ORAL ARGUMENT NOT YET SCHEDULED

Case No.: 22-1089

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

VINYL INSTITUTE INC.,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Respondent.

Petition for Review of EPA TSCA Test Order
EPA-HQ-OPPT-2018-0421

PETITIONER VINYL INSTITUTE INC.'s REPLY BRIEF

Eric P. Gotting
Peter L. de la Cruz
Gregory A. Clark
Keller and Heckman LLP
1001 G Street, N.W.
Suite 500 West
Washington, D.C. 20001
Phone: (202) 434-4100
Facsimile: (202) 434-4646
Email: gotting@khlaw.com
Email: delacruz@khlaw.com
Email: clarkg@khlaw.com
Counsel for Petitioner

Dated: April 21, 2023

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), Petitioner Vinyl Institute, through its undersigned counsel, submits this Certificate as to Parties, Rulings, and Related Cases.

I. Parties, Intervenors, and Amici

A. Petitioners

Vinyl Institute Inc.

B. Respondents

U.S. Environmental Protection Agency

C. Intervenors and Amici

American Chemistry Counsel
Physicians Committee for Responsible Medicine
People for the Ethical Treatment of Animals
Environmental Defense Fund
National Wildlife Federation

II. Rulings Under Review

EPA, *Order Under Section 4(a)(2) of the Toxic Substances Control Act*, Docket ID No: EPA-HQ-OPPT-2018-0421 (amended version dated August 5, 2022) (JA___-___).

III. Related Cases

None

/s/ *Eric P. Gotting*

CORPORATE DISCLOSURE STATEMENT

Pursuant to Fed. R. App. P. 26.1 and Circuit Rule 26.1, Petitioner Vinyl Institute hereby submits this Corporate Disclosure Statement. The Vinyl Institute is a trade association representing the leading manufacturers of vinyl, vinyl chloride monomer, and vinyl additives and modifiers. Relevant to this case, the Vinyl Institute manages a consortium of companies that is subject to the challenged Test Order. The Vinyl Institute does not have any parent corporation or publicly held corporation that owns 10 percent of more of its stock.

/s/ *Eric P. Gotting*

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Cases

Statutes

Regulations

Other Authorities

GLOSSARY

APA	Administrative Procedure Act
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
TSCA	Toxic Substances Control Act
USGS	United States Geological Survey

SUMMARY OF ARGUMENT

When issuing a test order, the U.S. Environmental Protection Agency ("EPA") must comply with various obligations set forth in the Toxic Substances Control Act ("TSCA"). EPA must be transparent; it cannot speak in conclusory terms. EPA must rule-out less burdensome testing options; it cannot short-cut that analysis. EPA must cite substantial evidence in the record; it cannot require others to guess at EPA's rationale. EPA must articulate its reasoning in the test order; it cannot first explain itself in litigation. Most importantly, EPA must demonstrate the test order is "necessary," not merely argue a certain type of data is missing. True, Congress gave EPA test order authority as an efficient way to obtain data, but not authority to issue orders at will. Congress imposed meaningful checks on EPA to ensure such authority is used in a judicious and reasonably prudent manner.

1. EPA mischaracterizes the standard of review. TSCA's substantial evidence standard is less deferential than the Administrative Procedure Act's ("APA") arbitrary and capricious standard. TSCA requires a test order to identify substantial evidence, weigh supporting and conflicting data, and detail its reasoning.

Conclusory statements and *post hoc* rationalizations are not sufficient. This Court must hold EPA to that standard.

2. EPA cannot rely solely on a review of scientific literature and chemical analogues to exclude screening level tests. It must consider alternative testing methods themselves, weigh their advantages and disadvantages, and explain in the order why those were considered insufficient. The Test Order's conclusory statements do not constitute substantial evidence.

3. Similarly, EPA must provide more than a sentence to justify vertebrate testing. It must point to the non-animal testing alternatives it considered, weigh their merits and shortcomings, and explain why they were deemed unacceptable. Counsel's *post hoc* statements and record citations fall short of substantial evidence.

4. EPA exaggerates the Vinyl Institute's reading of TSCA. We agree EPA need not demonstrate an unreasonable risk to show a data need. But EPA must consider exposure data and explain, particularly when relying on its own data showing *de minimis* or non-detect exposures, why the Test Order was necessary. We also agree EPA does not need to identify and discuss every study it reviewed, regardless of

relevancy. But EPA must consider available information, "weigh" competing lines of evidence (a duty EPA curiously never mentions in the opposition brief), and explain in some detail why information was discounted. For all required showings – involving tiered testing, vertebrate testing, exposure data, and test order necessity – EPA must offer more than conclusory statements or *post hoc* argument.

5. TSCA explicitly permits the Vinyl Institute to submit additional evidence and comment to the record when a test order is issued. EPA overstates Section 19(b)'s "materiality" standard; TSCA's plain language allows the Vinyl Institute to submit relevant and probative information that could alter EPA's decision. Option 2 did not present that opportunity.

ARGUMENT

I. EPA Mischaracterizes The Standard Of Review

In its opposition, EPA attempts to recast the applicable standard of review as being significantly more deferential than intended by Congress. Both the plain language of the statute, as well as applicable case law, require this Court to review the Test Order with a critical eye and demand more than EPA did here.

To begin, EPA argues TSCA's substantial evidence standard is "one and the same" as the APA's highly deferential arbitrary and capricious standard. Opp'n at 16; *see* 5 U.S.C. §706(2)(A). This is directly contrary, however, to long-standing case law specifically distinguishing between the two standards of review.

As this Court first explained in *Envtl. Def. Fund v. EPA*, 636 F.2d 1267, 1277 (D.C. Cir. 1980) ("*EDF*"), TSCA's substantial evidence standard "is generally considered to be more rigorous than the arbitrary and capricious standard…" In *Chem. Mfrs. Ass'n v. EPA*, 859 F.2d 977, 991-92 (D.C. Cir. 1988) ("*CMA*"), this Court cited to TSCA's legislative history in concluding Congress "perceived some difference between the standard it chose for TSCA and the APA's arbitrary-and-capricious standard," and intended review under TSCA "to be more searching than the judicial review undertaken in most agency cases." This is consistent with other circuits viewing the standards differently, including in Section 4 cases. *See Labor Council for Latin Am. Advancement v. EPA*, 12 F.4th 234, 245 n.1 (2d Cir. 2021) ("*Labor Council*"); *Ausimont U.S.A. Inc. v. EPA*, 838 F.2d 93, 96 (3d Cir. 1988); *Shell Chem. Co. v. EPA*, 826 F.2d 295, 297 (5th Cir. 1987) ("*Shell*").

Not surprisingly, TSCA's substantial evidence standard has been variously described as imposing a more demanding standard of review than APA's deferential arbitrary and capricious approach. *See EDF*, 636 F.2d at 1277 ("a reviewing court must give careful scrutiny to agency findings…"); *CMA*, 859 F.2d at 992 (TSCA's standard of review "is a particularly 'demanding one'" and "fairly rigorous"); *Labor Council*, 12 F.4th at 245 n.1 (Congress intended courts to "scrutinize" EPA's actions "more closely" than required under the arbitrary and capricious standard); *Shell*, 826 F.2d at 297 (TSCA's test is "less deferential" than the APA's arbitrary and capricious standard); *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1214-15 (5th Cir. 1991) ("*Corrosion Proof Fittings*") (same).

Moreover, contrary to the opposition, Congress intended TSCA's substantial evidence standard to be even more stringent than its counterpart under the APA. Opp'n at 16. For example, EPA cites to a decision applying the APA's version of the "substantial evidence" standard as requiring "something less than the weight of the evidence." *Id.*; *see* 5 U.S.C. §706(2)(E). However, as this Court noted in *CMA*, TSCA's substantial evidence standard "works in tandem" with the

statute's substantive requirements. *CMA*, 859 F.2d at 992; *see Shell*, 826 F.2d at 297 (noting "interplay between the statutory language of risk and the substantial evidence test…"). In TSCA's 2016 amendments, Congress specifically required EPA for the first time to "make decisions" when issuing a test order "based on the weight of the scientific evidence." 15 U.S.C. §2625(i); *see* 15 U.S.C. §2618(c)(1)(B)(i)(II) (stating APA's version of the substantial evidence standard does not apply to test orders); *Labor Council*, 12 F.4th at 245 (citing *CMA* and distinguishing between APA's and TSCA's substantial evidence standards). Accordingly, this Court in reviewing the Test Order must now ensure EPA applied a weight of the evidence approach to all available lines of evidence. Pet'r Br. at 6-7.[1]

Astonishingly, EPA also claims in the opposition that it does not need to cite any substantial evidence in the Statement of Need. Opp'n at 35 ("TSCA does not require that EPA cite substantial evidence in the Test Order itself…Thus, the Court should not read into the statute a

[1] As discussed below, EPA never even mentions the "weight of the evidence" requirement in its opposition, which was part of TSCA's 2016 amendments, let alone acknowledges the significant role it plays in deciding whether a test order is "necessary." 15 U.S.C. §2603(a)(2)(A).

requirement that the Test Order's Statement of Need cite…the administrative record…"). This Court, as well as others, have made clear that EPA, under TSCA's substantial evidence standard, must do more than offer conclusory statements; rather, it must identify the record evidence supporting its decision and explain its underlying rationale. In *EDF*, this Court stated EPA must:

> ensure public accountability by requiring the agency to *identify* relevant factual evidence, to *explain* the logic and the policies underlying any legislative choice, to *state candidly* any assumptions on which it relies, and to *present* its reasons for rejecting significant contrary evidence.

636 F.2d at 1278 (citation omitted) (emphasis added); *see CMA*, 859 F.2d at 986, 992 (EPA is "required to identify the facts that underlie its determination…" and must offer "adequate reasons and explanations for [its] conclusions"); *Corrosion Proof Fittings*, 947 F.2d at 1214 (EPA must "cogently explain why it has exercised its discretion in a given manner" and "must offer a rational connection between the facts found and the choice made") (citations omitted).[2]

[2] This also holds true where EPA purportedly fills evidentiary gaps based on experience or expertise. Opp'n at 16-17 (EPA claiming it issued the Test Order based in part on policy choices); *see EDF*, 636 F.2d at 1278; *Chem. Mfrs. Ass'n v. EPA*, 899 F.2d 344, 359 (5th Cir. 1990) ("*CMA II*") (when an agency "is obliged to make policy judgments

Indeed, the plain language of Section 4 requires as much. Nowhere in the opposition does EPA reconcile its position with the required elements of a Statement of Need – *i.e.*, EPA must (i) "*identify* the need for the new information"; (ii) "*describe* how information reasonably available to [EPA] was used to inform the decision to require new information"; (iii) "*explain* the basis for any decision that requires the use of vertebrate animals"; and (iv) "*explain* why issuance of an order is warranted instead of promulgating a rule or entering into a consent agreement." 15 U.S.C. §2603(a)(3) (emphasis added). Surely, cursory statements alone fall well short of satisfying these obligations. Yet EPA's opposition completely ignores all of this and would have this Court instead read these commands completely out of the statute.

Finally, as discussed below, the opposition attempts to rewrite the Test Order and, in doing so, engages in extensive and improper *post hoc* rationalization. A fundamental rule of administrative law is that a

---

where no factual certainties exist or where facts alone do not provide the answer, [the agency] shall so state and go on to identify the considerations [it] found persuasive") (citation omitted); *Corrosion Proof Fittings*, 947 F.2d at 1227 ("unarticulated reliance on [EPA] 'experience' may satisfy an 'arbitrary and capricious' standard of review, but it does not add one jot to the record evidence") (citation omitted).

court "must judge the propriety of [agency action] solely on the grounds invoked by the agency." *SEC v. Chenery Corp.*, 332 U.S. 194, 196 (1947) ("*Chenery II*"). The agency's "basis must be set forth with clarity as to be understandable." *Id.* Courts "cannot exercise their duty of review unless they are advised of the considerations underlying the action under review." *SEC v. Chenery Corp.*, 318 U.S. 80, 94 (1943) ("*Chenery I*"); *see CMA II*, 899 F.2d at 359 (an "agency must articulate its findings and the reasons for its policy choices, so the court may ascertain whether it engaged in balanced, informed decision-making") (citation omitted). If an agency has not done so, the court cannot "substitute[] what it considers to be a more adequate or proper basis." *Chenery II*, 332 U.S. at 196; *see CMA*, 859 F.2d at 992 (same).

These principles apply where an agency has only offered conclusory statements and attempts through litigation counsel to support those statements with additional argument and citations to the record not appearing in the decisional document itself. For example, in *Algonquin Gas Transmission Co. v. FERC*, 948 F.2d 1305, 1307-08 (D.C. Cir. 1991), the Federal Energy Regulatory Commission ("FERC") unilaterally amended a settlement agreement between a natural gas

pipeline and its customers. FERC issued an order modifying certain rates in the agreement. *Id.* In cursory fashion, FERC justified one such amendment by simply stating the gas company had not offered similar rates to customers in the past and concluded they were "unduly discriminatory" under the Natural Gas Act. *Id.* at 1315. Although the order was reviewed under a "substantial evidence in the record" standard, *id.* at 1311, this Court rejected FERC counsel's attempt during the litigation to, for the first time, point to record evidence purportedly supporting the ruling. *Id.* at 1316 (citing *Chenery II*).[3]

In short, the "rigorous" and "demanding" substantial evidence standard set forth in TSCA and relevant case law does not resemble the more deferential standard touted by the opposition. This Court must apply the standard as enacted by Congress, not as redefined by EPA for purposes of saving the Test Order.

[3] In any event, as we demonstrate below, the additional record evidence cited by EPA in the opposition does not constitute substantial evidence justifying the Test Order.

II. EPA Cannot Rely Solely On Literature And Analogue Reviews To Satisfy The Tiered Testing Requirement; EPA Must Also Consider Testing Alternatives

The opposition argues EPA satisfied Section 4(a)(4) by employing a tiered process consisting of its literature review and consideration of studies associated with analogues. Opp'n at 22. The plain language of Section 4(a)(4) does not allow EPA to stop there. It also must evaluate screening-level or alternative test methods to determine whether those could help fill the data need. Specifically, Section 4(a)(4) allows EPA to rely solely on a review of available information where:

> [such information] justifies more advanced testing of potential…environmental effects or potential exposure *without first conducting screening level testing.*

(emphasis added).

The final clause is key to understanding EPA's obligations here. Congress did not merely provide EPA with an option of avoiding screening level testing by virtue of a literature and analogue review. EPA must also evaluate alternative screening level tests. While available information may support advanced testing, it must also justify skipping alternative testing methods. Indeed, if such screening level testing could help fill the purported data gap, then the mere absence of

chronic avian studies would not be determinative and more advanced testing would not be "necessary" as required by TSCA. 15 U.S.C. §2603(a)(2). If Congress had intended to adopt EPA's truncated approach, it would have left out the phrase "without first conducting screening level testing." But it did not.[4]

The problem with the Statement of Need, which the opposition completely ignores, is EPA only addressed the screening level testing issue in a single, conclusory sentence ("Reasonably available data, computational toxicology, or high-throughput screening methods and prediction models are not available and/or cannot be used to address avian reproduction testing required by this Order"). Test Order at 8 (JA___); Pet'r Br. at 30-32. As the opening brief demonstrates, this does not constitute an adequate Statement of Need or comply with the substantial evidence standard. Nowhere does the Test Order cite any

[4] The opposition places undue weight on the "or" appearing in Section 4(a)(4)'s phrase "under which the results of screening-level tests *or assessments of available information* inform the decision as to whether 1 or more additional tests are necessary…" Opp'n at 20 (emphasis in original). In doing so, EPA says Section 4(a)(4) gives it a choice – *i.e.*, it needs to only do an assessment of existing studies and nothing more. But as explained here, that mischaracterizes this provision. EPA must also evaluate alternative tests.

supporting record evidence, identify what screening level tests were considered, or explain why they were excluded. Pet'r Br. at 31. The Vinyl Institute and this Court are left completely in the dark.[5]

Finally, the opposition misreads TSCA's directive regarding EPA's consideration of test order compliance costs. 15 U.S.C. §2603(b)(1). The opposition claims this information need not be included in the Test Order. Opp'n at 22. Yet TSCA requires its inclusion. Section 4(b)(1) explicitly states the "order…shall include" the testing protocols and methodologies, which, in turn, "include the relative costs" of such testing. Whether this information is reported in the Statement of Need or not, it must be disclosed in the Test Order itself, consistent with Section 4 and the substantial evidence standard.[6] Pet'r Br. at 31-32.

---

[5] The opposition also mischaracterizes the Vinyl Institute's opening brief. EPA maintains, without citation, the Vinyl Institute interprets TSCA as "requir[ing] EPA to order screening level tests before ordering additional tests." Opp'n at 20. Not so. The Vinyl Institute never said this and instead only alleged EPA did not adequately address its decision to forego such testing. Pet'r Br. at 31.

[6] EPA also does not dispute that neither the Test Order nor the record indicate it considered, as required by Section 4(b)(1), the availability of labs and personnel needed to carry-out the Test Order. Pet'r Br. at n.14.

III. EPA Employs *Post Hoc* Rationalization And Fails To Cite Substantial Evidence Supporting Vertebrate Testing

The opposition concedes, under Section 4(a)(3), 15 U.S.C. §2603(a)(3), the Statement of Need must "explain [EPA's] basis" to require vertebrate testing rather than relying on, as directed by Section 4(h), new approach methodologies ("NAMs"). Opp'n at 22. Nevertheless, the opposition then maintains the Statement of Need satisfies this obligation in a single sentence claiming EPA did not locate any viable alternative methodologies. Opp'n at 23. EPA argues it should not have to conduct a "wild goose chase" requiring EPA to consider "any methodology, no matter how irrelevant or inappropriate, and document why each chase produced nothing of value." *Id.*

That is not what the Vinyl Institute urged in its opening brief. Pet'r Br. at 33. Rather, Section 4(h) directs EPA to consider "as appropriate and scientifically justified, reasonably available existing information" regarding such methodologies. This means EPA likely needs to only consider a limited list of potential alternatives and, as such, falls well short of the opposition's "sky is falling" scenario. That said, Section 4(a)(3) and the substantial evidence standard demand something more than a conclusory statement. Neither this Court nor

the Vinyl Institute can possibly understand EPA's "basis" if, as discussed in the opening brief, the Test Order does not identify the methodologies considered or explain on some level why they were deemed unviable.

In an attempt to save the Test Order, the opposition next engages in improper *post hoc* rationalization. EPA cites to a record spreadsheet it argues lists the alternative methodologies considered and indicates they do not provide useful information. *Id.* at 24. EPA counsel then offers explanations as to why certain methodologies might have been excluded. *Id.* at 25-26. Not only was this spreadsheet never cited in the Test Order, it does not do what EPA claims. The spreadsheet lacks many of counsel's explanations.[7] Such musings are prohibited under *Chenery I* and *II*, and represent an improper attempt to bolster the Test

[7] For instance, the spreadsheet indicates EPISuite estimates physical/chemical properties and *environmental fate* – e.g., bioconcentration/bioaccumulation, (JA___) (emphasis added), matters obviously relevant to the risk evaluation. But counsel then concludes this does not directly predict avian toxicity. Opp'n at 26. This reasoning does not appear in the spreadsheet. Similarly, the spreadsheet says the ChemACE software is a tool to facilitate structural clustering (which is a form of grouping similar chemicals to analyze hazard via read-across). (JA___). Counsel then states ChemACE was not helpful in the data gap analysis because it is not designed to identify "analogues." Opp'n at 25-26. Again, that explanation does not appear in the spreadsheet.

Order's conclusory statements. Moreover, this Court may not fill-in the gaps left by EPA. That is for EPA to do on remand. In the meantime, this Court and the Vinyl Institute must instead guess why EPA rejected a methodology, if it did at all.

In any event, the spreadsheet does not constitute substantial evidence justifying the Test Order. For example, as to the ChemACE and EPISuite methods, the spreadsheet does not explain why these cannot be used to help inform avian toxicity (*e.g.*, EPISuite addresses EPA's concerns about environmental hazard). EPA seems to think an alternative method must *directly* address avian toxicity. Opp'n at 26. But nothing in Section 4 requires this and, in fact, the whole point of alternative testing is to use less burdensome, indirect methods to arrive at the same conclusion.

Moreover, the opposition claims a blank cell in the spreadsheet for a given methodology means EPA did not find relevant information. Opp'n at 24. That is not evident from the spreadsheet. For instance, we know EPA relied heavily on the AIM software to identify 1,1,2-trichloroethane analogues, Test Order at 7 (JA___), yet the relevant cell

for AIM is blank. (JA___). Thus, this Court and the Vinyl Institute cannot deduce from the spreadsheet what EPA did or did not do.

Finally, EPA improperly relies for support on two documents that are not cited in the Test Order or the administrative record. The opposition argues EPA considered alternative methodologies that are consistent with a list of alternatives compiled by EPA ("NAMs List") which, in turn, is purportedly based on the same types of considerations identified in Section 4(h) (*e.g.*, bioinformatics). EPA then claims most of the alternatives in the NAMs List are designed to address human health hazards, not environmental hazards. Opp'n at 25. The agency next leans on another document, EPA's strategic plan to develop alternative methodologies ("NAMs Strategic Plan"), for the proposition that "few NAMs exist that reliably predict complex endpoints." Opp'n at 26-27. Again, this rationale does not appear in the Test Order or record.

This is merely EPA counsel rewriting the Statement of Need and buttressing the record after-the-fact. This is not permitted. *Williams v. Robinson*, 432 F.2d 637, 642 (D.C. Cir. 1970) (citing *Chenery I* and stating an "agency may not support its decision by reference to facts

outside the administrative record or a course of reasoning disclosed for the first time in judicial proceedings").

IV. EPA Relies On *Post Hoc* Rationalization And Fails To Cite Substantial Evidence Showing A Data Need

The Test Order provides almost no information or analysis on existing studies EPA assessed through a scientific literature review of 1,1,2-trichloroethane and chemical analogues. Pet'r Br. at 33-34. It generally describes EPA's process and discusses just one study EPA evaluated. The opposition argues, in yet another fit of hyperbole, that TSCA does not require EPA to "provide a comprehensive list of all search results from electronic databases and every book opened in a technical library, regardless of relevance…Requiring EPA to identify and analyze in the statement of need every study…that does *not* provide useful information would be burdensome and time consuming." Opp'n at 28-29 (emphasis in original).

TSCA obviously does not require such a detailed statement (and the Vinyl Institute never claimed it did), but TSCA demands more than what EPA did here. As noted, the substantial evidence standard and TSCA's substantive requirements operate together. For instance, the opposition never mentions one of EPA's most significant obligations

when evaluating data needs – its decision must be "based on the weight of the scientific evidence." 15 U.S.C. §2625(i); Pet'r Br. at 6-7 (citing EPA's "weight of scientific evidence" definition at 40 C.F.R. §702.33 requiring "transparen[cy]" in evaluating each stream of evidence); *see* H.R. Rep. 114-176 (2015), 2015 WL 3914835, at *295 (discussing new Section 26(i), defining "weight of evidence" as "*transparently* …identify[ing] and evaluat[ing] each stream of evidence, *including strengths, limitations, and relevance of each study*," and stating the "Committee expects that when EPA makes a weight of the evidence decision it will *fully describe* its use and methods") (emphasis added).

When coupled with EPA's duties under Section 4 and the substantial evidence standard to both cite relevant evidence and to offer adequate reasons and explanations for its conclusions and policy choices, EPA, at minimum, had to identify key, potentially relevant studies it evaluated and explain why certain lines of research were rejected under a weight of evidence approach. Pet'r Br. at 34-35. The same holds true for EPA's consideration of alternative testing methods ("NAMs"). This is required to both facilitate meaningful judicial review during which this Court must determine whether EPA complied with

its test order authority, as well as help stakeholders identify any key studies or analysis that may have been overlooked. Otherwise, the Statement of Need is nothing more than an "EPA says so." That is not sufficient. *Algonquin*, 948 F.2d at 1313 ("unsupported assertion does not amount to substantial evidence").

For example, the Statement of Need fails to identify each study marked as an "x" in Table 1 and state why each was ruled-out aside from saying they did not address avian chronic toxicity. Test Order at 7-8 (JA___); Pet'r Br. at 34. In another instance of *post hoc* rationalization, counsel points to a spreadsheet not cited in the Test Order and which EPA says lists the studies. Opp'n at 30. While it is not clear how the spreadsheet corresponds directly to Table 1, it does not constitute substantial evidence. Neither the Statement of Need nor the spreadsheet explain why these studies could not be used in a tiered approach or to minimize vertebrate testing. For instance, one acute toxicity study for 1,1,1-trichloroethane involved pheasants. (JA___). Whether and how EPA decided this avian study could not be employed in a read-across effort to better understand chronic effects of 1,1,2-trichloroethane, we may never know. Pet'r Br. at 34.

The burden on EPA under Section 4 was not merely to show a study concerns something other than chronic toxicity; rather, the pertinent question is if the study, even one addressing acute exposures, can help fill the data gap without requiring more advanced testing.

V. EPA Must Address Key Data Regarding Exposures

When amending TSCA, Congress recognized a test order may be unwarranted based on reasonably available information regarding environmental exposure levels. 15 U.S.C. §2625(k) (EPA "shall take into consideration…exposure information"). For instance, what if existing data suggest birds are rarely exposed (*i.e.*, there are no chronic exposures)? That information would certainly be relevant to whether a test order focused on chronic toxicity is "necessary" at all, let alone in lieu of tiered testing. 15 U.S.C. §2603(a)(2); Pet'r Br. at 36.

The Test Order's failing here is that, in one sentence, EPA generally cites a U.S. Geological Survey ("USGS") database showing 1,1,2-tricholorethane has been detected in environmental media to which EPA claims birds might be exposed. Test Order at 9 (JA___). EPA did not identify in the Test Order or the record which data it relies on and, in particular, what detection rates and concentrations it deemed

relevant. Pet'r Br. at 36. The USGS database includes 2.6 million monitoring locations.[8] This leaves the Court and the Vinyl Institute unable to verify whether EPA actually considered evidence relevant to the necessity of the Test Order.

In fact, a review of the USGS database cited by EPA shows detection frequencies are *de minimis* or non-detect. Pet'r. Br. at 51-52. Despite EPA's obligation to weigh this readily available evidence (15 U.S.C. §2625(i)), it never acknowledged these facts or discussed why, despite these data, advanced testing is still needed. Under TSCA's test order authority, EPA was required to say more.

In response, the opposition cites to *CMA* for the proposition that the Test Order's one-sentence justification was sufficient because under Section 4(a)(1), 15 U.S.C. §2603(a)(1), EPA only needs to demonstrate a "more-than-theoretical basis for suspecting that some amount of exposure occurs." Opp'n at 31-32. EPA misreads *CMA*, which actually confirms the Test Order's deficiencies. Even under *CMA's* "more-than-theoretical" standard, EPA still had to "identify…facts" and present

[8] *See* U.S. Geological Survey, National Water Quality Monitoring Council, "WQP FAQs," *available at:* https://www.waterqualitydata.us/faqs/ (accessed Apr. 19, 2023).

"adequate reasons and explanations" for its decision (*i.e.*, substantial evidence). 859 F.2d at 986, 992. Indeed, in that case, this Court examined in great detail the extensive evidence and discussion offered by EPA that not only supported the test rule, but also evaluated information weighing against it. *Id.* at 992-96.

Nothing about the Test Order's single sentence remotely approximates EPA's justification in *CMA*. Moreover, even assuming *arguendo* that less discussion is required for a Statement of Need supporting a test order, EPA cites nothing indicating that mere conclusory statements pass muster. For instance, after *CMA* was issued (in which EPA had only a binary choice – *i.e.*, issue a test rule or not), Congress amended Section 4 to include a middle ground where data suggesting relatively low exposures might warrant a step-wise approach – *i.e.*, tiered testing – before deciding whether more advanced testing is warranted. Under Section 4 and the substantial evidence standard, EPA had to at least explain why the USGS data favor advanced tests over screening level testing. 15 U.S.C. §2603(a)(4). It did not.[9]

[9] The Vinyl Institute is not demanding an "a priori showing" of toxicity. Opp'n at 31. It is simply asking this Court to ensure EPA identifies and weighs relevant facts and explains its finding of "necessity."

VI. EPA Did Not Adequately Explain Why It Relied On A Test Order As Opposed To A Consent Agreement

EPA did not comply with Section 4(a)(3) when it merely claimed the Test Order would allow it to obtain information "more quickly" than a consent agreement or rulemaking. Test Order at 8 (JA___). As the opposition points out, Congress had already found that test orders would be a faster option than rulemakings. Opp'n at 33. So when Section 4(a)(3) requires EPA to "*explain* why issuance of an order is warranted instead of promulgating a rule or entering into a consent agreement," Congress plainly intended for EPA to offer more than boilerplate – *i.e.*, EPA must state why an order is warranted under the particular circumstances of the case, not just that "it is quicker." Otherwise, this provision serves no purpose.

Indeed, Congress provided EPA three distinct options – a rule, a consent agreement, or an order. It did not, as EPA seems to argue, intend that test orders should always be used in lieu of the other two. There is a role for all three. Each tool offers advantages and disadvantages, and thus which one should be employed depends on case-by-case circumstances. For example, where it is clear a data need exists, then issue a test order. But where a data need is arguably

uncertain, then a consent agreement is more appropriate as that would allow stakeholders to share information and determine the most efficient approach. And if EPA needs input from a broader segment of the public or to trigger cost-sharing requirements applicable to all manufacturers and processors, 40 C.F.R. Part 791, then a rulemaking would be warranted. If Congress wanted EPA to rely solely on test orders, as EPA seems to be doing now, then it would have not added consent agreements and retained rulemakings in Section 4(a)(3).

This is particularly important in the instant case. Here, the opposition does not dispute EPA knew it would fall well short of meeting TSCA's June 2023 deadline for the 1,1,2-trichloroethane risk evaluation. Pet'r Br. at 37-38. EPA therefore had to explain why issuing a test order was necessary in the face of significant agency delay and instead of entering into a consent agreement that would not materially slow the evaluation. *Id.* In fact, a consent agreement might have been more efficient, as involving the 1,1,2-tricholoroethane consortium at the beginning could have helped avoid disputes and further delays. *Id.*[10]

[10] The opposition misrepresents the opening brief when it claims "Petitioner…based on [its] own interests" wants to return to the "pre-TSCA Amendments era" and require rulemaking. Opp'n at 33. The

VII. This Court Should Grant The Section 19(b) Motion

A. Option 2 Was Not Part Of The Proceeding And Cannot Otherwise Be Enforced

Contrary to the opposition, Option 2 was not an opportunity to submit additional information during the "proceeding" before EPA. 15 U.S.C. §2618(b). The opposition completely ignores the fact that the Test Order constituted final agency action and was immediately appealable when it was issued. Accordingly, the "proceeding" was complete at that point and thus subject to a Section 19(b) motion. Pet'r Br. at 55-56; *Darby v. Cisneros*, 509 U.S. 137, 141 (1993) (hearing officer decision is final agency action and appealable even though a party had the option to request reconsideration). The only fair reading of Section 19(b) is that it does not require submissions after-the-fact.

Moreover, the opposition is wrong to say the Supreme Court's decision in *Darby* and this Court's decision in *CSX* are inapplicable. Opp'n at 41-42. While technically the Vinyl Institute was not precluded from filing a petition for review, those cases and Section 19(b) concern the scope of issues available for judicial review. As a practical matter, a

---

Vinyl Institute never advocated this and instead focused solely on a reasonable consent agreement option. Pet'r Br. at 37-38.

litigant cannot obtain a substantive and meaningful review under the substantial evidence standard if this Court does not grant a Section 19(b) motion. If, as the opposition argues (Opp'n at 42), the only way for the Vinyl Institute to exercise its rights under Section 19(b) and correct the substantial deficiencies in the record is to first go through Option 2, then EPA has positioned it as an exhaustion requirement. But given that Option 2 is set forth in the Test Order and is not statutory or regulatory based, it cannot be enforced under *Darby*.

B. The Vinyl Institute Required Access To The Record

In arguing the Vinyl Institute did not require access to the administrative record to use Option 2, EPA mischaracterizes Option 2 itself. The opposition greatly oversimplifies things – and in the process ignores Section 4 and the substantial evidence standard – when it characterizes Option 2 as simply a process of elimination – *e.g.*, if the Test Order did not list "x" study or analogue then submit it. Opp'n at 43-45. But Option 2 is not limited to merely flagging missed studies or additional data; it also asks for any "other scientifically relevant information." Test Order at 3 (JA___). As Stantec noted in its rebuttal report detailing why the Vinyl Institute needed access to the record (a

report the opposition completely ignores), this also includes understanding how EPA reached its conclusions, interpreted available information, and otherwise determined the Test Order was "necessary." Pet'r Br. at 59-63; ADD037; ADD041-42.[11]

For example, the opposition states the Test Order identified acute studies for a 1,1,2-trichloroethane analogue and that if the Vinyl Institute believed those studies were relevant it could have provided an explanation. Opp'n at 43-44. No, it could not. As noted, the Test Order never identifies the studies. In fact, EPA's counsel had to cite a spreadsheet in the administrative record to purportedly rectify that shortcoming. Opp'n at 30; ADD037.[12]

Similarly, the opposition says EPA found no alternative testing methods that could be used to address avian chronic toxicity and that the Vinyl Institute could have indicated if it believed otherwise. Opp'n at 44. But under TSCA, EPA must explain (beyond a few conclusory

---

[11] EPA counsel argues the Vinyl Institute should have asked for the record. Opp'n at 42. But the Test Order never poses this as an option or indicates EPA would have agreed to this extra step.

[12] While the Test Order generally describes what EPA says was a systematic literature review (Opp'n at 44 n.14), the only study identified is the Elovaara study. Test Order at 9 (JA__).

sentences) how it located potentially relevant alternatives and why those were ruled-out, something the Test Order failed to do. The Vinyl Institute therefore could not critique EPA's underlying rationale or determine whether EPA was correct. In fact, EPA counsel had to point to yet another record spreadsheet not cited in the Statement of Need, and even to extra-record evidence, that allegedly describe EPA's analysis. Opp'n at 25-27; ADD040-41.

Further, the opposition argues the Vinyl Institute could have submitted its own analysis if it contends the Test Order's general reference to the USGS database fell short of demonstrating sufficient environmental exposures. Opp'n at 44. But it is EPA's burden of proof to identify relevant facts and set forth its reasoning in the first instance. Because the Test Order only spoke in cursory terms (a single sentence), the Vinyl Institute could not assess EPA's rationale or even identify the data points in question so it could ensure a complete record for judicial review. Test Order at 9 (JA___); ADD040.

Finally, without record access, Option 2 allows EPA to hide the ball and force manufacturers to recreate all of EPA's work and hope that this identifies any missing information or analysis. It is entirely

unreasonable to demand such a time-consuming, expensive, and wasteful guessing game to preserve any rights under Section 19(b). Pet'r Br. at 64.[13]

C. EPA Misstates The Test For "Materiality"

The opposition misreads Section 19(b) when arguing the Vinyl Institute must demonstrate the additional information is "material" because it "would" (instead of "could") compel EPA to withdraw or modify the Test Order. Opp'n at 46-47. This has no basis in Section 19(b)'s plain language.

Section 19(b) provides that EPA, after considering the additional submissions, "may" modify or set aside the order, or issue a new order. 15 U.S.C. §2618(b). But this means EPA can also retain the original order. Pet'r Br. at 41. If, as EPA argues, the Vinyl Institute had to prove EPA "would" change the Test Order, EPA would have no discretion to maintain the order as initially written. Moreover, EPA's interpretation would obligate the Court to weigh all evidence itself and decide whether

[13] The opposition conflates EPA's duty to show that testing is "necessary" and a manufacturer's duty to conduct testing properly ordered. Opp'n at 40. Option 2 improperly shifts EPA's duty to the manufacturers to show testing is "unnecessary." Pet'r Br. at 64.

the additional evidence warrants a new or modified order before resolving the Section 19(b) motion, which is contrary to Section 19(b); that provision, instead, places such decision in EPA's hands.

Indeed, this Circuit and others have held provisions similar to Section 19(b) do not pose such a high hurdle to showing materiality. *Conservation Law Found. v. FERC*, 216 F.3d 41, 49 n.11 (D.C. Cir. 2000) (even in the context of the "would" test cited by EPA, asking whether additional information "*could* alter" the agency's decision) (emphasis added); *Makonnen v. INS*, 44 F.3d 1378, 1386 (8th Cir. 1995) (equating materiality to relevancy and probative value); *Swinick v. NLRB*, 528 F.2d 796, 800-01 (3d Cir. 1975) (asking if evidence "may" corroborate prior testimony or supply missing evidence).[14]

D. The Vinyl Institute Satisfied The "Materiality" Requirement

Despite not disputing materiality in the Section 19(b) motion proceedings, the opposition now maintains the Stantec reports do not provide additional "material" evidence, relying on a newly submitted

[14] It is readily apparent from Stantec's reports that the additional evidence and comments are not cumulative or unreliable, and EPA provides no evidence to the contrary. Opp'n at 47.

EPA declaration for support. Opp'n at 47-51. However, as demonstrated by Stantec's response to the declaration (attached as ADD061-68), this Court should re-open the record so all "reasonably available" evidence is fairly considered. 15 U.S.C. §2625(k). Some key points:

- EPA never "weighs" or considers the significant benefits of EPA's own CompTox tool over AIM for identifying relevant analogues. ADD063-64.

- In conclusory fashion, EPA rejects a highly relevant analogue, hexachloroethane, identified using CompTox that has an important subchronic avain study indicating low 1,1,2-tricholorethane toxicity. ADD064-65.

- Regarding EPA's own Web-ICE tool, it fails to "weigh" or discuss extensive findings, including by EPA itself and the National Academy of Sciences, contradicting the declaration's conclusory statements, including as to validation. ADD065-66.

- EPA again ignores its obligations when it maintains acute toxicity data are irrelevant. Opp'n at 49. As noted, EPA must consider whether acute toxicity data can fill the unmet data need through read across.

- EPA incorrectly claims no computational models have been validated for avian toxicity and that it cannot validate a model without the Test Order data. Opp'n at 50; ADD067. TSCA also obligates EPA to continue validating computational models. 15 U.S.C. §2603(h).

Finally, EPA's declaration fails to address the fact that the USGS data show only *de minimis* or non-detect environmental exposures.

CONCLUSION

This Court should grant the petition, vacate and remand the Test Order for further proceedings, and grant the Section 19(b) motion.

Dated: April 21, 2023

/s/ *Eric P. Gotting*
Eric P. Gotting
Peter L. de la Cruz
Gregory A. Clark
Keller and Heckman LLP
1001 G Street, N.W.
Suite 500 West
Washington, D.C. 20001
Phone: (202) 434-4100
Facsimile: (202) 434-4646
Email: gotting@khlaw.com
Email: delacruz@khlaw.com
Email: clarkg@khlaw.com
Counsel for Petitioner

CERTIFICATE OF COMPLIANCE

This brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7) and Circuit Rule 32(e) because it contains 6,498 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f).

This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5)(A) because it has been prepared in a proportionally spaced typeface using Microsoft Word in Century Schoolbook (14-point).

/s/ *Eric P. Gotting*

CERTIFICATE OF SERVICE

I certify that, on April 21, 2023, I electronically filed the foregoing brief with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit through the CM/ECF system, which will serve all parties electronically.

/s/ *Eric P. Gotting*

Addendum

Stantec,
Review of Declaration
of Denise Keehner

Review of Declaration of Denise Keehner

ChemRisk

ADD061

Prepared for: Gregory A. Clark
Keller and Heckman LLP
1001 G Street NW, Suite 500 West
Washington, DC 20001

Date: April 21, 2023

Prepared by:

ChemRisk

Stantec ChemRisk
20 Stanwix Street; Suite 505
Pittsburgh, PA 15222

EPA recently filed "Respondent EPA's Initial Brief" (dated March 20, 2023; henceforth, "the Brief") addressing, among other things, reports by Stantec ChemRisk (henceforth Stantec) evaluating EPA's conclusions regarding the initiation of a test order for avian reproductive toxicity testing for 1,1,2-trichloroethane. In support of that brief, Denise Keehner submitted a "Declaration in Support of Respondent EPA's Initial Brief" (dated March 17, 2023; henceforth, "the Declaration") addressing the Stantec reports on their merit. Stantec was asked to review the technical arguments in this Declaration. This report summarizes our findings, addressing four specific limitations with these technical comments.

CompTox Chemicals Dashboard

1. In the Declaration (pp. 2-3), while it is acknowledged that "[t]here are many tools available for identifying potential analogues, including, but not limited to, CompTox and AIM", it is stated that "[t]he preferred EPA-approved NAM for identifying potential chemical analogues is the Analogue Identification Methodology (AIM) Tool." It is also noted that "OPPT chose to use AIM to identify analogues given the use and knowledge of the tool in OPPT programs" and that "[t]he AIM tool is specifically designed for the purpose of identifying potential analogues to a chemical of interest and is therefore an approved NAM." This rationale is provided to justify EPA's exclusion of other important analogue tools, including EPA's own CompTox Chemicals Dashboard, in identifying analogues for 1,1,2-trichloroethane. The statement and the supporting arguments in the Declaration have several limitations (see a-e below). Accordingly, Stantec continues to hold the position that EPA was required to evaluate additional available tools for analogue identification, such as CompTox Chemicals Dashboard.
    a. No specific details are provided in the Declaration, Brief, Test Order, or the associated Administrative Record on EPA's consideration of any other available tools for analogue identification that rendered the decision to select AIM over other options. The Declaration reviews the merits of AIM, without context comparing it to other available analogue identification tools, including CompTox Chemicals Dashboard. Notably, CompTox Chemicals Dashboard offers several significant advantages over AIM, including: (i) a more than 10-fold larger inventory of chemicals than AIM (>1,200,000 vs. 86,000), which offers an increased chance of identifying a greater number of potential analogues; and (ii) CompTox Chemicals Dashboard provides a 'Similarity' score (see below for more details) not provided by AIM, which permits a quantitative comparison of analogue similarity to the chemical of interest.
    b. The Declaration does not indicate that AIM is the only available method for analogue identification, but rather that it is "***an*** approved NAM." CompTox Chemicals Dashboard is listed in the table entitled 'Other Useful Information' in Appendix B of EPA's List of Alternative Test Methods and Strategies (NAMs List) cited in the Brief. Thus, EPA recognizes the value of CompTox Chemicals Dashboard.
    c. While commenting on the selection of AIM as the analogue identification tool, the agency minimizes the importance of CompTox Chemicals Dashboard – a useful resource developed by EPA. In the 'About' section of CompTox Chemicals Dashboard (https://www.epa.gov/chemical-research/comptox-chemicals-dashboard-about), EPA notes the following about the database:
        i. "The CompTox Chemicals Dashboard is a part of a suite of databases and web applications developed by the U.S. Environmental Protection Agency (EPA). These databases and apps support EPA's research efforts to develop and apply new approach methods (NAMs)."
        ii. "[The CompTox Chemicals Dashboard] is a widely used resource for chemistry, toxicity, and exposure information for over a million chemicals."

iii. "[T]he Dashboard provides information on similar chemicals and related substances, chemical lists, links out to other reputable resources, including Open Source widgets and tools such as PubChem widgets for Bioactivities, Articles, and Patents, and links to tools such as the Generalize Read-Across tool (GenRA), the web-version of the Toxicity Estimation Software Tool (WebTEST), and a web-version of the Abstract Sifter."

d. Further, a peer-reviewed publication by Williams et al. (2021; three of the four authors are affiliated with EPA) supports the utility of the CompTox Chemicals Dashboard. The authors state the following (in particular, the second bullet point below notes the opportunity for read-across [i.e., using data on a given property or endpoint for one or more analogues to predict the property or endpoint for the target chemical lacking this information]):
   i. "The Dashboard is increasingly becoming a valuable resource for assessors tasked with the evaluation of potential human health risks associated with chemical exposures. In this context, the significant amount of information present in the Dashboard facilitates: 1) assembly of information on physicochemical properties and environmental fate and transport and exposure parameters and metrics;…and 4) access to mechanistic information that can aid or augment the analysis of traditional toxicology evidence bases, or potentially, serve as the primary basis for informing hazard identification and dose-response when traditional bioassay data are lacking."
   ii. "Finally, in silico predictive tools developed to conduct structure-activity or read-across analyses are also available within the Dashboard."

e. There remains a question regarding the number of analogues identified by EPA. In the Declaration and the first Test Order, it is noted that six analogues for 1,1,2-trichloroethane were identified. However, in the second Test Order, which is the Test Order at issue in this case, seven analogues are specified. The seventh analogue is '1,1,1-trichloroethane', which does not appear on the list of analogues in the 'No. 16_eco data gathering_aim_output_080720' spreadsheet.

Hexachloroethane

2. In the Declaration (pp. 4-5), addressing Stantec's suggestion of including hexachloroethane amongst the considered analogues for 1,1,2-trichloroethane, it is stated that "[w]hile hexachloroethane may have been identified in the CompTox Chemicals Dashboard when Stantec developed its report, the physical chemistry properties of the chemical are not close enough to the physical chemistry properties of 1,1,2-TCE for it to be a suitable analogue." It is also noted that "[t]he two chemicals move through the environment in different ways, potentially creating different environmental exposure scenarios" and that "[b]ecause of these property differences, extrapolating 1,1,2-TCE's chronic effects from a subchronic study of hexachloroethane is not appropriate." This statement and the supporting arguments are flawed for several reasons:
   a. The statement itself conflates two concepts, hazard assessment (which relates to toxicological properties of a substance) and exposure assessment (which addresses how and to what extent a substance moves through the environment to receptors of interest). While analogue identification can support both hazard and exposure assessment, in this instance, EPA relied on analogue identification for the purposes of identifying hazards of the substance, ***not*** exposure. Thus, even if 1,1,2-trichloroethane and hexachloroethane move through the environment differently, this point is not relevant to whether existing toxicological studies or other hazard information for an analogue can be used to assess the potential hazard of 1,1,2-trichloroethane. The Declaration also does not indicate whether the alleged differences in environmental fate actually means that hexachloroethane is an inappropriate analogue (this is just assumed).

b. This statement is overly conclusory and does not provide specific information regarding either what "close enough" means, or what physical or chemical properties are crucial for this comparison. As summarized above, EPA's CompTox Chemicals Dashboard offers a similarity score. As explained by Williams et al. (2021), "[t]he similar compounds tab [of CompTox Chemicals Dashboard] represents the search results for a Tanimoto-based similarity search… and displays chemicals with a structural match factor above 0.8." The Tanimoto score ranges from 0 (no similarity) to 1 (identical). The similarity score for hexachloroethane is 0.82, indicating an acceptable degree of similarity to 1,1,2-trichloroethane. From reviewed materials, it does not appear that EPA performed a quantitative assessment (e.g., Tanimoto scores) to determine the extent of similarity of hexachloroethane (and other analogues) to 1,1,2-trichloroethane.
c. Available physical and chemical properties of 1,1,2-trichloroethane, hexachloroethane, and 1,1,1-trichloroethane (an analogue of 1,1,2-trichloroethane identified by EPA), as reported in EPA's CompTox Chemicals Dashboard, indicate that some physical chemical properties are more similar for hexachloroethane than they are for 1,1,1-trichloroethane, again leading one to question what is considered "close enough."
d. Furthermore, the relationship between physical and chemical properties and toxicity potential is not trivial. As reported in Figure 2 of the Stantec report, some mammalian toxicity testing of hexachloroethane indicates more similar toxicological properties to 1,1,2-trichloroethane than some testing of 1,1,1-trichloroethane, an analogue identified by EPA in the second Test Order. While Stantec acknowledges that physical and chemical properties of a substance can have an impact on hazard properties (particularly because of pharmaco/toxicokinetics), similarity of these properties alone is not sufficient to draw conclusions about similarity in toxicity. Therefore, suggesting exclusion of hexachloroethane as an analogue for consideration for 1,1,2-trichloroethane on the basis of undefined, insufficiently similar physical and chemical properties is unwarranted and inappropriate.

Web-ICE Tool

3. In the Declaration (pp. 5-6), addressing Stantec's suggestion that Web-ICE is a computational model EPA could have considered, it is stated that "Web-ICE is a tool developed by the EPA to estimate the acute toxicity of a chemical to a species, genus, or family from the known toxicity of the chemical to a surrogate species." It is noted that "the mammalian and avian models are not yet validated or used by EPA for regulatory decision making due to limited data underlying the ICE models" and that "the Web ICE terrestrial models have limited data underlying the models and data uncertainty is compounded when extrapolated from acute toxicity in mammals to acute toxicity in birds, then further extrapolated to chronic toxicity made under additional assumptions." This statement unjustifiably minimizes the value of Web-ICE and the recommendations made regarding its use. Based on these factors, we disagree that Web-ICE cannot be used as a tool to evaluate the weight of evidence around 1,1,2-trichloroethane toxicity in avian species, and would therefore be a useful tool for understanding potential data needs. Specifically:
    a. This statement contradicts EPA's own description of their tool and its utility in risk assessment as per the Web-ICE user manual. According to the user manual for Web-ICE (https://www3.epa.gov/webice/documents/WebICE_User_manual.pdf), "the Interspecies Correlation Estimations (ICE) application was developed by the U.S. Environmental Protection Agency (US EPA) and collaborators to extrapolate acute toxicity to taxa with little or no acute toxicity data for a chemical of interest, including threatened and endangered species." It is also stated that "Web-ICE was developed to support both chemical hazard assessment and ecological risk

assessment (ERA) by providing a method to estimate acute toxicity to specific taxa." Further, "[p]otential applications of acute toxicity values generated by Web-ICE include the problem formulation phase of an ERA to screen for contaminants of potential concern and in the analysis phase to characterize effects to a larger number of species."

b. According to Raimondo and Barron (2020; both authors are affiliated with EPA), the U.S. National Academy of Sciences, in its review of pesticide risk assessments for listed species, recommended the use of ICE models to estimate acute toxicity values for listed species in place of safety factors. Further, the authors note that "ICE models and the Web-ICE platform provide a powerful tool to generate and augment SSDs [i.e., species sensitivity distributions] using only limited toxicity data for aquatic and wildlife species, and ICE-based SSDs have been recommended for application in water quality criteria development as an alternative to generic safety factors for species extrapolation in international applications." The authors note that U.S. state environmental agencies use Web-ICE to screen toxicity profiles, industry uses it for ecological risk assessments, and universities include the use of Web-ICE in environmental studies courses.

c. The Declaration falsely suggests that the avian models are not validated. The user manual for Web-ICE describes the methods that were used to validate the model and notes good performance for wildlife modeling, which includes the avian species. Specifically, the user manual notes that "[t]he uncertainty of each model is assessed using leave-one-out cross-validation," a method in which "each pair of acute toxicity values for surrogate and predicted taxa are systematically removed from the original model" and "[t]he remaining data are used to rebuild a model and estimate the toxicity value of the removed predicted taxa toxicity value from the respective surrogate toxicity value." It is noted that this method "is only used for models developed using 4 or more data points" and that "[t]o maintain uniformity among the large number of models contained within Web-ICE, the 'N-fold' difference of each estimated and actual value is used to determine the accuracy of the estimated toxicity value." It is specified that "[f]or wildlife species, the average variability of toxicity measurements for a specific chemical and species is between 4.0 and 6.4-fold… Thus, a 5-fold difference is considered a good fit of predicted ICE values." Further, it is noted that "[i]n wildlife species, models predict within 5-fold and 10-fold of the actual value with 90 and 97% certainty for surrogate and predicted taxa within the same order." Therefore, Stantec ChemRisk chose to use Web-ICE to predict avian toxicity of 1,1,2-trichloroethane as noted in our Report.

d. Lastly, the Declaration neglects to acknowledge the conservative nature of the Web-ICE predictions when compared to empirical data, which further supports the use of Web-ICE predictions in risk assessment and potentially obviates the need for toxicity testing. The estimated LD_{50} for 1,1,2-trichloroethane in bobwhite quail was 58.89 mg/kg, which is approximately 43- and 9-fold lower than the empirical LD_{50}s for 1,1,1-trichloroethane in birds. As 1,1,1-trichloroethane was considered an acceptable analogue for 1,1,2-trichloroethane by EPA, this conservatism is particularly noteworthy and suggests that the apparent conservatism of Web-ICE makes it an appropriate tool for screening level risk assessment. In the case of 1,1,2-trichloroethane, such a risk assessment can be performed. Web-ICE can also be used to derive the HD_5s, which are lower than the estimated LD_{50}s (i.e., more conservative and thus more protective). As demonstrated in the Stantec report, exposure estimates for 1,1,2-trichloroethane from environmental media were far below the HD_5 for 1,1,2-trichloroethane.

Computational Models (QSAR)

4. In the Declaration (pp. 6-7), addressing Stantec's suggestion that computational models offer a resource not previously considered by EPA to predict avian toxicity of 1,1,2-trichloroethane, it is stated that the computational models listed in Table 7 in Exhibit B "have not been validated for use under TSCA" and that "[i]f a computational model has not been validated for use in TSCA regulatory risk assessment, then additional information is needed in order to validate that model." These statements recognize the existence of computational models for avian toxicity. Further, these statements contradict the statement made in the second Test Order that "[r]easonably available data, computational toxicology, or high throughput screening methods and prediction models are not available and/or cannot be used to address the avian reproduction testing required by this Order", since models do actually exist. As for validation of the proposed QSAR models, it is noted in the Brief (p. 50) that "none of the models identified by Stantec has been validated for use as a predictor of avian toxicity", which contrasts the above statement that the models were not validated "for use under TSCA." Notably, the models were validated by the authors to predict avian toxicity of pesticides and industrial chemicals. It is possible to verify whether the proposed computational methodologies can be applied to other chemicals, such as 1,1,2-trichloroethane and other chlorinated chemicals (e.g., 1,1,2-trichloroehtane analogues). EPA could have considered these models and/or taken steps to confirm their validity and applicability. By noting that "[t]he avian toxicity data that EPA is requiring under the test order for 1,1,2-TCE or similar data for similar chemicals would be necessary in order to validate the computational models" the Declaration assumes that models are not applicable to 1,1,2-trichloroethane without any indication that EPA considered the applicability domain (i.e., the types of chemicals that can be tested with a given model) of these models. Instead, EPA provided a conclusory statement in the second Test Order that no available computational toxicology methods or prediction tools are available without providing any discussion/analysis in the second Test Order or in the Administrative Record that EPA considered these models but deemed them inapplicable for use under TSCA.
    a. Despite claiming that EPA did not use any QSAR models, the Administrative Record indicates that EPA used the Organisation for Economic Co-operation and Development (OECD) QSAR Toolbox to identify analogues for 1,1,2-trichloroethane. The Administrative Record includes a file entitled 'No.10_Data matrix_112TCE and first pass analogs', which summarizes the analogues identified with OECD QSAR Toolbox. Notably, EPA's analogue evaluation using OECD QSAR Toolbox is not stated in the Test Order, nor the Brief or the Declaration.

The collective weight of evidence on analogue identification and hazard assessment tools available for evaluating 1,1,2-trichloroethane indicates that EPA took a very narrow view of the available resources for consideration, specifically excluding resources that they (and others) advocate for use (through their own user manuals and publications by EPA representatives). Even in light of the Declaration, the evidence and comments in our reports clearly indicate that the Test Order was not necessary.

References

EPA's List of Alternative Test Methods and Strategies (NAMs List). Available from: https://www.epa.gov/sites/default/files/2021-02/documents/nams_list_second_update_2-4-21_final.pdf.

Raimondo S, Barron MG. 2020. Application of Interspecies Correlation Estimation (ICE) models and QSAR in estimating species sensitivity to pesticides. SAR QSAR Environ Res. 31(1):1-18.

Test Order (1st). Order Under Section 4(a)(2) of the Toxic Substances Control Act for 1,1,2-Trichloroethane. Available from: https://www.epa.gov/sites/default/files/2021-01/documents/tsca_section_4a2_order_for_112- trichloroethane_on_ecotoxicity_and_occupational_exposure.pdf.

Test Order (2nd). Correction to Order Under (4)(a)(2) of the Toxic Substances Control Act. Available from: https://www.epa.gov/system/files/documents/2022-03/9544-01_testorder-112-tca_aa_signature.pdf.

Web-based Interspecies Correlation Estimation (Web-ICE) for Acute Toxicity: User Manual Version 3.1 Available from: https://www.epa.gov/sites/default/files/documents/WebICE_User_manual.pdf.

Williams AJ, Lambert JC, Thayer K, Dorne JCM. 2021. Sourcing data on chemical properties and hazard data from the US-EPA CompTox Chemicals Dashboard: A practical guide for human risk assessment. Environ Int. 154:106566.