is no coincidence. As discussed above, the uncertainty analyses performed on ATSDR's water models demonstrate enormous uncertainty in the model-simulated contaminant timeframes and concentrations. For the Tarawa Terrace model, the uncertainty or probabilistic analysis that was run resulted in approximately 39% of the model runs not being viable. D.E. 397-6, p. I48. For the Hadnot Point/Holcomb Boulevard model, "insufficient data existed to conduct a statistical analysis for assessment of model calibration fit" and "[t]he results (i.e., range of concentration) presented in the sensitivity analysis report herein should not be considered or interpreted as the results of a robust and comprehensive uncertainty analysis… ." D.E. 372-2, p. S6.45 (emphasis added); *see also* D.E. 368, p. 10.

Testability. PLG distracts by focusing on ATSDR's methodology. However, it is not possible to test the contaminant timeframes and simulated concentrations produced by ATSDR's water models because sampling data prior to 1982 simply does not exist. As Dr. Waddill explained, "you know, the idea that the model reconstruction of those three-plus decades, '70s, '60s, '50s, there's just no way to test that. There's no data to test it against. So it's not a testable idea." D.E. 397-15, 234:17-235-9. Furthermore, the post-audit that Mr. Davis and Dr. Jones performed confirmed that the Tarawa Terrace model overpredicts compared to available data, and Dr. Konikow testified that a post-audit cannot validate the results of ATSDR's water models. D.E. 421; D.E. 369-8, p. 262:5-9. When the water models' results are compared to the limited data available in the early 1980s, the results are greatly divergent even then.

Peer Review of Methodology. While PLG makes much of the fact that the ATSDR models have had some level of peer review, the models have not been peer reviewed at all for the purpose for which PLG seeks to use the models in this litigation – to determine exposure levels for individuals. Mr. Maslia and his colleagues have only published and presented on their efforts to develop water models for determining relative exposure levels for purposes of epidemiological studies and public health assessments. *See, e.g.,* D.E. 397-18; D.E. 397-19; D.E. 397-21; D.E.397-22. To the extent any peer review of ATSDR's water models has taken place, it was done with the understanding that ATSDR's water models would be used for that limited purpose.

General Acceptance of Methodology Within the Relevant Scientific Community & Consistency with Industry Standards. PLG fails to show any general acceptance within the relevant scientific community or the existence of consistent industry standards related to use of environmental models for determining exposure levels for individuals. Environmental models and modeling software platforms are used most commonly for environmental policy planning, management, and remediation purposes. *See*, *e.g.*, D.E. 370-2, p. 20-1 ("Effective management of groundwater requires the ability to predict subsurface flow and transport of solutes… ."); D.E. 372-9, 35:8-46:11 (testimony from Mr. Maslia describing his experience using environmental models in policy planning, management, and remediation efforts).

III. Lack of Available Historical Data Does Not Permit PLG to Misuse ATSDR's Water Models to Determine Exposure Levels for Individual Plaintiffs in This Litigation.

In a tacit acknowledgment that ATSDR had insufficient data to reliably determine historic exposure levels for individuals, PLG argues that "the Government apparently destroyed evidence that it had on water contamination at Camp Lejeune, including daily well logbooks and water treatment plant logs." D.E. 397, p. 37. PLG offers no evidence to support a claim of intentional destruction. PLG's own expert, Dr. Konikow, testified that "it is rare that over a historical period you would have very precise records of pumpage." D.E. 397, p. 38 n. 49 (quoting D.E. 369-8, 276:2-11). Even if it were true that certain relevant information no longer exists, that does not excuse PLG from its burden of proving that ASTDR's water models are scientifically reliable for the purpose of determining exposures for individual plaintiffs.

Even with a complete record of daily well logbooks and water treatment plant logs, PLG and PLG's Phase I experts would still lack the pre-1982 contaminant sampling data because there was no requirement to test for such contaminants before 1982. Having such information would also not change the fact that as a public health agency, ATSDR developed its water models using conservative, health protective assumptions and data-interpretation methods, making them irrelevant and scientifically unreliable for determining exposure levels for individual plaintiffs. None of the cases that PLG cites supports extrapolating 30 years into the past to estimate contaminant concentration for exposure determinations for individual plaintiffs in a toxic tort case where sampling data does not exist.

Dated: July 3, 2025

Respectfully submitted,

BRETT A. SHUMATE
Assistant Attorney General
Civil Division

JONATHAN GUYNN
Deputy Assistant Attorney General
Civil Division

J. PATRICK GLYNN
Director
Environmental Torts Litigation Section

BRIDGET BAILEY LIPSCOMB
Chief, Camp Lejeune Unit

ADAM BAIN
Special Litigation Counsel

ALLISON O'LEARY
GIOVANNI ANTONUCCI
ALANNA HORAN
KAILEY SILVERSTEIN
Trial Attorneys

/s/ Haroon Anwar
HAROON ANWAR
Acting Assistant Director
United States Department of Justice
Civil Division, Torts Branch
Environmental Torts Litigation
1100 L Street, NW
Washington, DC 20005
(202) 305-2661
Fax (202) 616-4473
Haroon.Anwar@usdoj.gov

Attorney inquiries to DOJ regarding CLJA:
(202) 353-4426

Attorneys for Defendant,
United States of America

CERTIFICATE OF SERVICE

I hereby certify that on July 3, 2025, I electronically filed the foregoing using the Court's Electronic Case Filing system, which will send notice to all counsel of record.

/s/ Haroon Anwar
HAROON ANWAR