

Trickett v. Ochs, No. 267-11-00 Ancv (Reiss, J., Mar. 10, 2005)

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STATE OF VERMONT  
ADDISON COUNTY, SS.

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| GEORGE TRICKETT and | ) |                           |
| CAROL TRICKETT      | ) | Addison Superior Court    |
|                     | ) |                           |
| v.                  | ) | Docket No. 267-11-00 Ancv |
|                     | ) |                           |
| PETER OCHS and      | ) |                           |
| CARLA OCHS          | ) |                           |
|                     | ) |                           |

**OPINION AND ORDER REGARDING ADMISSIBILITY OF PROPOSED  
EXPERT TESTIMONY**

This matter came before the court on February 16, 2005, for an evidentiary hearing on Defendants’ motion in limine. Defendants request the court to exclude expert witness testimony from Craig Stead, P.E., pursuant to Rule 702 of the Vermont Rules of Evidence.

Plaintiffs have brought an action against Defendants for, among other claims, nuisance and trespass resulting from Defendants’ farm operation near Plaintiffs’ home.<sup>1</sup> Plaintiffs allege that this operation includes the use of tractors and trucks that emit diesel fumes onto Plaintiffs’ property and into Plaintiffs’ home, which is approximately 130 feet from the farm’s packing shed. Plaintiffs allege that, while in their home, they smell these fumes five to seven times a day, seven days a week, during all seasons of the year. Accordingly, they assert that the diesel fumes interfere with their use and enjoyment of

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<sup>1</sup> Plaintiffs have also pled emotional distress claims, but they indicated to the court that they do not intend to pursue these.

the property and thus constitute a nuisance. They contend that the particulate in the fumes constitutes a trespass.

Plaintiffs seek to introduce testimony from Mr. Stead to demonstrate that the alleged diesel fumes pose health hazards. Mr. Stead has opined that the diesel tractors that idle near the apple packing operation produce diesel smoke and large amounts of diesel soot. He intends to testify about the composition and toxicity of this diesel exhaust. He also intends to testify that this exhaust has been classified as a toxic air contaminant and has been found to cause numerous adverse health effects, including eye, nose, and throat irritation; cough; headache; light-headedness; nausea; allergies and infection; aggravated chronic respiratory symptoms; and increased asthma attacks. Mr. Stead will testify that if the smell of diesel is present in a home, there is an elevated exposure to the diesel exhaust by individuals occupying the home. Therefore, he intends to offer the opinion that Plaintiffs, because they smell diesel exhaust in their home, face an unreasonable health risk because of Defendants' farm operation.

Mr. Stead is a professional engineer, and his work focuses on waste water treatment. His education includes a Bachelor's Degree and a Master's Degree in chemical engineering, as well as a Master's Degree in Business Administration. Mr. Stead testified that he studied petroleum refining as part of his degree in chemical engineering. His alleged expertise concerning diesel fumes is the result of his examination of scientific literature on the subject since 1992. Mr. Stead, whose self-study was prompted by his own asthma, claims to have amassed a substantial body of research, including articles from several medical and scientific journals, as well as books and technical papers. This literature, which was not introduced into evidence, allegedly concerns the composition and toxicity of diesel exhaust and the health effects of diesel fuel and exhaust, including animal model studies and human epidemiological studies. He also alleges that he has communicated with individuals involved with diesel exhaust research.

Mr. Stead testified that part of his theory regarding the particulate concentrations in Plaintiffs' home is that the topography of the surrounding land creates a "bowl effect," whereby diesel fumes settle into the area surrounding Plaintiffs' house. Mr. Stead concedes he is not an expert in geography, topography, meteorology, or any other related field, and he testified that he did not conduct any studies of the "bowl effect" phenomena. He testified that he simply observed the land contours.

Mr. Stead visited Plaintiffs' property on one occasion for three to four hours. He did not smell any diesel fumes at the time and did not take any air samples. He testified that there is equipment capable of measuring diesel particulate but its cost is prohibitive. He has not conducted any studies or proffered any tests but bases his testimony on three photos taken on a single day in January 2004 in which horizontal plumes of diesel fumes

were allegedly visible. These photos were not introduced into evidence at the hearing. Mr. Stead also watched a video that Plaintiffs had taken; this video was also not introduced into evidence.

Mr. Stead was uncertain as to the number of diesel tractors that visited Plaintiffs' property on a weekly basis, noting that it appears to be between four and seven diesel trucks at a time, although it may be 15 trucks a week. He testified that it did not matter because "the odor may be from one lousy tractor."

Mr. Stead also testified that Plaintiffs' exposure is 10 to 20 times higher than common exposure, but he did not provide a basis for this estimate.

Mr. Stead has no medical training or experience, and he does not intend to testify regarding any of Plaintiffs' alleged health conditions.

Mr. Stead testified that he has voiced his concerns regarding the health effects of diesel exhaust before several legislative and regulatory bodies, including the U.S. House of Representatives Committee on Government Reform and Oversight, the Environmental Protection Agency, the Presidential Advisory Committee on Gulf War Veterans' Illnesses, and the U.S. Centers for Disease Control and Prevention. He was not retained as an expert witness in any of these proceedings, he was not compensated for his testimony or services, and none of the identified regulatory bodies or agencies required him to establish any qualifications similar to those required by Rule 702 of the Vermont Rules of Evidence as a condition precedent to testifying.

Mr. Stead has also consulted with certain organizations studying petroleum toxicology. He consulted with the Agency for Toxic Substances and Disease Registry (an agency of the U.S. Department of Health and Human Services) on a toxicology profile of petroleum, but he was not paid for his services. He also produced a 10-page report on petroleum toxicology for Region IX of the Environmental Protection Agency in San Francisco. The EPA paid Mr. Stead \$5700 for his services.

Mr. Stead alleges that he testified as an expert witness in a single proceeding before the Vermont District II Environmental Commission and in a single proceeding before the Vermont Environmental Board. The court finds that in neither instance was Mr. Stead accorded expert witness status and permitted to testify in that capacity.<sup>2</sup>

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<sup>2</sup> The court notes that Mr. Stead was denied party status as an individual who could materially assist the Environmental Board in *In re Northeast Cooperatives & L & S Assocs.*, Land Use Permit No. 2W0434-11-EB, slip op. at 3-4 (Vt. Env'tl. Bd. Jan. 29, 1999). In the other proceeding, there is no mention of Mr. Stead in the decision he cites as evidence that he was permitted to testify as an expert witness before the District II

Instead, he was an interested party advancing his own rights and interests in these proceedings. Accordingly, the court finds that no court or regulatory agency has previously permitted Mr. Stead to testify as an expert witness.

Rule 702 of the Vermont Rules of Evidence provides that:

[i]f scientific, technical, or other 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.

In applying Rule 702, the court is guided by the standards set forth in *Daubert v. Merrill Dow Pharm., Inc.*, 509 U.S. 579 (1993), and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). See *USGen New England, Inc. v. Town of Rockingham*, 2004 VT 90, ¶ 18. Under *Daubert*, the court provides a “gatekeeper function to determine that novel scientific or technical evidence is sufficiently reliable and relevant before it is admissible.” *State v. Kinney*, 171 Vt. 239, 248 (2000). *Daubert*’s gatekeeping objective is thus “to make certain that an expert . . . employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Kumho Tire*, 526 U.S. at 152. Accordingly, before a witness is permitted to offer an expert scientific opinion, the court must find his or her testimony both reliable and relevant. *USGen New England*, 2004 VT 90, ¶ 15.

“Reliability is assured if the expert testimony is supported by ‘scientific knowledge,’ defined as information that is more than a subjective belief or unsupported speculation, and that is grounded in the methods and procedures of science.” *State v. Streich*, 163 Vt. 331, 343 (1995). *Daubert* provides four nonexclusive factors to assist a trial court in determining whether an expert opinion is “sufficiently rooted in ‘scientific knowledge’ to be admissible”: (1) whether the expert’s theory or technique is capable of being tested, (2) whether the theory or technique has been subjected to peer review and publication, (3) whether the theory or technique has a known or potential rate of error, and (4) whether the theory or technique has been generally accepted in the scientific community. *Id.* at 343 (citing *Daubert*, 509 U.S. at 593–94). “‘*Daubert*’s list of specific factors neither necessarily nor exclusively applies to all experts or in every case.’” *Kinney*, 171 Vt. at 250 n.2 (quoting *Kumho Tire*, 526 U.S. at 141).

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Environmental Commission . See *In re L & S Assocs.*, Land Use Permit No. 2W0434-8-EB, slip op. at 36, ¶ 119 (Vt. Env’tl. Bd. Sept. 21, 1993).

“Relevancy . . . is essentially determined by considering if the expert’s testimony ‘will assist the trier of fact to understand or determine a fact in issue.’” *USGen New England*, 2004 VT 90, ¶ 16 (quoting *Daubert*, 509 U.S. at 592). “[S]peculative expert testimony is irrelevant and is not admissible.” *Everett v. Town of Bristol*, 164 Vt. 638, 639 (1996) (mem.).

From Mr. Stead’s deposition and hearing testimony, as well as documentary evidence that the parties submitted at the hearing, the court finds that Mr. Stead’s testimony is not sufficiently rooted in scientific knowledge to be reliable for the following reasons. First, Mr. Stead’s knowledge of the effects of diesel fume pollution on human health has been acquired purely through informal self-study. He has never testified as an expert witness in this capacity under V.R.E. 702 or a similar rule or standard, and his theories have never been tested. In particular, his theory about the correlation between diesel fume odors and the actual particulate concentration levels has not been tested. Indeed, Mr. Stead conceded that no specific studies recognize such a correlation. Instead, he relied on representations made in an e-mail authored by Dr. Scott Fruin, a researcher in California. Dr. Fruin stated only that, “[smell] is a good indicator of a high concentrations of particulate, but [researchers in California] did not have enough occurrences of this to come up with reliable numbers.” Dr. Fruin also stated that he thought “many people can notice diesel smell at lower concentrations” than the concentrations that Mr. Stead suggests are present in Plaintiffs’ residence.<sup>3</sup> “However,” Dr. Fruin wrote, “we have also seen the nose gets accustomed to whatever concentrations it has been exposed to for a few minutes, and sensitivity goes down, similar to nearly all smells.” Dr. Fruin’s statements do not amount to any decisive conclusions or theories about the link between smell and particulate concentrations.<sup>4</sup> Without a scientific foundation for and adequate testing of the alleged correlation between smell and a

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<sup>3</sup> Mr. Stead also testified at his deposition that the lowest observable adverse effects level (LOAEL) for diesel fume particulate matter is  $5 \mu\text{g}/\text{m}^3$ , which, he stated, was odorless. Though precise numbers are not possible, he stated, a “rough number” is  $80\text{--}100 \mu\text{g}/\text{m}^3$  when the Tricketts smell diesel. Particulate levels where one can smell diesel fumes are therefore much higher than the LOAEL, according to Mr. Stead. He did not, however, provide any scientific research or testing to support this claim.

<sup>4</sup> The court notes that Dr. Fruin’s representations also do not fall within *Daubert* standards of reliability. Plaintiffs offer no evidence that Dr. Fruin’s representations are capable of being tested, have been (or could be) published or subjected to peer review, have known or potential rates of error, or have been generally accepted in the scientific community. Plaintiffs offer no evidence of Dr. Fruin’s qualifications beyond the fact that he worked with the California Air Resources Board.

specific concentration of diesel particulate, Mr. Stead's proffered testimony is not the type that would be deemed reliable in the scientific community.<sup>5</sup>

Mr. Stead's testimony also fails the second *Daubert* reliability factor in that his opinions have not been published or subject to peer review. Mr. Stead's testimony and consultations for regulatory and legislative bodies were not reviewed by a relevant scientific community. His specific theory regarding the particulate concentration level in this case has not been published or peer reviewed. There are no regulations that reflect Mr. Stead's findings with regard to the threat diesel fumes pose to human health. Accordingly, Mr. Stead's theory regarding the risk to human health remains pure supposition.

In addition, Mr. Stead proffers no known or potential rates of error with regard to his theories about particulate concentrations in diesel fumes or their effects on human health. According to Mr. Stead, there are no scientific studies on the correlation between odor and particulate concentrations. Mr. Stead's hypothesis that diesel fumes pose a risk if they can be smelled is thus not made within the confines of any scientific formula which can be re-tested and to which a potential rate of error can be ascribed.

Finally, Plaintiffs present no evidence regarding the general acceptance of Mr. Stead's theories in the scientific community. Although Mr. Stead appears knowledgeable in the field of diesel exhaust, he does not offer any evidence that has been generally accepted by others. Mr. Stead's testimony thus fails the fourth *Daubert* factor.

For the foregoing reasons, the court finds that Mr. Stead's opinions are not sufficiently reliable and relevant to permit him to testify as an expert witness under Rule 702 and *Daubert*. Defendants' motion in limine is hereby GRANTED.

SO ORDERED.

Dated at Middlebury, Vermont, March 10, 2005.

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<sup>5</sup> Mr. Stead also offers support for his theory of the particulate concentration in Plaintiffs' home based on the topography of the land and the weather conditions, both of which, he states, allow the diesel exhaust to settle in the an area surrounding Plaintiffs' home. Mr. Stead's lack of expertise in the appropriate fields indicates that he is not qualified to render expert opinion on particulate concentration to the extent his opinion is based on his theories of topography and weather conditions. He did not conduct any studies or tests to verify this effect, and his theory merely amounts to an observation of a topographical bowl. He does not explain how his observation is different from any lay observation of the topographical features surrounding the house.

\_\_\_\_\_/s/\_\_\_\_\_  
Hon. Christina Reiss  
Addison Superior Court