

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION**

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| TEDDY SCOTT, et al., |) | |
| |) | |
| Plaintiffs, |) | |
| |) | |
| v. |) | Case No. 4:16-CV-1440 HEA |
| |) | |
| DYNO NOBEL, INC., |) | |
| |) | |
| Defendant. |) | |

OPINION, MEMORANDUM AND ORDER

This matter is before the Court on Defendant’s Motion for Summary Judgment, [Doc. No. 131], Defendant’s Motion to Exclude Expert Testimony of Jennifer Morningstar, [Doc. No. 123], Defendant’s Motion to Exclude Expert Testimony of Dr. Carla Sevin, [Doc. No. 125], and Defendant’s Motion to Exclude Expert Testimony of Dr. Eric Norsworthy, [Doc. No. 127].

Defendant’s motion for summary judgment includes three alternate bases for relief: (1) Defendant owed Plaintiffs no legal duty because plaintiff Teddy Scott’s injuries were not reasonably foreseeable; (2) Plaintiffs’ expert failed to use reliable methods for establishing the applicable standard of care; or, (3) Plaintiffs’ experts failed to establish a causal connection between Defendant’s conduct and Plaintiffs’ injuries. The Court previously granted Defendant’s motion for summary judgment based on Defendant’s first basis for relief involving foreseeability. However, the

United States Court of Appeals for the Eighth Circuit held that the question of foreseeability in this case was not appropriate for summary judgment and reversed and remanded for further proceedings before this Court. *Scott v. Dyno Nobel, Inc.*, 967 F.3d 741 (8th Cir. 2020).

This Court did not address Defendant's alternate grounds for relief in its original grant of summary judgment, and the Eighth Circuit expressly declined to consider them on appeal. *Id.* The Court now addresses Defendant's contentions that they are entitled to summary judgment because Plaintiffs' expert failed to use reliable methods for establishing the applicable standard of care or because Plaintiffs' experts failed to establish a causal connection between Defendant's conduct and Plaintiffs' injuries. Defendant's latter argument is based on their position that the expert opinions of Jennifer Morningstar, P.E., Dr. Carla Sevin, and Dr. Eric Norswothry are not admissible, thus the Court considers the accompanying motions to exclude those experts' testimonies herein. Each motion has been fully briefed, including the original briefs on the motions as well as supplemental briefs filed by each party with leave of Court on February 15, 2021. For the reasons set forth below, the motion to exclude the expert testimony of Jennifer Morningstar, P.E. will be denied in part and granted in part, the motion to exclude the expert testimony of Dr. Carla Sevin will be denied, the motion to exclude the expert testimony of Dr. Eric Norswothry pertaining to the cause of Mr.

Scott's pulmonary conditions will be granted, and Defendant's motion for summary judgment will be denied.

Facts and Background

Plaintiffs Teddy and Melanie Scott (collectively, "Plaintiffs") are a married couple; both are citizens of Kentucky. Defendant Dyno Nobel, Inc. ("Dyno Nobel" or "Defendant") is a Delaware corporation with its principal place of business in Utah. Defendant owns and operates a nitric acid manufacturing facility in Louisiana, Missouri (the "Plant"). On March 20, 2015, Plaintiff Teddy Scott was working as a contractor at the Calumet Lubricants Co. ("Calumet") manufacturing facility, which is located south of and adjacent to the Dyno Nobel Plant.

Plaintiffs allege that while working at the neighboring Calumet facility, Mr. Scott was exposed to harmful substances allegedly emitted from a smokestack at Dyno Nobel's Plant. Plaintiffs assert that the harmful substances were oxides of nitrogen ("NOx")¹ which are released from the Plant during nitric acid operations.

About ten times per year, nitric acid operations at the Plant are shut down for maintenance. Defendant must then perform a "start-up" process to recommence nitric acid operations. During start-up, NOx emission levels are higher than they are during normal operations. Defendant's written safety procedures relating to

¹ The parties do not dispute that, as used here, the term "NOx" includes nitric oxide (NO) and nitrogen dioxide (NO₂).

start-ups include evacuating employees from certain areas of the Plant prior to start-up and informing other Dyno Nobel employees and the neighboring Calumet facility when a start-up is commencing.

On March 19, 2015, Defendant began the start-up process, but a mechanical failure around 5:00 a.m. on March 20 shut down the Plant's nitric acid operations. Around 8:30 a.m. on March 20, Defendant began the start-up process again. There was low cloud cover near the Plant. Plaintiffs allege that during start-up, a visible red-orange plume of NO_x and other harmful emissions was released from Defendant's smokestack, "which remained low to the ground and changed directions due to wind, eventually passed over to, above, and onto the Calumet Facility," where Mr. Scott was outside working. Mr. Scott allegedly ingested, inhaled, and was otherwise exposed to NO_x emissions. As a result of this contact with harmful chemicals, Mr. Scott allegedly sustained serious and permanent personal injuries including development of respiratory, pulmonary, and neurological conditions.

In Count I, Plaintiffs allege that Defendant had a duty to manage and operate the Plant in a reasonable manner and in a manner so as to avoid discharge of highly toxic substances from its smokestacks when it was foreseeable that the discharge of those substances could drift into the working environment of workers at the Calumet facility. Plaintiff further alleges that Defendant breached its duty and as a

direct and proximate cause Plaintiff was damaged. In Count II, Melanie Scott alleges that due to Mr. Scott experiencing these injuries, she lost the consortium and services of her husband.

Plaintiffs seek redress for Defendant's alleged negligence (Count I) and loss of consortium (Count II). Defendant seeks summary judgment on both counts. Defendant's argument in support of summary judgment rely on the Court granting Defendant's motions to exclude the scientific testimonies of three of Plaintiff's proffered expert witnesses: Jennifer Morningstar, P.E., Dr. Carla Sevin and Dr. Eric Norsworthy.

Expert Testimony Standard

Federal Rule of Evidence 702 and the standards set forth in *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993), govern the admissibility of expert testimony in federal court. Rule 702 states:

If scientific, technical, or otherwise specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702. "District courts must ensure that all scientific testimony is both reliable and relevant." *Marmo v. Tyson Fresh Meats, Inc.*, 457 F.3d 748, 757 (8th Cir. 2006). "To satisfy the reliability requirement, the proponent of the expert

testimony must show by a preponderance of the evidence both that the expert is qualified to render the opinion and that the methodology underlying his conclusions is scientifically valid.” *Id.* at 757-58. To satisfy the relevance requirement, the proponent must show that the expert's reasoning or methodology was applied properly to the facts at issue. *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 980 (8th Cir. 2010). The Court is entitled to substantial discretion in determining whether expert testimony should be allowed. “There is no single requirement for admissibility as long as the proffer indicates that the expert evidence is reliable and relevant.” *Russell v. Whirlpool Corp.*, 702 F.3d 450, 456-57 (8th Cir. 2012) (quotation omitted). “An expert's opinion should be excluded only if that opinion is so fundamentally unsupported that it can offer no assistance to the jury.” *Synergetics, Inc. v. Hurst*, 477 F.3d 949, 956 (8th Cir. 2007) (internal quotation marks and citation omitted).

The Eighth Circuit has stated that a properly conducted differential medical diagnosis is presumptively admissible under *Daubert*. *Bland v. Verizon Wireless L.L.C.*, 538 F.3d 893, 897 (8th Cir.2008) (citation omitted). See also *Glastetter v. Novartis Pharmaceuticals Corp.*, 252 F.3d 986, 989 (8th Cir. 2001) (citing *Turner v. Iowa Fire Equipment, Co.*, 229 F.3d 1202, 1208 (8th Cir.2000)) (“Because a differential diagnosis is presumptively admissible a district court may exercise its gatekeeping function to exclude only those diagnoses that are scientifically

invalid.”). “A ‘differential diagnosis [is] a technique that identifies the cause of a medical condition by eliminating the likely causes until the most probable cause is isolated.’” *Bland*, at 897 (quoting *Turner*, 229 F.3d at 1208). “In performing a differential diagnosis, a physician begins by ‘ruling in’ all scientifically plausible causes of the plaintiff’s injury. The physician then ‘rules out’ the least plausible causes of injury until the most likely cause remains.” *Kudabeck*, 338 F.3d at 860-61 (quoting *Glastetter*, 252 F.3d at 989). “The final result of a differential diagnosis is the expert’s conclusion that a defendant’s product caused (or did not cause) the plaintiff’s injury.” *Glastetter*, 252 F.3d at 989 (citation omitted).

Summary Judgment Standard

The Court may grant a motion for summary judgment if the movant shows that there is no genuine dispute as to any material fact and that the moving party is entitled to judgment as a matter of law.” Fed.R.Civ.P. 56(a); *Celotex Corp. v. Catrett*, 477 U.S. 317, 322, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). The substantive law determines which facts are critical and which are irrelevant. Only disputes over facts that might affect the outcome will properly preclude summary judgment. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). Summary judgment is not proper if the evidence is such that a reasonable jury could return a verdict for the nonmoving party. *Id.*

A moving party always bears the burden of informing the Court of the basis of its motion. *Celotex*, 477 U.S. at 323. Once the moving party discharges this burden, the nonmoving party must set forth specific facts demonstrating that there is a dispute as to a genuine issue of material fact, not the mere existence of some alleged factual dispute. *Anderson*, 477 U.S. at 247. The nonmoving party may not rest upon mere allegations or denials of its pleadings. *Anderson*, 477 U.S. at 256.

In passing on a motion for summary judgment, the Court must view the facts in the light most favorable to the nonmoving party, and all justifiable inferences are to be drawn in its favor. *Anderson*, 477 U.S. at 255. The Court's function is not to weigh the evidence but to determine whether there is a genuine issue for trial. *Id.* at 249.

In order to survive a motion for summary judgment, “the nonmoving party must substantiate his allegations with sufficient probative evidence [that] would permit a finding in [his] favor based on more than mere speculation, conjecture, or fantasy.” *Barber v. C1 Truck Driver Training, LLC*, 656 F.3d 782, 801 (8th Cir. 2011) (quoting *Putman v. Unity Health Sys.*, 348 F.3d 732, 733–34 (8th Cir. 2003)) (internal quotation omitted).

Discussion

In support of summary judgement, Defendant states that “Plaintiffs lack the requisite expert testimony to go to a jury.” The outcome of Defendant’s motion for

summary judgment relies on the success of their motions to exclude the expert testimony of Ms. Morningstar, Dr. Sevin, and Dr. Norsworthy. As discussed below, the testimony of Ms. Morningstar is mostly admissible, the testimony of Dr. Sevin is admissible, and Dr. Norsworthy's testimony pertaining to the cause of Mr. Scott's pulmonary conditions will be excluded. Defendant's motion for summary judgment will be denied, as Ms. Morningstar's and Dr. Sevin's testimonies contain sufficient probative evidence to permit a causation finding in Plaintiffs' favor.

Motion to Exclude Expert Opinion of Ms. Morningstar

Defendant's motion to exclude Ms. Morningstar's opinion devotes separate arguments to her opinion regarding standard of care, i.e. what an "ordinarily careful" nitric acid manufacturer should have done, and her causation opinion, i.e. medical causation, toxicology, and exposure. Plaintiffs argue that the entirety of Ms. Morningstar's opinion is admissible, and that Ms. Morningstar was unable to perform precise calculations of the chemical concentration of the plume due to Defendant allegedly withholding startup data during the discovery process.

(Plaintiff's motion for sanctions against Defendant for this allegedly wrongful withholding is currently pending before the Court but will not be addressed here.)

For reasons discussed later in this Opinion, Memorandum, and Order, no expert opinion regarding the applicable standard of care is necessary to make a submissible case of negligence here, thus summary judgment does not hinge on the

admissibility of Ms. Morningstar's standard of care opinion. The Court nevertheless addresses Defendant's entire motion to exclude Ms. Morningstar's opinion.

Defendant overarchingly argues that Ms. Morningstar lacks the "knowledge, skill, experience, training, or education" required to be qualified as an expert under Fed. R. Evid. 702. With respect to Ms. Morningstar's opinion that "Dyno failed to use that degree of care that an ordinarily careful nitric acid manufacturer should use under the circumstances," Defendant argues that she has no experience with nitric acid manufacturing or incidents involving harm from oxides of nitrogen, that her opinion is based on her limited experience working in a plastics manufacturing facility instead of scientific literature or data, and that her conclusion that Dyno Nobel breached the relevant standard of care is not based on adequate facts and data. In response, Plaintiff argues that Ms. Morningstar testified about the application of basic engineering standards to situations carrying a risk of harm, that her testimony addresses the general safety measures taken by chemical plants that emit dangerous chemicals, that the allegedly withheld start-up data proves that Dyno Nobel did not carry out its own safety measures, and that her opinion that Dyno Nobel breached its standard of care was based on evidence of record.

The Court first addresses Defendant's general argument regarding Ms. Morningstar's qualifications. In *First Union Nat. Bank v. Benham*, 423 F.3d 855

(8th Cir. 2005), the Eighth Circuit held that the opinion regarding standard of care of an attorney who practiced extensively in the state (Arkansas) and practice area (mergers and acquisitions) at issue was admissible expert testimony even though the attorney's conclusions were based on his own experience, and not the experience of other lawyers. The Eighth Circuit distinguished its holding in *First Union* from *Wheeling Pittsburgh Steel Corp. v. Beelman River Terminals, Inc.*, 254 F.3d 706 (8th Cir. 2001) on the basis that the flood risk management expert at issue in *Wheeling* "sorely lacked the *education, employment, or other practical personal experiences* to testify as an expert specifically regarding safe warehousing practices." *First Union*, 423 F.3d at 862 (quoting *Wheeling*, 254 F.3d at 715) (emphasis original to *First Union*). Meanwhile, the attorney expert in *First Union* properly relied on his employment and practical personal experience in opining on the reasonable diligence and skill used by attorneys. *Id.* at 863.

First Union is instructive here. Ms. Morningstar is clearly a qualified expert in the fields of chemical engineering; she has a B.S. degree in chemical engineering, is a licensed Professional Engineer and has over 15 years of work experience as an engineer or consultant in chemical plants. In addition, Ms. Morningstar has firsthand experience working in a chemical plant that performed startups and emitted dangerous chemicals through a smokestack. She also has an OSHA-based certification in process hazard analysis. Ms. Morningstar testified

that her opinion that Dyno Nobel should have warned Calumet of the startup and informed them about the possible presence of toxic emissions was based on her experience and education and the “underlying industry norm of the right to know,” that is, the right for employees to know of hazards in their workplaces.

Defendant’s argument that Ms. Morningstar “ignored” certain facts is overstatement. For example, Defendant contends that Ms. Morningstar erred in stating that “[i]t was Dyno’s practice to start up to AOP outside of normal workday hours” because Defendant’s prior nighttime startups were simply done for Defendant’s convenience. This is a distinction without a difference. The Court finds that Ms. Morningstar’s opinion on Defendant’s duty of care was based on available facts.

In any case, the potential limitations of Ms. Morningstar’s reasoning and conclusions were well explored by Defendant during her deposition and may be raised at trial on cross-examination. Ms. Morningstar’s opinion regarding Defendant’s duty of care is admissible up to the point that she opines on an ordinarily careful nitric acid manufacturer. Ms. Morningstar admittedly has no experience working with nitric acid. The term “ordinarily careful nitric acid manufacturer” must be replaced with language representing those characteristics of Defendant’s operation which are in the scope of Ms. Morningstar’s expertise and

upon which her opinion is based – for example, “ordinarily careful chemical plant which emits higher-than-normal toxic chemicals during a startup process.”

Proceeding to Ms. Morningstar’s opinion regarding causation, Defendant argues that Ms. Morningstar is not qualified to offer opinions regarding either medical causation and toxicology or the amount of chemical to which Mr. Scott was exposed. For the latter contention, Defendant states that Ms. Morningstar lacks expertise in weather, gas dispersion, or air modeling, which it claims are necessary to determine the amount of chemical to which Mr. Scott was exposed.

Regarding the contents and behavior of the plume, Ms. Morningstar clearly possesses the knowledge and expertise to describe what chemical reactions take place at each step of the nitric acid manufacturing process. Relatedly, she possesses the knowledge to opine on the density of a NO_x versus air that would cause a cloud with a high concentration to “sink” to a lower level. Even if Ms. Morningstar failed to or cannot calculate the NO_x concentration of the plume as it left the stack (which is a subject of Plaintiffs’ motion for sanctions against Defendant for allegedly withholding startup data during discovery,) there is adequate foundation for Ms. Morningstar to offer her opinion, based on her knowledge of chemical properties and the eyewitness accounts, that the cloud seen

by witnesses sank from Defendant's smoke stack during startup.² As to the amount of chemical to which Mr. Scott was exposed, Ms. Morningstar provided the scientific literature upon which she based her opinion that a visible NO_x cloud would have at least a 50 ppm concentration. Ms. Morningstar's opinions about the plume are reliable and relevant.

Further regarding causation, Defendant argues that Ms. Morningstar lacks support for her opinions that "(1) Mr. Scott was exposed to a sufficient amount of a harmful substance to cause a disease, (2) that whatever chemical Mr. Scott was exposed to, it was capable of causing any problems, and (3) that any problems reported by Mr. Scott were the result of exposure to a chemical and not some other source."

² The Eighth Circuit found the following facts to preclude summary judgment on the issue of foreseeability. These facts are relevant to the plume's movement and to the credibility of the eyewitnesses:

[I]t is undisputed that NO_x emissions are denser than air. While Dyno's expert opined that NO_x emissions rise from the smokestack because the stack heats them to 150 degrees Fahrenheit, there is evidence that the stack temperature at the time of the emissions at issue was only 75 to 105 degrees. There is also evidence that Dyno's unsuccessful startup on the day in question, its failure to purge excess NO_x from the system before restarting, and the "stagnant" weather conditions that were present could have created higher concentrations, making it more likely that the denser NO_x gas would sink upon expulsion from the exhaust stack.

Second, there is evidence that the weather conditions alone could have created some probability the NO_x emissions would sink below normal air and endanger persons at the Calumet work site. There is evidence the wind was blowing in that direction at the time of the startup, and some witnesses observed low-hanging cloud cover and foggy conditions that morning. Dyno argued its 2018 air modeling study showed that a plume of emissions would have dispersed to non-dangerous levels by the time it reached Calumet. But Dyno's plant manager acknowledged that cloud cover could prevent the NO_x emissions from rising.

Scott, 967 F.3d at 747.

Ms. Morningstar based her opinion that Mr. Scott was exposed to a sufficient amount of NO_x to cause his injuries on the depositions of eyewitnesses who report seeing visible, colored gas drifting down from the area of Defendant's Plant and that the colored gas enveloped Mr. Scott. She considered these accounts along with scientific publications regarding the toxicity and visibility of NO_x at various concentrations (ppm) and exposure times. Defendant argues the eyewitness accounts vary widely, and thus Ms. Morningstar's estimation of the concentration of NO_x to which Mr. Scott was exposed is unreliable. However, Defendant fails to identify any eyewitness account or other evidence directly contradicting that a visible cloud enveloped Mr. Scott. The Eighth Circuit has held that a toxic tort plaintiff does not need to produce "a mathematically precise table equating levels of exposure with levels of harm" in order to show that he was exposed to a toxic level of a chemical, but only "evidence from which a reasonable person could conclude" that the plaintiff's exposure probably caused his injuries. *Bonner v. ISP Techs., Inc.*, 259 F.3d 924, 928 (8th Cir. 2001) (quoting *Bednar v. Bassett Furniture Mfg. Co.*, 147 F.3d 737, 740 (8th Cir.1998)) (internal quotation marks omitted). Ms. Morningstar's opinion satisfies this standard.

Defendant contends that Ms. Morningstar has no basis for opining that the NO₂ to which Mr. Scott was allegedly exposed is capable of causing his injuries. Defendant asserts that Ms. Morningstar did not rely on and could not cite any

epidemiological studies that link NO₂ exposure and Mr. Scott's injuries. However, the case quoted by Defendant does not stand for epidemiological studies being required to show a causal relationship between a chemical and a symptom or disease to the exclusion of all other evidence. See *Conde v. Velsicol Chem. Corp.*, 804 F.Supp. 972, 1025-26 (S.D. Ohio 1992), *aff'd*, 24 F.3d 809 (6th Cir. 1994) (noting that “[e]pidemiologic studies are the *primary* generally accepted methodology for demonstrating a causal relationship between a chemical compound and a set of symptoms or disease.” (emphasis added)).

Although Ms. Morningstar stated in her deposition that she could only recall relying on documents from Dyno Nobel and the EPA about NO_x toxicity in humans, she attached to her initial expert report an appendix from a study published by the National Center for Biotechnology Information (NCBI) of the National Institute of Health describing known effects of NO₂ on humans. The NCBI publication includes full citations to peer-reviewed journals and specifically states that “[d]ata on the qualitative and quantitative toxicity of NO₂ in humans comes from reports of accidental exposures, clinical studies, and epidemiological studies” The NCBI study, as well as the NOAA.gov “CAMEO Chemical” NO₂ information cited by Ms. Morningstar include information about possible symptoms of NO₂ exposure, including coughing, shortness of breath, severe irritation of the skin and mucous membranes, and other symptoms reported by Mr.

Scott. Ms. Morningstar's opinion about the symptoms of NO₂ exposure that are identified by the scientific literature and Defendant's own internal documents is therefore reliable and relevant and will not be excluded.

Defendant's third contention is that Ms. Morningstar cannot opine that NO₂ caused Mr. Scott's injuries, because she is not a medical doctor and has not examined Mr. Scott or his medical records. Plaintiffs reply acknowledging that Ms. Morningstar is not a physician and will not be diagnosing Mr. Scott's injuries. The Court accepts this acknowledgement, with the caveat that Ms. Morningstar may not testify regarding Mr. Scott's specific injuries, as she admittedly has no specialized knowledge in that area.

Accordingly, Ms. Morningstar's opinion is admissible subject to the following exclusions: (1) relating to Defendant's duty of care, the term "nitric acid manufacturer" must be replaced with language representing those characteristics of Defendant's operation which are in the scope of Ms. Morningstar's expertise and upon which her opinion is based – for example, "ordinarily careful chemical plant which emits higher-than-normal toxic chemicals during a startup process," and (2) Ms. Morningstar may not testify regarding Mr. Scott's specific injuries.

Motion to Exclude Expert Opinion of Dr. Sevin

Defendant moves to exclude the opinion of Dr. Sevin, a physician specializing in pulmonology who treated Mr. Scott. Defendants argue that Dr.

Sevin cannot opine as to causation because she did not perform a reliable differential diagnosis. For the reasons below, Dr. Sevin’s medical causation opinion will not be excluded.

The Eighth Circuit has held that the medical community and the legal community have different understandings of the meaning of the term “differential diagnosis.” *Turner v. Iowa Fire Equip. Co.*, 229 F.3d 1202, 1208 (8th Cir. 2000). While in the medical community “differential diagnosis” means “a systematic comparison of symptoms to determine which of two or more *conditions* is the one from which a patient is suffering,” *Id.* (citing *Stedman's Medical Dictionary* 474 (26th ed. 1995)) (emphasis in original), in the legal context, “differential diagnosis” means a technique to identify the *cause* of a medical condition by eliminating the likely causes until the most probable cause is isolated, *Id.* (citing *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 262–63 (4th Cir. 1999)) (emphasis added).

Defendants first argue that Dr. Sevin’s opinion is not a sufficient differential diagnosis for legal purposes because “the legal standard for a reliable differential diagnosis is more demanding than the way many treating physicians conduct their differential diagnoses for treatment purposes.” Defendants also contend that Dr. Sevin’s diagnosis is not a reliable differential diagnosis because Dr. Sevin cared more about treatment of Mr. Scott’s injuries than discovering the cause of them,

and because she accepted Mr. Scott's report that his symptoms arose after he was exposed to NO₂. Relatedly, Defendant argues that Dr. Sevin had no valid basis for "ruling in" NO_x or Nitric Acid as a cause of Mr. Scott's injuries and failed to systematically "rule out" other possible causes of Mr. Scott's symptoms.

The Court rejects Defendant's position insofar as it suggests that a treating physician is incapable of providing a legally reliable differential diagnosis. The opinion of the treating physician in *Turner v. Iowa Fire* was properly excluded not because the physician was a treating physician, but because the physician did not rely on any scientific literature in "ruling in" baking soda as the cause of the plaintiff's respiratory disease *and* because he did not scientifically "rule out" other possible causes of the plaintiff's respiratory disease.

Here, Dr. Sevin testified under oath that she had performed research of medical literature tying nitric acid and NO_x to reactive airways dysfunction syndrome ("RADS") to rule in NO_x as a cause of Mr. Scott's injuries. She also ruled in NO_x as the cause of Mr. Scott's injuries due to the presentation of his respiratory symptoms immediately after he was enveloped by a reported NO_x cloud. Defendant attempts to undermine Dr. Sevin's reliance on the temporal connection between the chemical exposure and presentation of Mr. Scott's symptoms as "self-reported" by Mr. Scott. In fact, Dr. Sevin testified that she considered others who were exposed to the cloud and also developed symptoms as

reason to rule in NO_x exposure: “[I]f there is a [] plausible chemical in the air in large enough concentrations and – especially if more than one person is having symptoms, that's very – that is basically diagnostic of [] an irritant inhalation.”

Defendant relies on *Glastetter* for its contention that a temporal association between exposure to a chemical and an injury is not scientifically valid proof of causation. In that case, concerning a pharmaceutical drug, the Eighth Circuit held that the plaintiff's expert physicians were not admissible because, among other things, the experts relied heavily on case reports to opine that the drug caused the type of injury in question. The Eighth Circuit wrote that case reports were not scientifically valid evidence of causation because they “are simply a doctor's account of a particular patient's reaction to a drug or other stimulus, accompanied by a description of the relevant surrounding circumstances. Case reports make little attempt to screen out alternative causes for a patient's condition[, t]hey frequently lack analysis[, a]nd they often omit relevant facts about the patient's condition.” *Glastetter*, 252 F.3d at 989-90. Here, it is not disputed that NO_x exposure can cause pulmonary symptoms and injury the likes of which Mr. Scott claims he experienced. Additionally, Mr. Scott's symptoms are alleged to have presented immediately after, and only after, he was enveloped by a chemical cloud. The temporal connection is relevant to Dr. Sevin's causation determination, specifically, to her ruling in NO_x as a possible cause of Defendant's injuries.

Dr. Sevin also adequately “ruled out” other possible causes of Mr. Scott’s injuries. The Eighth Circuit has “consistently ruled that experts are not required to rule out all possible causes when performing the differential etiology analysis.” *Johnson v. Mead Johnson & Co., LLC*, 754 F.3d 557, 563 (8th Cir. 2014). “And, a differential expert opinion can be reliable even ‘with less than full information.’” *Id.* at 564 (quoting *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 759 (3d Cir.1994)). “Instead, such considerations go to the weight to be given the testimony by the factfinder, not its admissibility.” *Id.*

Dr. Sevin testified about ruling out other possible causes of Mr. Scott’s injuries. In doing so, Dr. Sevin relied on Mr. Scott’s health history and records and Mr. Scott’s statements regarding the incident at Calumet. For example, Dr. Sevin ruled out acid reflux by treating the acid reflux and observing that it did not improve his laryngospasm. She ruled out sleep apnea because Mr. Scott’s laryngospasm is more severe than what would result from common untreated sleep apnea. Dr. Sevin struck smoking-related lung diseases from the differential diagnoses because pulmonary functioning tests and imaging resulted in no findings of COPD. Even Defendant’s argument that Mr. Scott lied about his smoking habit to Dr. Sevin does not support exclusion of Dr. Sevin’s testimony, especially given that Dr. Sevin indicated that Mr. Scott did not have preexisting lung conditions and

that there were no COPD findings, where COPD is the main lung disease caused by smoking.

Dr. Sevin also testified that she considered the possibility of long-term, low-level exposure to the chemicals at a synthetic lubricant plant (i.e. Calumet,) but dismissed it because Mr. Scott did not show symptoms until the date of the alleged incident. Still, Defendant complains that Dr. Sevin did not rule out acute exposure to a chemical at Calumet. This argument is unpersuasive given that Dr. Sevin testified that Mr. Scott's symptoms only tend to occur when there is a large volume irritant inhalation, and that Mr. Scott had no other history of acute chemical inhalation events.

Defendant further argues that Dr. Sevin's opinion should be excluded because she relied on the assumption that Mr. Scott was exposed to a dangerous level of NO_x in forming her opinion and during her deposition. No cases cited by Defendant state that a physician may not operate under the assumption that a plaintiff was exposed to a dangerous level of a certain substance. As discussed above regarding Ms. Morningstar's opinion, Plaintiffs have presented sufficient, reliable evidence from which a reasonable person could conclude that Mr. Scott's chemical exposure probably caused his injuries. A reasonable jury is capable of understanding that Dr. Sevin's opinion is predicated on a certain level of exposure to NO_x. A reasonable jury that credits Defendant's expert's opinion regarding

exposure and discounts Dr. Morningstar's opinion on that matter is capable of wholly discounting Dr. Sevin's opinion based on their finding regarding exposure.

Motion to Exclude Expert Opinion of Dr. Norsworthy

Many of the arguments raised by Defendant in its motion to exclude Dr. Sevin's testimony are also raised in the motion to exclude Dr. Eric Norsworthy's testimony, namely arguments about legally acceptable differential diagnoses. Unlike Dr. Sevin's opinion, Dr. Norsworthy's opinion regarding the cause of Mr. Scott's pulmonary issues lacks the reliability to render it admissible.

Dr. Norsworthy's causation opinion is inadmissible for his failure to properly consider and rule out other possible causes of Mr. Scott's injuries. Specifically, Dr. Norsworthy testified that he did not consider an accidental exposure to any other chemicals and only ruled out smoking because Mr. Scott reported no wheezing prior to the incident which is the subject of this litigation. Dr. Norsworthy also testified that a history of working at industrial sites or a history of heavy smoking even with no wheezing present could be relevant to a causation determination as to Ms. Scott's pulmonary conditions. Although a differential diagnosis can be reliable without full information, and even though Dr. Sevin did rule out these causes, Dr. Norsworthy's failure to consider and rule out other plausible causes of Mr. Scott's pulmonary disease requires exclusion of his opinion. Because Defendant only seeks to exclude Dr. Norsworthy's opinion on

the subject of causation of Mr. Scott's pulmonary conditions, the Court notes that the remainder of Dr. Norsworthy's opinion is untouched by this ruling.

Motion for Summary Judgment

Defendant's motion for summary judgment contains two main arguments: first, that Plaintiffs are required to, but cannot, establish the relevant standard of care for their negligence action against Defendant; and second, that Plaintiffs have no admissible causation evidence. As mentioned above, the latter contention is specifically premised on Defendant's assertion that the opinions of Ms. Morningstar, Dr. Sevin, and Dr. Norsworthy are all inadmissible.

Standard of Care

Defendant argues that Plaintiffs cannot establish the relevant standard of care that an "ordinarily careful nitric acid manufacturer" should use under the circumstances because Ms. Morningstar's opinion on that matter is not admissible under the standard for expert scientific testimony. Thus, Defendant's argue, Plaintiffs have failed to establish a professional standard of care to submit the case to a jury. This argument is unavailing because a plaintiff is not required to establish such a standard of care in a general negligence action.

"In any action for negligence, a plaintiff must establish the defendant owed a duty of care to the plaintiff, the defendant breached that duty, and the defendant's breach proximately caused the plaintiff's injury." *Wieland v. Owner-Operator*

Servs., Inc., 540 S.W.3d 845, 848 (Mo. 2018). In their Complaint, Plaintiffs allege that Defendant “had the duty to use that degree of care that an ordinarily careful person would use under the same or similar circumstances when managing and operating the Plant.”

For its contention that expert testimony is essential to establish a “standard of care,” Defendant cites only cases involving professional negligence. “An action for professional negligence exists where, in the context of the contractual relationship, the professional negligently discharges the duties arising from that relationship.” *Rosemann v. Sigillito*, 956 F. Supp. 2d 1082, 1109 (E.D. Mo. 2013) (citing *Lumbermens Mut. Cas. Co. v. Thornton*, 92 S.W.3d 259, 265 (Mo. App. 2002)). While expert testimony is generally required to establish the “degree of skill and care ordinarily used under the same or similar circumstances by members of [a defendant’s] profession” in professional negligence cases, *Stalcup v. Orthotic & Prosthetic Lab, Inc.*, 989 S.W.2d 654, 657 (Mo. App. 1999), ordinary negligence cases have no such threshold requirement.

The instant case does not sound in professional negligence. Therefore, no “standard of care” as contemplated by Defendant’s motion for summary judgment is required for Plaintiffs to make a submissible case to the jury. Defendant’s motion for summary judgment will be denied as to their claim that Plaintiffs have not established an applicable standard of care.

Causation

“To prove causation in a toxic tort case, a plaintiff must show both that the alleged toxin is capable of causing injuries like that suffered by the plaintiff in human beings subjected to the same level of exposure as the plaintiff, and that the toxin was the cause of the plaintiff's injury.” *Bonner v. ISP Techs., Inc.*, 259 F.3d 924, 928 (8th Cir. 2001). In a toxic tort action, establishing causation often involves evidence of multiple factual predicates, including:

(1) an exposure to an identified harmful substance significant enough to activate disease; (2) a demonstrable relationship between the substance and biologic disease; (3) diagnosis of such disease in the plaintiff; (4) expert opinion that the disease found in plaintiff is consistent with exposure to the harmful substance; (5) defendant was responsible for the etiologic agent of the disease diagnosed in plaintiff.

Brown for Estate of Kruse v. Seven Trails Inv'rs, LLC, 456 S.W.3d 864, 869 (Mo. App. 2014) (quoting *Lewis v. FAG Bearings Corp.*, 5 S.W.3d 579, 585 (Mo. App. 1999)).

Defendant argues it is entitled to summary judgment on the issue of causation because Ms. Morningstar lacks a sufficient basis for opining that Mr. Scott was exposed to a sufficient amount of a harmful substance to cause a disease, and because Mr. Scott's treating physicians (Dr. Sevin and Dr. Norsworthy) did not properly rule in NO_x exposure or rule out all other possible causes of Mr.

Scott's injuries and based their causation opinions only on the temporal association between the alleged NOx exposure and Mr. Scott's symptoms.

As discussed above, Ms. Morningstar's opinion regarding the concentration of NOx in the cloud that allegedly enveloped Mr. Scott is admissible. Ms. Morningstar's analysis based on the eyewitness accounts of the cloud's visibility and scientific literature about the concentration of visible NOx clouds is reliable and admissible. It is the duty of the jury at trial to weigh the testimony of the eyewitnesses who were at Calumet and the Dyno Nobel Plant on March 20, 2015. Battling experts and varied eyewitnesses establish genuine disputes of fact that precludes a grant of summary judgment regarding the level of NOx exposure.

As discussed regarding her causation opinion, Dr. Sevin properly ruled in NOx exposure as a possible cause of Mr. Scott's pulmonary symptoms, and properly ruled out other plausible causes. (Of course, Dr. Norsworthy's opinion was found inadmissible for failing to rule out other causes.) Dr. Sevin also properly relied on the near-immediate temporal proximity between the chemical exposure and presentation of Mr. Scott's symptoms in ruling in NOx exposure as a possible cause of those symptoms. Moreover, her causation opinion was not based solely on the temporal proximity, but also on research of medical literature tying nitric acid and NOx to RADS. Thus, even without the causation opinion of Dr. Norsworthy,

Plaintiffs have presented admissible expert evidence that would permit a finding in that NO_x is the cause of Mr. Scott's pulmonary conditions.

The admissibility of Ms. Morningstar's causation opinion and Dr. Sevin's medical causation opinion are fatal to Defendant's motion for summary judgment insofar as Defendant argues that Plaintiffs cannot prove causation. Additionally, because Plaintiffs need not establish a professional standard of care to submit their case to a jury, summary judgment is not warranted on that issue.

Conclusion

Based on the foregoing, the opinion Dr. Sevin will not be excluded. The opinion of Ms. Morningstar will only be excluded in that when referring to Defendant's duty of care, the term "nitric acid manufacturer" must be replaced with language representing those characteristics of Defendant's operation which are in the scope of Ms. Morningstar's expertise and upon which her opinion is based, and that Ms. Morningstar may not testify regarding Mr. Scott's specific injuries. Dr. Norsworthy's opinion pertaining to the cause of Mr. Scott's pulmonary conditions will be excluded. Finally, summary judgment is precluded because genuine issues of material fact exist as to the causation element of Plaintiffs' negligence claim.

Accordingly,

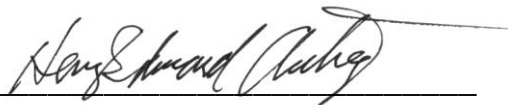
IT IS HEREBY ORDERED that Defendant’s Motion for Summary Judgment [Doc. No. 131] is **DENIED**.

IT IS FURTHER ORDERED that Defendant’s Motion to Exclude Expert Testimony of Jennifer Morningstar [Doc. No. 123] is **DENIED** in part and **GRANTED** in part, namely: (1) relating to Defendant’s duty of care, the term “nitric acid manufacturer” must be replaced with language representing those characteristics of Defendant’s operation which are in the scope of Ms. Morningstar’s expertise and upon which her opinion is based, and (2) Ms. Morningstar may not testify regarding Mr. Scott’s specific injuries.

IT IS FURTHER ORDERED that Defendant’s Motion to Exclude Expert Testimony of Dr. Carla Sevin [Doc. No. 125] is **DENIED**.

IT IS FURTHER ORDERED that Defendant’s Motion to Exclude Expert Testimony of Dr. Eric Norsworthy pertaining to the cause of Mr. Scott’s pulmonary conditions [Doc. No. 127] is **GRANTED**.

Dated this 4th day of May, 2021.



HENRY EDWARD AUTREY
UNITED STATES DISTRICT JUDGE