IN THE SUPERIOR COURT OF PENNSYLVANIA

Nos. 865 EDA 2011, 866 EDA 2011, 867 EDA 2011

DARLENE NELSON, Executrix of the Estate of JAMES NELSON

Plaintiff,

v .

AIRCO WELDERS SUPPLY, ALLIED SIGNAL (A/K/A ALLIED CORP.), AMERICAN STANDARD, A.W. CHESTERTON, INC., BASIC, INC., BAYER CROPSCIENCE, INC., (F/K/A AVENTIS CROPSCIENCE, USA, INC.) ACHEM PRODUCTS, INC., RHONE POULENC, AG CO. AND BENJAMIN FOSTER COMPANY, BEAZER EAST (A/K/A KOPPERS CO., INC. AND KOPPERS), BIRD INC., BOC GROUP, BORG-WARNER CORP., BRAND INSULATIONS, INC.,

(For Continuation of Caption See Inside Cover)

BRIEF OF AMICUS CURIAE PRODUCT LIABILITY ADVISORY COUNCIL, INC. IN SUPPORT OF APPELLANTS / CROSS-APPELLEES HOBART BROTHERS COMPANY AND LINCOLN ELECTRIC COMPANY

ON REHEARING *EN BANC* OF APPEAL FROM THE JUDGMENT ENTERED ON FEBRUARY 22, 2011 IN THE COURT OF COMMON PLEAS OF PHILADELPHIA COUNTY AT DECEMBER TERM 2008, NO. 01335

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Defendants.

STATEMENT OF INTEREST

The Product Liability Advisory Council, Inc. ("PLAC") is a non-profit association with 105 corporate members from a broad cross-section of American and international product manufacturers. PLAC's corporate members are listed at Tab "A". In addition, several hundred leading product liability defense attorneys are sustaining (non-voting) members of PLAC.

PLAC seeks to contribute to the improvement and reform of the law affecting product liability in the United States and elsewhere. PLAC's point of view reflects the experience of corporate members in diverse manufacturing industries. Since 1983, PLAC has filed over 1,000 briefs as *amicus curiae* in state and federal courts, including this Court, presenting the broad perspective of product manufacturers seeking fairness and balance in the application and development of product liability law.

PLAC's members, and other product manufacturers throughout the nation, have a strong interest in ensuring that established principles of legal causation are not watered down in the context of asbestos and other multi-defendant personal injury litigation. Defendants should not be liable where plaintiffs present an expert opinion based on the scientifically unsound principle that each and every exposure to an asbestos-containing product—no matter how small, and no matter what total exposure the plaintiff experienced—played a substantial, causative role in a plaintiff's claimed injuries. Such "any-exposure" opinions are not grounded in scientific consensus or the facts of the particular case, and invite juries to ignore the exposure evidence presented.

This *amicus curiae* brief is respectfully submitted to the Court to address the public importance of this issue apart from and beyond the immediate interests of the parties to this case.

TABLE OF CONTENTS

Page

STATEMENT OF INTEREST i

TABLE OF CONTENTS iii

TABLE OF AUTHORITIES v

STATEMENTS OF JURISDICTION, ORDER IN QUESTION, SCOPE AND STANDARD OF REVIEW, and questions involved 1

STATEMENT OF THE CASE 2

SUMMARY OF ARGUMENT 3

ARGUMENT 5

I. Any-Exposure Opinions Are Not Admissible Evidence. 5

A. The Supreme Court Has Repeatedly Held That Expert Testimony May Not Rely On The Any-Exposure Causation Theory In Mesothelioma Cases. 5

1. Gregg v. V-J Auto Parts 6

2. Betz v. Pneumo-Abex 9

3. Howard v. A.W. Chesterton Co. 12

B. The Pennsylvania Supreme Court Has Given "Any-Exposure" Causation Opinions In Mesothelioma Cases A Thorough Airing And Held Them Legally And Scientifically Inadequate, So This Court Should Do The Same. 15

C. Any-Exposure Opinions Are Scientifically Baseless And Legally Improper. 18

1. Any-Exposure Opinions Are Scientifically Insupportable Because They Ignore The Dose-Response Relationship. 19

2. Any-Exposure Opinions Are Legally Improper Because They Reject The Need For Evidentiary Support And Testify To Legal Conclusions. 23

D. Other Courts Agree That Any-Exposure Opinions Are Not Admissible Evidence. 28

II. Plaintiff's Expert's Any-Exposure Opinion Should Have Been Excluded...32

A. Dr. DuPont Testified That Any Asbestos Exposure Should Be Considered A Substantial Factor In Causing Mesothelioma. 33

B. Dr. DuPont's Opinion Is Inadmissible Because It Failed to Consider Actual Exposure Levels. 39

CONCLUSION 41

TABLE OF AUTHORITIES

Page

Cases

Daubert *v.* *Merrell* *Dow*,

Pharms., 509 U.S. 579 (1993)..... 20

No table of authorities entries found.No table of authorities entries found.

STATEMENTS OF JURISDICTION, ORDER IN QUESTION, SCOPE AND STANDARD OF REVIEW, AND QUESTIONS INVOLVED

PLAC accepts the statements of jurisdiction, the order in question, the scope and standard of review, and questions involved set forth in the Brief of Appellants / Cross Appellees Lincoln and Hobart.

PLAC's brief focuses on the following question in particular:

> 2. Did the trial court commit prejudicial error in failing to exclude testimony from Plaintiff's proffered experts and failing to grant a nonsuit or new trial in response to Hobart and Lincoln's post-trial motions where
>
> a. The trial court erroneously relied on *Donoughe v. Lincoln Electric Company*, 936 A.2d 52, (Pa. Super. 2007), to permit Plaintiff's physician, Dr. Daniel DuPont to express the opinion that "any exposure to asbestos is a substantial contributing factor to asbestos disease," a view that has been rejected by the Pennsylvania Supreme court in *Gregg v. V-J Auto Parts Company*, 943 A.2d 216 (Pa. 2007); and
>
> b. The trial court erroneously admitted Plaintiff's expert Dr. Daniel DuPont's testimony even though Plaintiff's hypothetical questions to Dr. Daniel DuPont had no evidentiary support; even though Dr. Daniel DuPont had no expertise independent of the defective hypothetical questions to render any competent opinion about asbestos fiber release from welding rods; even though neither the Plaintiff's hypothetical questions nor Dr. Daniel DuPont's own testimony met the standard that the plaintiff established for causation of mesothelioma?

Appellants' Brief at 9-10.

STATEMENT OF THE CASE[1]

PLAC accepts the statements of the case and of the facts of Appellants / Cross Appellees Hobart and Lincoln. For purposes of PLAC's brief, the essential facts are these:

- Plaintiff's decedent was exposed to asbestos from numerous sources, while employed for 33 years at a steel mill, and while removing asbestos from buildings. Trial Ct. Op. at 3-4, R.2314a-22a, R.2373a, R.2480a-81a, R.2488a, R.2505a.

- One of the decedent's claimed exposures was to Hobart and Lincoln asbestos-containing welding rods for about two years, between early 1979 and 1981. R.2321a-22a, R.1646a.

- Plaintiff's expert, Dr. Daniel DuPont, offered a causation opinion based on the theory that asbestos exposure to "anything" more than "negligible" background levels is a substantial contributing factor in causing mesothelioma. R.2472a-73a, R.2475a, R.2477a ("each individual exposure . . . above a non-negligible [*sic*] level . . . constitute[d] a substantial and contributing factor"), R.2490a ("no such thing beyond ambient air as an insignificant asbestos exposure"), R.2501a.

- Dr. DuPont conducted no tests or other investigations of these defendants' welding rods to determine how much asbestos, if any, they shed. R 2469a-70a.

- Although Dr. DuPont reviewed the decedent's work history and medical records, R.2471a, R2473a, he did not testify to, nor was he asked to assume, any particular asbestos exposure dosage for the decedent from the defendant's products. R.2474a, R.2479-80a, R.2483a (decedent's "fiber burden" not determined).

- Dr. DuPont did not estimate the level of the decedent's cumulative exposure to asbestos, except to testify that the unspecified dose was "substantial," or a "substantial contributing factor." R.2473a, R2479a-80a.

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1 Documents in the Reproduced Record are cited as "R.___a."

- Dr. DuPont has no expertise in determining exposure levels and did not attempt to do so here. R2469a-70a, 2486a, 2505a.
- Dr. DuPont refused to consider "risk" after a disease had occurred. R.2477a.
- Dr. DuPont did not differentiate between different exposures, considering all workplace exposures to be "substantially" causative, regardless of exposure levels. R.2475a ("all" fibers causative), R.2476a ("if they breathed in dust" it "contributed"); R.2477a, R.2480a, R.2495a-96a, R.2505a.
- Dr. DuPont denied that mesothelioma was a dose-responsive disease. R.2472a, R.2493a, R.2503a.

SUMMARY OF ARGUMENT

The Pennsylvania Supreme Court has, in several mesothelioma cases, repeatedly and unequivocally held that "any-exposure" opinions—*i.e.*, opinions offered by expert witnesses that any exposure to asbestos, regardless of dose, are a "substantial factor" in causing asbestos-related disease—cannot be used to establish liability based on exposure to asbestos from a particular defendant's product. Precisely that happened here. The trial court erroneously permitted Plaintiff to rely on an any-exposure opinion.

As the Supreme Court has spoken, and thoroughly aired the "any-exposure" issue, it becomes the role of this court to follow the Supreme Court's holdings and not evade them through cramped readings and distinctions without differences.

Furthermore, these repeated Supreme Court holdings are based on strong scientific and legal grounds. Science establishes that dosage is a primary consideration in considering whether a given exposure to a toxin caused a given injury. The law prohibits experts from overriding the role of the judge to instruct the jury, and from encouraging the jury to ignore the evidence.

In this case, the Plaintiff's expert gave opinions: (1) based on the impermissible any-exposure causation theory and (2) without any record support concerning the Decedent's absolute or comparative exposure to asbestos from Defendants' products. Both the Decedent's total exposure to asbestos, and his exposure to asbestos from these defendants' products remains undetermined.

A majority of the panel recognized Dr. DuPont's any-exposure opinion for what it was and vacated the judgment. The dissent split hairs, believing incorrectly that undetermined exposure above "*de minimis*" level is sufficient. The majority was correct, as Dr. DuPont's opinions fails multiple criteria set by the Supreme Court.

The full Court should follow the panel and vacate the judgment, and should award either judgment n.o.v. or, at minimum, a new trial.

ARGUMENT

"The theory that each and every exposure, no matter how small, is substantially causative of disease **may not be relied upon** as a basis to establish substantial-factor causation for diseases that are dose-responsive." *Howard v. A.W. Chesterton Co.*, 78 A.3d 605, 608 (Pa. 2013) (emphasis added) (citing *Betz v. Pneumo Abex LLC*, 615 Pa. 504, 549-54, 44 A.3d 27, 55-58 (2012)). That is the law. Principles of *stare decisis* require this Court to follow it.

Dr. Daniel DuPont relied upon and presented to the jury just such an "any-exposure" theory. He testified repeatedly that "anything" greater than "negligible" exposure – defined as "ambient" air – was a "substantial" factor in causing the decedent's death. He made no exposure estimate specific to either the decedent or these defendants' products, nor relied on any. Indeed, he rejected the idea of "risk" altogether. In failing to exclude this testimony, and then failing to grant judgment as a matter of law, the trial court committed reversible error.

I. Any-Exposure Opinions Are Not Admissible Evidence.

A. The Supreme Court Has Repeatedly Held That Expert Testimony May Not Rely On The Any-Exposure Causation Theory In Mesothelioma Cases.

Three times since 2007, the Pennsylvania Supreme Court has considered whether an expert in asbestos litigation may testify that mesothelioma was caused by a defendant's product based on the theory that every exposure to asbestos above background level in ambient air is a substantial factor in causing the disease. *Howard v. A.W. Chesterton Co.*, 78 A.3d 605 (Pa. 2013) (per curiam); *Betz v. Pneumo Abex LLC*, 615 Pa. 504, 44 A.3d 27 (2012); *Gregg v. V-J Auto Parts Co.*,

596 Pa. 274, 943 A.2d 216 (2007). This is yet another such case, and its resolution is controlled by those decisions. As those cases show, the Supreme Court has roundly rejected the so-called "any-exposure" theory, and this Court should follow suit here.

The Supreme Court repeatedly has not only rejected any-exposure-above-ambient causation opinions, but has also required that expert opinions in mesothelioma cases testify specifically concerning the product(s) at issue. Substantial-factor causation requires concrete evidence of *the plaintiff's exposure* to asbestos from *the defendant's products* at scientifically significant levels in comparison to the plaintiff's total exposure. *See Betz*, 615 Pa. at 553-54, 44 A.3d at 58.

This case presents the opportunity for this Court, speaking *en banc*, to ensure that its precedent, and trial court practice, are in line with the Supreme Court's clear instructions, and to forbid once and for all the use of any-exposure opinions in asbestos/mesothelioma cases.

1. Gregg v. V-J Auto Parts

In *Gregg v. V-J Auto Parts Co.*, 596 Pa. 274, 943 A.2d 216 (2007), the plaintiff sought to recover for an unproven, and at best *de minimis*, exposure to the defendant's products in a mesothelioma case, and the trial court granted summary judgment for the defendant. The immediate question before the Supreme Court was whether to apply to mesothelioma cases the same "frequency, regularity, proximity" asbestos exposure standard first enunciated in Pennsylvania by this Court in *Eckenrod v. GAF Corp.*, 375 Pa. Super. 187, 544 A.2d 50 (1988),

allocatur denied, 520 Pa. 607, 553 A.2d 969 (1988). *Gregg*, 596 Pa. at 279, 943 A.2d at 218-19. The plaintiff presented an expert opinion that, no matter how minor the plaintiff's exposure to the defendant's products, "each and every exposure" to asbestos was a "substantial contributing factor" to the plaintiff's development of mesothelioma. 596 Pa. at 286, 943 A.2d at 223.

The Supreme Court did not accept that the plaintiff's any-exposure opinion was sufficient to establish causation and agreed with the defendant that the three-prong "frequency, regularity, proximity" exposure standard "should have broader application in the courts' assessment of the sufficiency of a plaintiff's proofs." 596 Pa. at 289-90, 943 A.2d at 225. The Court rejected a proposed limitation of this standard to "circumstantial" cases:

> [T]he bright-line distinction that [plaintiff] seeks to draw between direct and circumstantial evidence cases is not warranted, because this distinction is unrelated to the strength of the evidence and is too difficult to apply.

596 Pa. at 290, 943 A.2d at 226.

The Court also rejected the "fiction that each and every exposure to asbestos, no matter how minimal in relation to other exposures, implicates a fact issue concerning substantial-factor causation in every 'direct-evidence' case." 596 Pa. at 292, 943 A.2d at 226-27. Recognizing that it was "common for plaintiffs to submit expert affidavits attesting that any exposure to asbestos, no matter how minimal, is a substantial contributing factor in asbestos disease," the Court held that any-exposure opinions were "not fairly grounded in . . . the underlying facts" and "not

couched within accepted scientific methodology." 596 Pa. at 291, 943 A.2d at 226.

The Court reasoned that "if such an opinion were permitted to control, the substantial factor test would be rendered meaningless." *Id.* (citing *Lindstrom v. A-C Product Liability Trust*, 424 F.3d 488, 493 (6th Cir. 2005)). *Gregg* further recognized the danger that holding otherwise would "subject defendants to full joint-and-several liability for injuries and fatalities in the absence of any reasonably developed scientific reasoning that would support the conclusion that the product sold by the defendant was a substantial factor in causing the harm." 596 Pa. at 292, 943 A.2d at 227.

On remand, this Court found that:

> [T]here is simply no evidence to support the conclusion that the decedent had more than *de minimis* contact with [defendant's] products. The type of product bought and the type of product used by decedent . . . was generally unknown. There is no evidence at all to support the conclusion that the decedent had definite contact with [defendant's] products, which contained asbestos. Even the expert reports did not create a jury question, as detailed by the Supreme Court, as they contained no evidence to support [plaintiff's] claim of decedent's exposure.

Gregg v. V-J Auto Parts Co., 2009 PA Super 111, ¶8, 975 A.2d 1171, 1177-78 (2009).[2]

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[2] In *Summers v. Certainteed Corp.*, 606 Pa. 294, 997 A.2d 1152 (2010), another case involving any-exposure expert testimony, the Supreme Court vacated summary judgment, finding that the wrong standard of review had been employed and that shortness of breath was sufficient injury. As to the any-exposure expert opinion itself, the Court reiterated what it held in *Gregg*: "this

Continued on following page

2. Betz v. Pneumo-Abex

The unanimous Supreme Court in *Betz v. Pneumo Abex LLC*, 615 Pa. 504, 44 A.3d 27 (2012) – another mesothelioma case − held that the trial court had properly excluded the plaintiff's any-exposure expert opinion after a *Frye* hearing. The Court explained that "a reasonably broad meaning should be ascribed to the term 'novel'" in determining whether a *Frye* challenge to expert testimony was appropriate. 615 Pa. at 545, 44 A.3d at 53. Thus, "a *Frye* hearing is warranted when a trial judge has articulable grounds to believe that an expert witness has not applied accepted scientific methodology in a conventional fashion in reaching his or her conclusions." *Id.* Any "narrower approach would unduly constrain trial courts in the appropriate exercise of their discretion in determining the admissibility of evidence." 615 Pa. at 546, 44 A.3d at 53.

On the merits, *Betz* held the trial court was "right to be circumspect about the scientific methodology underlying the any-exposure opinion" because it presented no "coherent methodology supporting the notion that every single fiber from among, potentially, millions is substantially causative of disease." *Id.* The Court also found the trial court properly "appreciated the considerable tension between the any-exposure opinion and the axiom (manifested in myriad ways both in science and daily human experience) that the dose makes the poison." *Id.* Any-

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Court recently rejected the viability of the 'each and every exposure' or 'any breath' theory." 606 Pa. at 310 n.14, 997 A.2d at 1161 n.14 (quoting *Gregg*).

exposure opinions were unscientific because they "obviate[] the necessity for plaintiffs to pursue the more conventional route of establishing specific causation…." 615 Pa. at 546, 44 A.3d at 54.

The Court in *Betz* thoroughly aired the legal and scientific issues surrounding any-exposure opinions, holding them inadmissible in mesothelioma cases because they violated the *Frye*-based "generally accepted" standard for the admissibility of expert testimony, especially when they were not supported by factual evidence of the plaintiff's substantial exposure to asbestos from the defendant's product.[3] The Court identified an "irreconcilable conflict" between any-exposure opinions and the reality that mesothelioma is a dose-responsive disease. 615 Pa. at 550, 44 A.3d at 56. "Simply put, one cannot simultaneously maintain that a single fiber among millions is substantially causative, while also conceding that a disease is dose responsive." *Id.* "The any-exposure opinion, as applied to substantial-factor causation, does not consider the three factors which … need to be considered in trying to estimate the relative effects of different exposures." *Id.*

Betz further emphasized a causation opinion must account for *comparative* levels of exposure to asbestos from different products because the relative effects

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[3] In *Betz*, the plaintiff had urged the trial court to rule that the any-exposure opinion was admissible and permitted the plaintiff to survive summary judgment even if the plaintiff proffered no evidence of the amount of exposure "so long as they could establish exposure to at least a single fiber from each defendant's product." 615 Pa. at 549, 44 A.3d at 55.

of possible causes must be part of any substantial-factor causation analysis. The Supreme Court followed Restatement (Second) of Torts §433, comment d (1965),[4] directing that a "substantial factor" must in fact be "substantial" in comparison to any other exposures:

> The comments to the Second Restatement of Torts recognize that *a proportionate evaluation* may be required in a reasoned assessment of substantial-factor causation. "Some other event which is a contributing factor in producing the harm may have such a predominant effect in bringing it about as to make the effect of the actor's negligence insignificant and, therefore, to prevent it from being a substantial factor."

Betz, 615 Pa. at 550 n.36, 44 A.3d 56 n.36 (citation and quotation marks omitted) (emphasis added).

To that end, the *Betz* Court repeated the declaration from *Gregg* that "'we do not believe that it is a viable solution to indulge in a fiction that each and every exposure to asbestos, no matter how minimal *in relation to other exposures*, implicates a fact issue concerning substantial-factor causation….'" 615 Pa. at 551, 44 A.3d at 56-57 (quoting *Gregg*, 596 Pa. at 291-92, 943 A.2d at 226-27) (emphasis added). It returned repeatedly to the point that proving substantial-factor causation requires a showing of substantial causation in comparison to other potential causes. 615 Pa. at 546, 44 A.3d at 54 (noting plaintiff's burden to present "a reasonably complete occupational history and provid[e] some reasonable

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[4] As noted in *Betz*, the Supreme Court adopted comment d to §433 as "consistent with Pennsylvania law" in *Vattimo v. Lower Bucks Hospital, Inc.*, 502 Pa. 241, 246-47, 465 A.2d 1231, 1233-34 (1983).

address of potential sources of exposure other than a particular defendant's product"); 615 Pa. at 552, 44 A.3d at 57 ("with regard to the cigarette analogy, [the plaintiff's expert] offered no scientific basis for concluding that a single cigarette of the potentially half-million a person might smoke in a lifetime is substantially causative of such person's lung cancer"). In short, "a comparative assessment of impact among differing exposures … is required for causal attribution as a matter of science, as it is under Pennsylvania law." 615 Pa. at 554, 44 A.3d at 58 (citing *Gregg*, 596 Pa. at 291-92, 943 A.2d at 226-27).

For all of these reasons, the Court in *Betz* concluded that the trial court had properly held a *Frye* hearing, excluded the plaintiffs' any-exposure expert causation opinions, and then granted summary judgment for defendants.

3. Howard v. A.W. Chesterton Co.

Last year, shortly after the panel opinions issued in this case, the Supreme Court again rejected an expert's flawed any-exposure opinion in a mesothelioma asbestos case in *Howard v. A.W. Chesterton Co.*, 78 A.3d 605 (Pa. 2013) (*per curiam*). In *Howard*, the trial court granted summary judgment because the plaintiff's deposition testimony failed to establish "that he breathed asbestos-containing dust from the products manufactured or distributed" by the defendants. *Id.* at 607. This Court reversed, reasoning that even "one or a *de minimis* number of asbestos fibers" can be "a substantial factor in causing a plaintiff's injury." *Howard v. A.W. Chesterton Co.*, 2011 PA Super 230, 31 A.3d 974, 983 (2011), *rev'd*, 78 A.3d 605 (Pa. 2013) (citation and quotation marks omitted). The Court also stated it was an "overly expansive reading of the holding of *Gregg*" for any-

exposure opinions to "be rejected as a matter of law." *Id.* at 983 (quoting *Estate of Hicks v. Dana Companies, LLC*, 2009 PA Super 220, ¶14, 984 A.2d 943, 957 (2009), *allocatur denied*, 610 Pa. 586, 19 A.3d 1052 (2011)).

For the third time in three years, the Supreme Court granted *allocatur* on the any-exposure question in *Howard*. On appeal, an extraordinary thing happened. The plaintiff-appellant, transparently maneuvering to avoid review of the *Hicks* line of cases narrowly interpreting *Gregg* and *Betz*, conceded error and "agree[d] that the order of the Superior Court should be reversed." *Howard*, 78 A.3d at 607. The defendant-appellant, seeking to vindicate its broader view of *Gregg*, asked the Supreme Court to decide *Howard* on the merits despite the plaintiff's belated post-grant concession.

The Supreme Court agreed with the defendant in *Howard*, opined on the merits, and rejected the view that "a plaintiff bears a diminished burden of meeting a frequency, regularity, and proximity threshold of exposure in cases of mesothelioma, since the disease may be caused by limited exposure to asbestos." 78 A.3d at 607. First, the Supreme Court quoted at length the plaintiff's concession that this Court had erred in *Howard* in distinguishing *Gregg* on a technicality, and held further that the Supreme Court

> will not allow Plaintiffs to prove that a plaintiff's exposure to a particular asbestos-containing product is substantially causative of disease by the use of affidavits in which the expert's methodology is founded upon a belief that every single fiber of

> asbestos is causative.[5] In *Gregg* [the Supreme] Court articulated that the usage of a particular product had to be substantial enough when measured against the totality of the exposures, that the particular product usage was substantial enough to be a factual cause of the disease. . . . The test for adequacy is the comparison of the particular product exposure(s) to the totality of the person's asbestos exposures.

Id. at 607-08 (ellipsis added by Supreme Court).

In light of the pendency of similar asbestos cases, and the plaintiffs' obvious tactic of using concessions of error to attempt to insulate narrow interpretations of *Gregg* and *Betz* from further review, the Supreme Court granted the defense request that it "reaffirm several governing principles deriving from prior cases." *Id.* Specifically, the Supreme Court declared that the following "precepts are now well established" in mesothelioma cases such as *Gregg*, *Betz*, and now *Howard*:

> –The theory that each and every exposure, no matter how small, is substantially causative of disease may not be relied upon as a basis to establish substantial-factor causation for diseases that are dose-responsive. *See Betz* [, 615 Pa. at 549-54, 44 A.3d at 55-58]
>
> –Relatedly, in cases involving dose-responsive disease, expert witnesses may not ignore or refuse to consider dose as a factor in their opinions. *See id.*
>
> –Bare proof of some *de minimus* exposure to a defendant's product is insufficient to establish substantial factor causation for dose-responsive diseases. *See Gregg* [596 Pa. at 291-92, 943 A.2d at 225-26].

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5 The Supreme Court agreed with this characterization of its precedents and quoted it twice, explaining that the plaintiffs "read and understood the decisions in *Gregg* and *Betz* to mean what these decisions say." 78 A.3d at 609.

> –Relative to the testimony of an expert witness addressing substantial-factor causation in a dose-responsive disease case, some reasoned individualized assessment of a plaintiff's or decedent's exposure history is necessary. *See Betz*, 615 Pa. at 549-54, 44 A.3d at 55-58.

Howard, 78 A.3d at 608.

The Supreme Court explained that these "now unremarkable propositions" were "nothing more than a modest elaboration upon" the plaintiffs' concessions which were, in turn, based on the Court's holdings in *Gregg* and *Betz*. *Id.* at 609. Ultimately, the Supreme Court reiterated and underlined the basic principle that "as explained in detail in the unanimous decision in *Betz*, the any-exposure opinion is simply unsupportable both as a matter [of] law and science." *Id.* (citing *Betz*, 615 Pa. at 549-54, 44 A.3d at 55-58). The same is true of Dr. DuPont's any-exposure, no-dose-information opinions in this case.

B. The Pennsylvania Supreme Court Has Given "Any-Exposure" Causation Opinions In Mesothelioma Cases A Thorough Airing And Held Them Legally And Scientifically Inadequate, So This Court Should Do The Same.

Dr. DuPont's testimony in this case violates all of the propositions reiterated by the Supreme Court in *Howard*. The common law is founded on − and the Pennsylvania judiciary is organized around – the principle that a Supreme Court "opinion becomes binding precedent on the courts of this Commonwealth" and is binding "precedent as to different parties in cases involving substantially similar facts, pursuant to the rule of *stare decisis*." *Commonwealth v. Tilghman*, 543 Pa. 578, 588, 673 A.2d 898, 903 (1996) (footnotes omitted); *see also Commonwealth v. Randolph*, 553 Pa. 224, 230-31, 718 A.2d 1242, 1245 (1998) ("It is a

fundamental precept of our judicial system that a lower tribunal may not disregard the standards articulated by a higher court."); *Eckman v. Erie Ins. Exchange*, 2011 PA Super 87, 21 A.3d 1203, 1209 (2011) (Superior Court is bound by doctrine of *stare decisis* and must follow controlling precedent).

When, as here, the Supreme Court has spoken repeatedly, clearly and unequivocally, this Court need not, and should not, reweigh the policies underlying that Court's dictates. This Court is "duty-bound to effectuate [the Supreme] Court's decisional law." *Walnut St. Associates, Inc. v. Brokerage Concepts, Inc.*, 610 Pa. 371, 391-92, 20 A.3d 468, 480 (2011) (citing *Behers v. Unemployment Comp. Bd. of Review*, 577 Pa. 55, 67-68, 842 A.2d 359, 367 (2004)). The "Supreme Court, as the policy making court in this Commonwealth," is empowered to make such policy decisions and change the law, but, "[i]n the meantime, this Court, being an error correcting court," must rule "in accord with principles of law adopted by prior appellate court decisions." *Aivazoglou v. Drever Furnaces*, 418 Pa. Super. 111, 119, 613 A.2d 595, 600 (1992).

While sitting *en banc*, this Court is not bound by its own panels' decisions. *Com. v. Spease*, 2006 PA Super 323, ¶¶18-21, 911 A.2d 952, 959 (2006), *allocatur denied*, 603 Pa. 681, 982 A.2d 510 (2009); *Com. v. Robinson*, 2007 PA Super 230, ¶6, 931 A.2d 15, 19 (2007) (one function of "*en banc* review is to harmonize or overrule prior precedent if necessary") (citing Pa.R.A.P. 2543 (note)); Superior

Court I.O.P. §65.38(B)(1)).[6] But this Court is required to follow the Supreme Court's precedents. The *en banc* Court recognized this in *Malinder v. Jenkins Elevator & Machinery Co.*, and analyzed its duty when faced with competing doctrinal analyses:

> In this case it is not necessary for us to decide which of the analyses of the doctrine . . . is the one to be followed in Pennsylvania. Furthermore, it is not necessary for us to explore the extent and impact of a particular analysis. Such determinations are the prerogative of the Supreme Court of Pennsylvania. Rather, we are compelled to follow the Supreme Court's decision … in factual situations of the same class, which we find the present case to be. **Where the Supreme Court has spoken on a particular subject, it is our obligation, as an intermediate appellate court, to follow and apply that decision so as to establish some measure of predictability and stability in our case law.** In the absence of a legally relevant distinction between the facts of a previous case and the case before us, we are obliged to follow the dictates of the Supreme Court's decision in the prior case.

371 Pa. Super. 414, 421, 538 A.2d 509, 513 (1988) (*en banc*) (emphasis added).

Indeed, as the Supreme Court has "caution[ed]," the "task [of the Pennsylvania intermediate courts] is to effectuate the decisional law of this Court, not to restrict it through curtailed readings of controlling authority." *Behers*, 577 Pa. at 67, 842 A.2d at 367. This Court in *Malinder* recognized that adherence to

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[6] This Court, therefore, is not bound by, and should overrule, the decision of the three-judge panel in *Donoughe v. Lincoln Electric Company*, 2007 PA Super 309, 936 A.2d 52 (2007), upon which the trial court relied, because it conflicts with the Supreme Court's subsequent decisions in *Gregg*, *Betz*, and *Howard*, as discussed below.

stare decisis means rejecting hair-splitting distinctions offered in opposition to the application of controlling precedent:

> **Resolving cases by attempting to create irrelevant, factual distinctions impedes application of the doctrine of *stare decisis***, the principal function of which is to imbue the judicial system with some measure of predictability and stability, and places the development of the law in a constant, uncertain state of flux such that neither practitioners nor trial judges can, with any degree of predictability, determine the proper application of the law to each new case involving similar facts that comes before them. **It also is not our prerogative to apply different methods of analysis where our Supreme Court has made clear which particular analysis it believes should be applied to a particular situation**. . . . Therefore, although we would be free to apply a different analysis and obtain a different resolution of the case immediately before us if there were no precedent for us to follow, we are compelled to follow the analytical framework established by the Supreme Court … and reach a similar conclusion.

Malinder, 371 Pa. Super. at 421-22, 538 A.2d at 513 (*en banc*) (emphasis added).

As discussed above, the Supreme Court has repeatedly instructed that "[t]he theory that each and every exposure, no matter how small, is substantially causative of disease may not be relied upon as a basis to establish substantial-factor causation for diseases that are dose-responsive." *Howard*, 78 A.3d at 608. That principle governs this case, and should guide this Court's decision.

C. Any-Exposure Opinions Are Scientifically Baseless And Legally Improper.

Given the recent Supreme Court precedent in *Gregg*, *Betz*, and *Howard*, this case presents the antithesis of a blank slate. There is thus no need for this Court to independently assess the policies underlying those decisions. Nonetheless, it bears

repeating that the Pennsylvania Supreme Court's legal rulings that any-exposure opinions are fundamentally incompatible with the substantial-factor causation standard are based on an overwhelming body of scientific analysis and case law.

1. Any-Exposure Opinions Are Scientifically Insupportable Because They Ignore The Dose-Response Relationship.

In toxic-exposure cases, expert testimony on causation is rooted in principles established through toxicology and epidemiology. *See Betz*, 615 Pa. at 549, 44 A.3d at 54-55. The substantial-factor causation standard for legal causation is based on the consensus understanding of scientists in those fields: dosage matters. *See id.* at 56-57; *Howard*, 78 A.3d at 608 ("in cases involving dose-responsive diseases, expert witnesses may not ignore or refuse to consider dose as a factor in their opinions"). By contrast, expert opinions claiming instead that *any* exposure to asbestos is a substantial factor causing an injury are fiction and contradict that consensus.

Dosage matters. It is an "axiom (manifested in myriad ways both in science and daily human experience) that the dose makes the poison." *Betz*, 615 Pa. at 546, 44 A.3d at 53; 615 A.2d at 525, 44 A.3d at 40 (2012) ("In short, the poison is in the dose.") (quoting trial court); 615 Pa. at 511, 44 A.3d at 31 ("Dose is a central concept in toxicology—'the dose makes the poison' is the oldest maxim in the field.") (quoting Bernard D. Goldstein, *Toxic Torts: The Devil Is In the Dose*, 16 J.L. & Pol'y 551, 551 (2008))

This principle recognizes that all chemical substances, "[e]ven water," can cause harm, but only when a person is exposed to a sufficient dose of the

substance. 615 Pa. at 525, 44 A.3d at 40 (quoting trial court).[7] "[D]epending upon dose, all chemical and physical agents are harmful." Bernard D. Goldstein & Mary Sue Henifin, "Reference Guide on Toxicology," *Reference Manual on Scientific Evidence*, at 660 (Fed. Jud. Ctr. 3d ed. 2011) ("*Toxicology Guide*")).[8] Therefore, to establish causation the dose must be, if not known precisely, at least estimated reasonably. Thus, the foundation of toxicology is the dose-response relationship, which "describes the relationship between the magnitude or severity of the effects [of a substance] and the dose." David L. Eaton, *Scientific Judgment & Toxic Torts – A Primer in Toxicology for Judges & Lawyers*, 12 J.L. & Pol'y 5, 15 (2003).

"Ultimately the dose incurred by populations or individuals is the measure needed by health experts to quantify risk of toxicity." Joseph V. Rodricks, "Reference Guide on Exposure Science," *Reference Manual on Scientific Evidence*, at 507 (Fed. Judicial Center 3d ed. 2011) ("*Exposure Science Guide*"). Establishing the degree of exposure to a substance is "[c]ritical to the determination of causation." *Id.* "Dose is a central concept in the field of toxicology, and an expert toxicologist will consider the extent of a plaintiff's dose

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[7] Some substances, while helpful or even necessary to sustain life, are harmful in large doses. Oxygen is toxic when breathed in 100% concentrations over several days, and aspirin, while alleviating headaches with two tablets, can be fatal if an entire bottle is ingested. Ronald E. Gots, *Toxic Risks: Science, Regulation & Perception*, at 42 (CRC Press 1993).

[8] Following the decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the Federal Judicial Center produced a series of authoritative references for judges faced with determining the reliability of various types of expert testimony, the most recent being the 2011 third edition of the *Reference Manual on Scientific Evidence*.

in making an opinion." *Toxicology Guide* at 638.[9] In short, dose is "the single most important factor to consider in evaluating whether an alleged exposure caused a specific adverse effect." Eaton, *Scientific Judgment*, 12 J.L. & Pol'y, at 11.

Accordingly, determining the dose-response relationship is "essential in evaluating a causal connection between an alleged exposure and a particular disease." Eaton, *Scientific Judgment*, 12 J.L. & Pol'y, at 18. The dose-response relationship of a given substance is "relatively consistent" and "predictable from person to person." Gots, *Toxic Risks*, at 44 (observing "[i]f this were not so, there would be no safe medications; two tablets might help one patient, but kill another"); *see Toxicology Guide*, at 665 (causation "is based on an assessment of the individual's exposure, including the amount, the temporal relationship between the exposure and disease, and other disease-causing factors. This information is then compared with scientific data on the relationship between exposure and disease."). As one scientist observed about chemical carcinogens, "To deny the

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[9] Like toxicology, epidemiology also recognizes that set criteria must be met before experts may make valid causation determinations. Epidemiology concerns "disease causation and [how] to prevent disease in groups of individuals." Michael D. Green, D. Michal Freedman & Leon Gordis, "Reference Guide on Epidemiology," *Reference Manual on Scientific Evidence*, at 551 (Fed. Jud. Ctr. 3d ed. 2011) ("*Epidemiology Guide*"). When diagnosing causes of disease, physicians/scientists first look to epidemiology to determine if there is, at least, a statistically significant association between a substance and a disease. If one exists, epidemiologists then use other criteria to evaluate whether the epidemiologic association is causal. Those criteria are: (1) consistency; (2) strength of association; (3) dose response; (4) biological plausibility; (5) coherence; (6) temporality; (7) specificity; (8) analogy; and (9) experimentation. Douglas L. Weed, *Causation: An Epidemiologic Perspective (In Five Parts)*, 12 J.L. & Pol'y 43, 43 (2003-04), *citing* Austin Bradford Hill, *The Environment & Disease: Association or Causation?*, 58 Royal Soc'y Med. 295, 295-300 (1965). The *Epidemiology Guide* lists these as factors to be used in determining causation. *See Epidemiology Guide*, at 600.

existence of dose response [is] clearly an insupportable concept." Paul Kotin, *Dose-Response Relationship & Threshold Concepts*, 271 Annals N.Y. Acad. Sci. 22, 24 (1976).

One crucial step in determining dose-response is for toxicologists to determine the "no observable effect level," the "threshold . . . below which no toxicity is observed." *Toxicology Guide*, at 641; Eaton, *Scientific Judgment*, 12 J.L. & Pol'y, at 16, Gots, *Toxic Risks*, at 47. Below this level "a relationship between the exposure and disease *cannot be established*." *Toxicology Guide*, at 669 (emphasis added). "When an exposure to a chemical is less than that known to produce a toxic response, *scientific data cannot, as a rule, support a claim of a causal connection*." Gots, *Toxic Risks*, at 163 (emphasis added). "It is not adequate to simply establish that 'some' exposure occurred. Because most chemically induced adverse health effects clearly demonstrate 'thresholds,' there must be reasonable evidence that the exposure was of sufficient magnitude to exceed the threshold before a likelihood of 'causation' can be inferred." Eaton, *Scientific Judgment*, 12 J.L. & Pol'y, at 39; *Epidemiology Guide* at 613 ("[A] risk estimate from a study that involved a greater exposure is not applicable to an individual exposed to a lower dose.").[10]

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[10] Some experts, and even some courts, use the term "threshold" to mean an exposure dose *below* which it has been scientifically established that a substance does *not* cause harm, and hence in the asbestos context it is sometimes said that there is "no known safe threshold" for asbestos exposure or "no innocent fibers." This concept, however, is utterly irrelevant in tort litigation, in which plaintiffs bear the burden of proving that the substance at issue—here

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Any-exposure expert opinions contradict the science of toxicology because they ignore dose. Any-exposure opinions ignore the basic tenet of toxicology that, to determine the cause of a particular condition reliably, one must determine the dose-response relationship between the substance and condition at issue. *Toxicology Guide*, at 646-47. The relevant question is not "Is any [toxin] present?", but "Is any meaningful amount [of toxin] present?" Gots, *Toxic Risks*, at 108-09. By testifying that "any exposure" is a substantial factor in causing of an injury, any-exposure opinions undermine the substantial-factor standard and threaten to unmoor the principles of legal causation from their scientific foundations. *See Howard*, 78 A.3d at 608; *Betz*, 615 Pa. at 545-46, 550, 44 A.3d at 53, 56; *Gregg*, 596 Pa. at 291-92, 943 A.2d at 226-27.

2. Any-Exposure Opinions Are Legally Improper Because They Reject The Need For Evidentiary Support And Testify To Legal Conclusions.

Experts may not opine on legal questions. Substantial-factor causation is a *legal principle* on which trial courts instruct juries. Substantial-factor causation is not a *scientific question* on which experts can opine. Any-exposure opinions are legally improper because they, by their very nature, opine on a question of law—whether a certain exposure should be considered a "substantial" causative factor in

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asbestos—*does* indeed cause harm in humans generally, and also that it *did* so in the particular plaintiff.

disease for purposes of tort liability. Moreover, instead of guiding the jury's application of the law to the facts, they invite the jury to ignore the evidence.

Experts may not opine on legal questions. The role of an expert witness is to "help the trier of fact to understand the evidence." Pa. R. Evid. 702. An expert's bare assertion that the legal standard is met, without a grounding in science and the factual evidence, is unhelpful to the jury and usurps the trial judge's exclusive function to charge the jury on the law.

"Legal opinion testimony is not admissible" in Pennsylvania courts. *Browne v. Pennsylvania DOT*, 843 A.2d 429, 433 (Pa. Commw. 2004) (footnote omitted), *allocatur denied*, 581 Pa. 681, 863 A.2d 1149 (Pa. 2004). While experts are allowed to opine on "ultimate" issues, Pa. R. Evid. 704, "a court need not … accept any of [a party's] conclusions of law or argumentative allegations," *Small v. Horn*, 554 Pa. 600, 608, 722 A.2d 664, 668 (1998). "[A]dmission of incompetent opinion evidence which goes to the legal conclusions to be drawn by the factfinder constitutes reversible error." *Taylor v. Fardink*, 231 Pa. Super. 259, 262, 331 A.2d 797, 799 (1974) (citation omitted).

"[E]ach courtroom comes equipped with a 'legal expert,' called a judge, and it is his or her province alone to instruct the jury on the relevant legal standards." *VIM, Inc. v. Somerset Hotel Ass'n*, 19 F. Supp. 2d 422, 427 n.4 (W.D. Pa. 1998) *aff'd*, 187 F.3d 627 (3d Cir. 1999) (quoting *Burkhart v. Washington Metro. Area Transit Auth.*, 112 F.3d 1207, 1213 (D.C. Cir. 1997)). "It is black-letter law that it is not for witnesses to instruct the jury as to applicable principles of law, but for the judge." *Nieves-Villanueva v. Soto-Rivera*, 133 F.3d 92, 99 (1st Cir. 1997)

(citations omitted). "[A]n expert's opinions as to the legal implications of conduct are generally not admissible" because "when an expert tries to state, using legal criteria, a conclusion that is essentially the same as the legal conclusion the jury will be asked to reach." New Wigmore: A Treatise on Evidence: Expert Evidence §2.3 Expert Testimony on Law; *see Novak v. Jeannette District Memorial Hospital*, 410 Pa. Super. 603, 607, 600 A.2d 616, 618 (1991) (expert opinions have "no effect" on questions of law).[11]

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[11] *Accord Newtown Square East, L.P. v. National Realty Corp.*, 38 A.3d 1018, 1026 n.10 (Pa. Commw. 2011) ("expert opinions relating to the meaning of laws are not relevant evidence"), *allocatur denied* 63 A.3d 1250 (Pa. 2013), *allocatur granted* 64 A.3d 624 (Pa. 2013); *Waters v. State Employees' Retirement Board*, 955 A.2d 466, 471 n.7 (Pa. Commw. 2008) ("well-settled that an expert is not permitted to give an opinion on a question of law"); *41 Valley Associates v. Board of Supervisors*, 882 A.2d 5, 14 n.12 (Pa. Commw. 2005) ("expert opinion on a question of law is inadmissible"), *allocatur granted* 587 Pa. 717, 898 A.2d 1073 (2006); *March v. Downingtown Area School District*, 775 A.2d 876, 880 (Pa. Commw. 2000) (affirming exclusion of expert opinion "more in the nature of argument on legal questions that were . . . for the court to decide"); *Bergman v. United Services Automobile Association*, 1999 PA Super 300, ¶15, 742 A.2d 1101, 1108 (1999) (affirming exclusion of expert opinion on bad faith as "usurping [the court's] role") (footnote omitted). Federal courts agree. *See, e.g., Berckeley Investment Group, Ltd. v. Colkitt*, 455 F.3d 195, 218 (3d Cir. 2006) ("any testimony as to the legal effect of the various [administrative] pronouncements . . . are inadmissible as improper legal opinions"); *Burkhart*, 112 F.3d at 1212 ("[e]xpert testimony that consists of legal conclusions cannot properly assist the trier of fact"); *United States v. Bilzerian*, 926 F.2d 1285, 1294 (2d Cir. 1991) (expert testimony "must be carefully circumscribed to assure that the expert does not usurp either the role of the trial judge in instructing the jury . . . or the role of the jury in applying that law to the facts"); *Farmland Industries v. Frazier-Parrott Commodities, Inc.*, 871 F.2d 1402, 1409 (8th Cir. 1989) ("the [expert] witness' testimony [is] superfluous. . . . The admission of such testimony would give the appearance that the court was shifting to [expert] witnesses the responsibility to decide the case") (citation and quotation marks omitted). *Accord Kubrick v. Allstate Insurance Co.*, 2004 WL 45489, at *16 (E.D. Pa. Jan. 7, 2004) (expert "opinion on [a] purely legal question is not relevant or helpful to a jury") (citations omitted), *aff'd*, 121 Fed. Appx. 447 (3d Cir. 2005); *Mause v. Global Household Brands, Inc.*, 2003 WL 22416000, at *4 (E.D. Pa. Oct. 20, 2003) ("It is for the Court, and not an expert, to decide whether the law is violated").

In short, a legal standard is "not an issue of fact subject to expert testimony, but is an issue of law for the trial judge to decide." *Commonwealth v. Possinger*, 264 Pa. Super. 332, 344, 399 A.2d 1077, 1083 (1979).

Whether an exposure was a "substantial factor" in causing an injury is a legal question. "Substantial contributing factor" is a legal formulation, not a scientific one. *See Commonwealth v. Terry*, 513 Pa. 381, 399, 521 A.2d 398, 407 (1987) ("We have adopted a 'substantial factor' standard for legal causation.") (citation omitted); *Harsh v. Petroll*, 584 Pa. 606, 614 n.9, 887 A.2d 209, 213 n.9 (2005) ("[I]n Pennsylvania substantial-factor causation is required to support tort liability."). "Substantial factor" is simply the phrase used by the Restatement (Second) of Torts to describe "legal cause":

> §431. What Constitutes Legal Cause
>
> The actor's negligent conduct is a legal cause of harm to another if (a) his conduct is a *substantial factor* in bringing about the harm, and (b) there is no rule of law relieving the actor from liability because of the manner in which his negligence has resulted in the harm.

Restatement (Second) of Torts §431 (1965) (emphasis added); *see Vattimo v. Lower Bucks Hospital, Inc.*, 502 Pa. 241, 246, 465 A.2d 1231, 1233 (1983) ("Under the analysis of 'legal cause' set forth in the Restatement . . . the question is whether the defendant's conduct was a 'substantial factor' in producing the injury.") (citation omitted).

Any-exposure opinions offer an improper legal conclusion. Any-exposure opinions are, in essence, attempts to instruct the jury on what a "substantial factor" should be, which experts may not do.

Whether any particular exposure is a "substantial contributing factor" is a classic example of a legal conclusion and—when unsupported by the science and the evidentiary record—is improper expert testimony. "Just because a hired expert makes a legal conclusion does not mean that a trial judge has to adopt it if it is not supported by the record and is devoid of common sense." *Gregg*, 596 Pa. at 286, 943 A.2d at 223 (citation and quotation marks omitted). As discussed above, the Supreme Court has recognized any-exposure opinions are not supported by science and they improperly instruct the jury not to consider the strength of the evidence.

Any-exposure opinions not only substitute the expert's unsupported legal conclusion for the judge's legal instruction, they invite the jury to ignore the evidence in the case. An any-exposure opinion "obviates the necessity for plaintiffs to pursue the more conventional route of establishing scientific causation." *Betz*, 615 Pa. at 546, 44 A.3d at 54, *see* 615 Pa. at 539, 44 A.3d at 49 (noting that *Gregg*, 596 Pa. at 291-92, 943 A.2d at 226-27 rejected "the any-exposure opinion as a means to circumvent the frequency-regularity-proximity threshold pertaining to product identification"). When an expert opines that *any* exposure to asbestos should be considered a substantial contributing factor (parroting the legal standard), the expert opinion does not assist the jury in considering the evidence—it invites them to ignore it.

D. Other Courts Agree That Any-Exposure Opinions Are Not Admissible Evidence.

As discussed above, this Court is bound to follow the Pennsylvania Supreme Court. But that Court is not the only one to have found that a causation expert may not rely on an any-exposure causation theory because such an opinion is scientifically and legally incorrect.

Courts around the country share the view that any-exposure opinions are improper in asbestos-exposure cases. For example, the Sixth Circuit, applying a substantial-factor causation standard in an asbestos exposure case, held that "[a]s a matter of law, [the expert's any-exposure] affidavit does not provide a basis for a causation finding as to any particular defendant." *Lindstrom v. A-C Product Liability Trust*, 424 F.3d 488, 493 (6th Cir. 2005) (applying admiralty law). As that court explained, a "holding to the contrary would permit imposition of liability on the manufacturer of any product with which a worker had the briefest of encounters on a single occasion." *Id.* In short, "an expert's opinion that 'every exposure to asbestos, however, slight, was a substantial factor' . . . would render the substantial factor test 'meaningless.'" *Martin v. Cincinnati Gas & Electric Co.*, 561 F.3d 439, 443 (6th Cir. 2009) (quoting *Lindstrom*, 424 F.3d at 493).

The Nevada Supreme Court, following *Gregg*, also held that any-exposure opinions conflict with plaintiffs' burden to establish substantial-factor causation through evidence of actual exposure to each defendant's asbestos-containing products, and sufficient proof of "frequency, regularity, and proximity" of exposure. *Holcomb v. Georgia Pacific LLC*, 289 P.3d 188, 197 (Nev. 2012)

("[T]he courts that adopt the three-factor test of frequency, regularity, and proximity regularly reject the "any" exposure argument. Thus, more than any exposure must be shown.") (citations, including *Gregg*, omitted).[12]

Courts in other toxic exposure cases concur. It is "well-established that an opinion on causation should set forth a plaintiff's exposure to a toxin, that the toxin is capable of causing the particular illness (general causation) and **that plaintiff was exposed to sufficient levels of the toxin to cause the illness** (specific causation)." *Parker v. Mobil Oil Corp.*, 857 N.E.2d 1114, 1120-21 (N.Y. 2006) (citations omitted) (emphasis added).

In *Burleson v. Texas Dep't of Criminal Justice*, 393 F.3d 577 (5th Cir. 2004), the Fifth Circuit held that a causation opinion where the expert "fail[s] to conduct a dose assessment" produces "too great an analytical gap between the data and the opinion proffered." *Id.* at 587 (citation and quotation marks omitted). There, the plaintiff argued that the only important measurement was "the total dose of radiation to the one cell that was transformed into a cancer cell." That dose, of course, could not be determined, but was allegedly "high." *Id.* Because the

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[12] *Accord Borg-Warner Corp. v. Flores*, 232 S.W.3d 765, 773-74 (Tex. 2007); *Butler v. Union Carbide Corp.*, 712 S.E.2d 537, 542 (Ga. App. 2011); *Smith v. Kelly-Moore Paint Co.*, 307 S.W.3d 829 (Tex. App. 2010); *Brooks v. Stone Architecture, P.A.*, 934 So.2d 350, 354-55 (Miss. App. 2006); *McPhee v. Ford Motor Co.*, 2006 WL 2988891, at *4 (Wash. App. Oct. 16, 2006); *Johnson v. Triangle Insulation*, 2003 WL 21769867, at *3 (Ky. App. Aug. 1, 2003); *Moeller v. Garlock Sealing Technologies, LLC*, 660 F.3d 950, 955 (6th Cir. 2011) (applying Kentucky law); *Chism v. W.R. Grace & Co.*, 158 F.3d 988, 992 (8th Cir. 1998) (applying Missouri law); *Smith v. Ford Motor Co.*, 2013 WL 214378, at *4-5 (D. Utah Jan. 18, 2013); *Sweredoski v. Alfa Laval, Inc.*, No. PC2011-1544, 2013 WL 3142893, at *7-8 (R.I. Super. June 13, 2013); *see In re W.R. Grace & Co.*, 355 B.R. 462, 476 (Bankr. D. Del. 2006).

plaintiff's exposure level had not been determined, the court rejected the opinion as mere "*ipse dixit* of the expert." *Id.* (quoting *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997)).

In *Hannan v. Pest Control Services, Inc.*, 734 N.E.2d 674 (Ind. App. 2000), the plaintiffs offered an expert whose "protocol for determining whether a chemical has caused a particular illness did not include an analysis of the exposure levels or the dose of the chemical received by the plaintiffs." *Id.* at 680. This failure alone warranted affirmance of summary judgment because "mere temporal coincidence" of the exposure and the illness is "insufficient to establish a prima facie case on the element of causation." *Id.* at 682-83. Such opinions were properly excluded because the experts' "methods and opinions: (1) were unreliable; (2) were not grounded in scientific knowledge; (3) were not generally accepted in the relevant scientific community, and (4) failed to negate other possible causes of the plaintiffs' illnesses." *Id.* (citations omitted).

Similarly, the Eleventh Circuit affirmed exclusion of an expert opinion claiming that every risk factor was *ipso facto* a "substantial cause." *Guinn v. AstraZeneca Pharmaceuticals LP*, 602 F.3d 1245, 1255 (11th Cir. 2010) (applying Florida law). That court explained that an expert may not "merely conclude that all risk factors for a disease are substantial contributing factors in its development. The fact that exposure to a [substance] may be a risk factor for a disease does not make it an actual cause simply because the disease developed." *Id.* at 1255; *accord Betz*, 615 PA. at 552, 44 A.3d at 57 (rejecting expert's opinion that once a fiber "enters the body through the nose, then it doesn't matter where it came from.

Then everything becomes equal. That is Ellis Island. You are an American then."); *cf.* R.2477a (DuPont testifying, "[W]e're not talking about risk here. Risk is the potential of getting a condition. There is no risk here about potentially getting a condition. The condition was there.").[13]

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[13] *Accord Pluck v. B.P. Oil Pipeline Co.*, 640 F.3d 671, 679 (6th Cir. 2011) (causation opinion by expert who "did not ascertain [the plaintiff's level of . . . exposure" was "pure conjecture") (applying Ohio law); *National Bank of Commerce v. Associated Milk Producers, Inc.*, 191 F.3d 858, 864 (8th Cir. 1999) (that "plaintiffs' experts have no scientific knowledge or information as to the level of [plaintiffs] exposure" supported affirmance of exclusion of testimony) (applying Arkansas law); *Baker v. Chevron USA, Inc.*, 680 F. Supp.2d 865, 885 (S.D. Ohio 2010) ("the no threshold or one-hit theory is not an accepted causation theory"); *Henricksen v. ConocoPhillips Co.*, 605 F. Supp.2d 1142, 1162 (E.D. Wash. 2009) (excluding causation opinion that "did not attempt to quantify dose or even estimate [plaintiff's] level of exposure"); *Cano v. Everest Minerals Corp.*, 362 F. Supp.2d 814, 848 (W.D. Tex. 2005) (the law "require[s] more of an expert witness than simply saying that [any exposure above background levels] of radiation was a substantial contributing factor"); *Wills v. Amerada Hess Corp.*, 2002 WL 140542, at *14 (S.D.N.Y. Jan. 31, 2002) (rejecting expert opinion because "the level of exposure of plaintiff to the toxin in question must be determined," and the expert "admitted" not doing so); *Polaino v. Bayer Corp.*, 122 F. Supp.2d 63, 70 (D. Mass. 2000) (expert's "fundamental error was his failure . . . to estimate through modeling (or any other technique) the dose to which [plaintiff] could have been exposed"); *Wynacht v. Beckman Instruments, Inc.*, 113 F. Supp.2d 1205, 1210 (E.D. Tenn. 2000) ("Key to these investigations is identifying the level of exposure and how it interacts with various organs or body systems ('dose-response'), both in terms of how the chemical is initially distributed through the organism as well as how it ultimately produces a specific ill-effect."); *Sutera v. Perrier Group, Inc.*, 986 F. Supp. 655, 666 (D. Mass. 1997) ("there is no scientific evidence that the linear no-safe threshold analysis is an acceptable scientific technique used by experts in determining causation in an individual instance"); *Mancuso v. Consolidated Edison Co.*, 967 F. Supp. 1437, 1450 (S.D.N.Y. 1997) ("it is improper for an expert to presume that the plaintiff must have somehow been exposed to a high enough dose to exceed the threshold necessary to cause the illness") (quotation marks omitted); *Cuevas v. E.I. DuPont de Nemours & Co.*, 956 F. Supp. 1306, 1312 (S.D. Miss. 1997) ("Toxicology also requires a determination of what dose-response relationship exists between the element in question and the harm that has possibly been caused."); *Cartwright v. Home Depot U.S.A., Inc.*, 936 F. Supp. 900, 904 (M.D. Fla. 1996) (excluding expert testimony on causation because "[n]either expert made any effort to ascertain or even approximate what level of exposure to irritants was created by Plaintiffs' described use of the paints [and] . . . they did not provide any quantification to substantiate in scientific terms what level of exposure would have been sufficient to cause asthma in Plaintiffs or anyone else"); *Whiting v. Boston Edison Co.*, 891 F. Supp. 12, 23 (D.

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The Pennsylvania Supreme Court's holdings in *Howard*, *Betz*, *Summers*, and *Gregg*—rejecting any-exposure opinions as not grounded in science and necessarily at odds with the requirement to provide actual evidence of exposure—are thus squarely in the mainstream of current toxic tort jurisprudence. As cases from jurisdictions around the country demonstrate, any-exposure opinions subvert the substantial-factor causation standard and substitute the expert's diktat on causation for the legal standard.

II. Plaintiff's Expert's Any-Exposure Opinion Should Have Been Excluded.

Dr. DuPont offered an any-exposure opinion—opining that any workplace exposure to asbestos, no matter how small, should be considered a substantial factor in causing Decedent's mesothelioma. As discussed above, such opinions have been rejected by the Supreme Court as fictions at odds with scientific consensus and legal causation principles. The opinion here was even more of a fiction because it was also not grounded in the evidence in the case, fails to establish, or even estimate, both the Decedent's total asbestos exposure and his exposure to asbestos fibers from Lincoln and/or Hobart products. His testimony would be an invitation to the jury to ignore the substantial-factor standard and the case evidence.

Continued from previous page

Mass. 1995) (rejecting causation opinion that "[i]n layman's terms . . . assumes that if a lot of something is bad for you, a little of the same thing, while perhaps not equally bad, must be so in some degree").

A. Dr. DuPont Testified That Any Asbestos Exposure Should Be Considered A Substantial Factor In Causing Mesothelioma.

Dr. DuPont's opinion was undeniably based on the impermissible any-exposure causation theory. He stated repeatedly that any exposure should be considered as contributing (substantially) to the injury. He did not account for the levels of exposure or dose. And he did not account for the comparative levels of exposure from different products.

Dr. DuPont testified that:

> [Plaintiff's counsel:] If I ask you now specifically, to a reasonable degree of medical certainty what caused Mr. Bell and Mr. Nelson to develop their mesothelioma, please tell me your answer?
>
> …
>
> [Dr. DuPont:] The inhalation of fibers above the negligible amount already contained in the environment is the type of exposure that causes this disease, and that **all of the fibers involved in that above the negligible amount, should be considered substantial in their causation. And furthermore, no fibers can be considered innocent or not involved with the understanding we've already talked about. … If they got down [in the lungs] they were involved.**

R.2476a-77a (emphasis added). This is directly contrary to the Supreme Court's specification that "[t]he theory that each and every exposure, no matter how small, is substantially causative of disease may not be relied on" in mesothelioma cases. *Howard*, 78 A.3d at 608.

Dr. DuPont opined repeatedly that there are "no innocent" respirable fibers and that "each" and "all" exposures above the background level should be considered substantial contributing factors in causing mesothelioma. R.2475a.

("there are **no innocent** respirable asbestos fibers"); *id.* ("**all** of the fibers that get inhaled by the individual that contain asbestos . . . are to be felt or considered causative or contributing to the development of a condition"); *id.* ("**all** of the significant exposure that occurred, exposure that got inhaled, would be considered the burden of causation"); R.2477a ("**all** of the fibers involved above the negligible amount, should be considered substantial in their causation. And furthermore, **no fibers can be considered** innocent or not involved."); *id.* ("Q. "Did **each** individual exposure that [Decedent] had above a non-negligible [*sic*] level, were [*sic*] [he] inhaled asbestos dust constitute a substantial and contributing factor to the disease developed? . . . [A.] Yes."). As the panel majority properly concluded, "Dr. DuPont's 'each and every breath' opinion testimony was analogous to that . . . found inadmissible in *Betz*, and . . . the trial court's admission of it is inconsistent with *Betz*." Maj. Op. at 23. Indeed, even the dissenting opinion does not dispute that Dr. DuPont offered an any-exposure opinion. *See* Dissent. Op. at 9-10.

The dissenting opinion misses the mark, however, when it attributes the majority's conclusion that Dr. DuPont provided an any-exposure opinion solely to the inclusion of "testimony to the effect that there are 'no innocent fibers' of asbestos (and similar language)" or the fact that "the expert use[d] the word 'substantial' and 'causation.'" *See* Dissent Op. at 5, 10. The entirety of Dr. DuPont's testimony reveals his reliance on the any-exposure theory, and only that theory.

For example, Dr. DuPont's testimony shows that he did not consider dosage or the levels of exposure from each of the many products Decedent used. He does

not establish any level of exposure to these defendants' products. Rather, he testified that all exposures are equal in causing mesothelioma and that "they are all equally potentially causing the disease." R.2505a. He made no attempt to "separate those exposures out for each individual product," even "assuming every exposure was above a nonnegligible level," because he claimed he could not, ignoring the evidence presented by Defendants that the welding rods could not have released respirable fibers. R.2475a. Dr. DuPont did not even try to estimate an exposure dosage for the Decedent—not for these defendant's products as specified by *Betz*, and not for his asbestos exposure in general. The "reasonably complete occupational history" of asbestos exposure required by *Betz*, 615 Pa. at 549, 44 A.3d at 54, is thus wholly lacking. Dr. DuPont's testimony is also directly contrary to the Supreme Court's specification in *Howard* that "expert witnesses may not ignore or refuse to consider dose as a factor in their opinions." 78 A.3d at 608.

The dissenting opinion suggests that Dr. DuPont did consider dosage, stating that "Dr. DuPont's reference to 'significant asbestos exposure' . . . illustrates that his testimony regarding substantial causation was not contingent upon the validity of an any-exposure theory of substantial causation." Dissent. Op. at 10 n.5. But Dr. DuPont testified repeatedly that **all** workplace exposures of any magnitude were "significant asbestos exposure" and that the only exposures he considered insignificant were background, ambient air exposures. R.2472a-73a; R.2490a ("There's no such thing beyond ambient air as an insignificant asbestos exposure when we're . . . talking about respirable asbestos fibers."). That is a quintessential

any-exposure opinion. *See Betz*, 615 Pa. at 547, 44 A.3d at 54 (describing the impermissible any-exposure opinion there as "a broad-scale opinion on causation applicable to anyone inhaling a single asbestos fiber above background exposure levels"). This is not the "reasoned individualized assessment of a plaintiff's or decedent's exposure history" that *Howard* reiterated is necessary in this case. 78 A.3d at 608. Rather, this is fill-in-the-blank boilerplate. Any expert could change the name and say the same thing about any plaintiff—indeed Dr. DuPont did so here, using the identical "rationale" for another plaintiff, Bell. R.2474a, R.2476a, R.2497a.

Here, there is no record evidence of any exposure dose to the products in question. Decedent's lay testimony that there was dust—though he did not know if it contained respirable asbestos, and did not specify whether it came from asbestos-containing welding rods—is insufficient to establish the presence of respirable asbestos, particularly given the undisputed expert testimony that welding rods contain only encapsulated asbestos and do not release respirable asbestos (R.2475a). *See Nogan v. GAF Corp.*, 1989 WL 161541, at *3 (M.D. Pa. May 22, 1989) (plaintiff's testimony that his work was dusty does not controvert expert testimony that defendant's product does not release respirable asbestos). To the extent the trial court found that Decedent's lay testimony could establish the presence of respirable asbestos based on *Donoughe*, 2007 PA Super 39, 936 A.2d 52, that case should be distinguished or overruled. *Donoughe* relied on cases where it was uncontested that the defendants' products released respirable asbestos, and its holding was based on the admissibility of an any-exposure

opinion. 2007 PA Super 309 at ¶¶10-18, 936 A.2d at 61-64. The view that vague testimony about the presence of dust, coupled with expert testimony that the dust could not contain respirable asbestos, can be used to establish causation cannot be squared with the Supreme Court's subsequent holdings reaffirming the need to consider dosage and exposure evidence. *Howard*, 78 A.3d at 608; *Betz*, 615 Pa. at 553-54, 44 A.3d at 58.

Thus, far from considering dosage and the levels of asbestos exposure from different sources—which he did not know—Dr. DuPont merely opined that any workplace exposure was a "substantial" contributing factor. *See* R.2476a. Indeed, he testified that every single one of the other exposure sources claimed by the Decedent,[14] none of which were supported by dosage information, was also "a substantial contribution" to Decedent's mesothelioma.

In addition to not considering the absolute levels of exposure to asbestos from these defendants' products, Dr. DuPont failed to compare the relative levels of exposure. *See Betz*, 615 Pa. at 546-47, 550 n.36, 550-51, 44 A.3d at 54, 56 n.36, 56-57; *Gregg*, 596 Pa. at 291-92, 943 A.2d at 226-27 (explaining the need to consider comparative dosage). To the contrary, he testified that his opinion would

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[14] In his deposition, Dr. DuPont was asked about: Armstrong Asbestos Pipe Covering; Carey Temp Asbestos Pipe Covering; Fibreboards Pabco Asbestos Pipe Covering; OCF, Kaylo Asbestos Pipe Covering; Eagle-Pitcher Super 66, Asbestos Insulating Cement; Babcock and Wilcox, B & W Boilers; Nu-con 60 firebrick; Plibrico Asbestos Refractory Cement; and US Gypsum, Red Top Asbestos Cement/Joint Compound. R.2495a-96a.

not change if "[i]n addition to the welding rod exposure, [Decedent] had exposure to many other asbestos-containing products." R.2480a.

It is unsurprising that Dr. DuPont offered his prohibited any-exposure opinion because, as a treating physician, he had no expertise in attributing causation to exposures to particular products. *See* R.2505a (Dr. DuPont testifying that, once he knew a patient had been exposed to asbestos, he did not need to find out which products he was exposed to, in order to treat him); *Betz*, 615 Pa. at 548, 44 A.3d at 54 ("Physicians do not assign causation every day. That is not part of clinical practice.") (citation and quotation marks omitted).

Moreover, Dr. DuPont's testimony was grounded in his claim—contrary to scientific consensus and the admonitions of the Supreme Court—that mesothelioma is not a dose-responsive disease. He testified that mesothelioma is a "dose independent" disease, contrasting it with other forms of asbestos disease which he recognized had a dose-response relationship. R.2503a; *see* R.2472a, R.2493a.[15] That flawed scientific understanding was, itself, sufficient grounds to exclude his testimony and it formed the foundation of his improper any-exposure opinion. Three times in five years the Supreme Court has prohibited any-exposure opinions in mesothelioma cases, viewing mesothelioma as a dose-responsive disease. Plaintiff cannot avoid this precedent by the simple expedient of having his

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[15] The dissenting opinion's suggestion that Dr. DuPont opined about concerned "'dose responsive' ailments arising from asbestos exposure," Dissent Op. at 8, while consistent with the Supreme Court' view of mesothelioma, does not square with Dr. DuPont's actual testimony.

expert deny the factual predicate of the Supreme Court's decisions. "It also is not our prerogative to apply different methods of analysis where our Supreme Court has made clear which particular analysis it believes should be applied to a particular situation." *Malinder*, 371 Pa. Super. at 422, 538 A.2d at 513.

B. Dr. DuPont's Opinion Is Inadmissible Because It Failed to Consider Actual Exposure Levels.

As discussed, Plaintiff failed to present any evidence that Decedent was exposed to respirable asbestos fibers from Lincoln or Hobart's welding rods. But, even if Plaintiff ***had*** presented such evidence, that would not make Dr. DuPont's any-exposure opinion admissible or reliable. Even where there is evidence of exposure, the scientific and legal problems with any-exposure opinions remain. Such opinions still contradict the basic scientific premise that the dose makes the poison. And, such opinions still provide improper legal conclusions and invite the jury to ignore the record evidence.

An expert opinion—like the one here—that ignores both actual and comparative exposure levels and testifies that every exposure should be considered a "substantial" causative factor cannot help the jury decide whether or not exposure to a particular manufacturer's product meets the legal substantial-factor standard. In fact, it encourages the jury to ignore any specific evidence of exposure levels entirely. The Supreme Court has decided this issue, more than once, in its post-*Gregg* mesothelioma precedent. "[E]xpert witnesses may not ignore or refuse to consider dose as a factor in their opinions." *Howard*, 78 A.3d at 608.

Such an opinion "obviates the necessity for plaintiffs to pursue the more conventional route of establishing specific causation (for example, by presenting a reasonably complete occupational history and providing some reasonable address of potential sources of exposure other than a particular defendant's product). *Betz*, 615 Pa. at 546-47, 44 A.3d at 54. The problem does not disappear if a plaintiff also presents evidence of exposure that could meet the legal standard if the expert's testimony had been scientifically correct. If a judge correctly instructs the jury that it must find that a particular exposure was a "substantial factor" in causing an injury, and the plaintiff's expert opines incorrectly that the size of the exposure makes no difference,[16] then it is of no help to the jury that the plaintiff also presents evidence of the size of the exposure. The expert has told the jury that the dose does not matter—an incorrect statement of Pennsylvania law. The jury cannot reasonably determine whether the exposure is great enough to be the substantial cause the injury (much less whether it is great enough in comparison to other exposures) when it has been told that the size of the exposure makes no difference.

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[16] As the opinion in support of affirmance by Judge Klein stated in *Summers v. Certainteed Corp.*, 2005 PA Super 302, ¶16, 886 A.2d 240, 244 (2005), *rev'd on other grounds*, 606 Pa. 294, 997 A.2d 1152 (2010), "[s]uppose an expert said that if one took a bucket of water and dumped it into the ocean, that was a 'substantial contributing factor' to the size of the ocean. [the expert's] statement saying every breath is a 'substantial contributing factor' is not accurate." *See Gregg*, 596 Pa. at 226-27, 943 A.2d at 291 (quoting and agreeing with Judge Klein).

CONCLUSION

The Pennsylvania Supreme Court has repeatedly found that any-exposure opinions in mesothelioma cases are inadmissible because they are both scientifically and legally incorrect. There is no longer any novelty to such opinions. Their deficiencies have been consistently recognized in controlling precedent, and are no longer open to question.

Plaintiff's expert opined, based on an any-exposure theory, that Decedent's mesothelioma was substantially caused by asbestos from Lincoln and Hobart's welding rods, despite the lack of any evidence that Decedent was ever exposed to asbestos, let alone how much, from their welding rods. The trial court should have excluded Plaintiff's expert's opinion or granted judgment as a matter of law for Lincoln and Hobart.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE AND SERVICE

I hereby certify that the foregoing brief complies with the word limit of Pennsylvania Rule of Appellate Procedure 2135. Specifically, it contains 9,306 words based on the word count of Microsoft Word 2010, the word processing system used to prepare the brief.

I hereby further certify that on February 14, 2014, I caused two true and correct copies of the foregoing Brief of Appellant to be served by via U.S. Mail upon the following counsel:

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