

**FINAL AWARD ALLOWING COMPENSATION**  
(Reversing Award and Decision of Administrative Law Judge)

Injury No.: 08-066683

Employee: David Cheney (deceased)  
Claimant: Donna Cheney (surviving spouse)  
Employer: City of Gladstone  
Insurer: Midwest Public Risk of Missouri

This workers' compensation case is submitted to the Labor and Industrial Relations Commission (Commission) for review as provided by § 287.480 RSMo. We have reviewed the evidence, read the briefs, heard the parties' arguments, and considered the whole record. Pursuant to § 286.090 RSMo, the Commission reverses the award and decision of the administrative law judge.

**Preliminaries**

At the hearing before the administrative law judge on February 2, 2017, the parties asked the administrative law judge to resolve the following issues: (1) occupational disease; (2) whether employee's condition of non-Hodgkin's lymphoma arose out of and in the course of his employment; (3) medical causation; (4) whether the firefighter presumption pursuant to § 287.067.6 RSMo. applies; and (5) determination of dependency benefits under § 287.240 RSMo., including death benefits and burial expenses.

The administrative law judge concluded as follows: (1) the credible evidence is that employee's condition of non-Hodgkin's lymphoma did not arise out of and in the course of his employment; (2) medical causation by exposure in the course of employee's work was not proven; (3) the firefighter presumption pursuant to § 287.067.6 does not apply; and (4) dependency issues, death and burial benefits were not addressed, as the administrative law judge found no compensable occupational disease.

Employee filed a timely application for review alleging the administrative law judge erred: (1) in failing to properly apply the firefighter presumption rule under § 287.067.6; and (2) in failing to properly apply the established case law regarding the burden of proof in an occupational disease case.

For the reasons set forth below, we reverse the award and decision of the administrative law judge.

**Findings of Fact**

David Cheney, Jr. (hereinafter "employee") was born on August 13, 1959. He served with the Kansas City Police Department in 1981, later joining the Gladstone Department of Public Safety as a police/firefighter. In the early 1990's he was assigned to the Fire Division and retired after a 28-year career at the rank of captain.<sup>1</sup> He also served with the Smithville Area Fire Protection District as an Assistant Chief/Fire Inspector. He married claimant Donna Cheney on March 25, 1981, and they remained married and lived together up to the time of his death. She has not remarried. Employee was a non-smoker. Employee developed non-Hodgkin's lymphoma

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<sup>1</sup> Employee's deposition testimony established that he attended the police academy in 1981, served as a police officer for about a year, and then moved to the City of Gladstone as a public safety officer, performing both police and firefighting duties for about seven years before assignment to the fire department. (Transcript, pages 3038-3039)

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(NHL), which was diagnosed on January 18, 2008, at the age of 48, and immediately began treatment<sup>2</sup>. His cancer was ultimately considered Stage 4, and he was told to get his affairs in order. He was not actively employed thereafter. Employee filed a Worker's Compensation claim on August 1, 2008. He retired from the fire department on February 1, 2009. Employee underwent radiation, chemotherapy, lymph node removal surgery, and stem cell therapy. According to employee's deposition testimony, insurance paid for most of his treatment, aside from deductibles and co-pays. Mr. Cheney died as a result of non-Hodgkin's lymphoma on May 22, 2014, at the age of 54.

In the course of his duties as a firefighter, employee was exposed to smoke, and the by-products and emissions that came from fires he suppressed and during the overhaul phase when firefighters inspect the aftermath of the fire to identify any remaining hot spots. As recently as two weeks prior to January 15, 2008, employee's duties included responding to fires. The exposures that employee was subjected to in the course of his work included fumes, particulates, and off-gassing<sup>3</sup> from the burning of plastics, synthetic fabrics, rubber, tires, fiberglass insulation, metals, paint, lead, motor oils, brake fluid, gasoline, common household items and cleaners, batteries, diesel, poisons, and pressure-treated deck wood. The burning of many of these items is known to produce toxic and carcinogenic chemicals. (Transcript, pages 193, 202)

Some of those substances include acrolin, asbestos, cyanide, benzene, hydrogen sulfide, hydrogen cyanide, potassium chloride, phosgene gas ("mustard" gas), trichloroethylene, as well as carbon monoxide, and a substance referred to as "black soot."<sup>4</sup> (Transcript pages 87-90, 202, 2772-73) Employee was regularly exposed to diesel fumes in the fire station itself from the vehicles, due to poor ventilation, until approximately 1994 when a Plymovent system was adopted. Diesel fumes were noticeable in all areas of the station, including the kitchen and sleeping quarters. Chief David Rierson's training through the International Association of Firefighters informed him that diesel combustion byproducts include formaldehyde, carbon dioxide, sulfur and benzene. Fine diesel particulate is also released, a known carcinogen, and can accumulate on the skin, according to claimant's expert, Dr. James E. Lockey. (Transcript, page 193, 203-204)<sup>5</sup>

Employee's duties included routinely cleaning his firefighting equipment after a fire. A layer of black soot was commonly found on the protective clothing used during firefighting. No special equipment or protective devices were provided for the cleaning process, which was typically done by hosing down the firefighting suit /equipment in the firehouse, and allowing the run-off to flow into the drainage system. Employee would also frequently carry his dirty equipment in his personal vehicle and wash it in his home washing machine. Before doing so, the clothing had to be hosed down on the lawn. After washing in the machine, it would then require several cycles without clothes to clean out the debris and residue.

In the overhaul phase of the firefighting process, employee and others typically did not wear self-contained breathing apparatus, unless the carbon monoxide level was above a certain limit.

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<sup>2</sup> References to the disease throughout the transcript are NHL and "follicular NHL." Employee's treating doctor, Dr. Phillip Bieman, states a diagnosis of follicular NHL. (Transcript page 2923) Our references to NHL, as related to employee's diagnosis are meant to identify follicular NHL.

<sup>3</sup> We adopt the administrative law judge's definition of "off-gassing" as: when materials within a structure fire, or any fire, are combusted and put out but are still hot enough to melt and smolder, causing the continued off-gassing of smokes, gases, and other carcinogens." (ALJ Award, page 8)

<sup>4</sup> Many of these identified substances were established by the testimony of Dr. James Lockey and of three highly experienced fire chiefs familiar with employee's working conditions. The chiefs were educated in the hazards caused by fires through research literature and training by the International Association of Fire Chiefs, which included research on firefighter cancers. (Chief Kenneth Potter, Chief David Rierson, Chief David Cline)

<sup>5</sup> Employee worked as a shuttle bus driver between 1978 and 1980.

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There was no requirement that firefighters do so in this phase. During the fire suppression stage, decreased oxygen was sometimes experienced because of limitations on oxygen tanks.

Fire Chief David Rierson, a witness for claimant, and former co-worker of employee with 31 years in the firefighting field, exhibited significant knowledge in the risks and hazardous exposures of the occupation, based on his experience, education and training. He identified the heightened risks between the firefighting profession and exposure to toxic chemicals. His observation has been that firefighters are at greater risk than the average public in regard to combustion, particulates, and carcinogens found at firefighting scenes. (Transcript, page 2786) Chief Rierson and Chief David Cline also experienced and observed that particulate from firefighting and overhaul phases would collect on the skin.

#### Medical Experts

Employee's occupational exposures were the cause and prevailing factor in his development of NHL according to the medical opinion of Dr. James E. Lockey, M.D. Dr. Lockey is Board Certified in pulmonary disease and occupational medicine and is a Professor in Environmental Health at the University of Cincinnati College of Medicine. Dr. Lockey's research has included the effects of diesel exposure. We find his opinion persuasive that employee's follicular NHL was related to his job duties as a firefighter. (Transcript, pages 189-190) His opinion was based on his research, described as a meta-analysis of 32 published research studies of the cancer risks for firefighters. He and colleagues published their findings in the Journal of Occupational and Environmental Medicine in November 2006, entitled, "Cancer Risks Among Firefighters."<sup>6</sup> The meta-analysis comprehensively addressed the total number of study participants in the 32 separate studies, comparing rates of various types of cancer to the general population. The conclusion of Dr. Lockey and his colleagues was that firefighters are 1.51 times more likely to develop NHL than the general population. The study concluded that NHL was "one of four tumors" that were more likely than not related to occupational exposures for firefighters and that there was a "high relative risk" for the profession. (Transcript, page 200) Dr. Lockey also relied on a study by the National Institute of Occupational Safety and Health (NIOSH), published within two years prior to his deposition date in August 2014. The NIOSH study reviewed cancer rates in firefighters from three major U.S. cities over more than 50 years and found firefighters, (especially those with at least 20 years on the job), faced an increased risk of developing NHL. (Transcript, pages 191-192) The doctor testified that certain studies have associated trichloroethylene, (a chemical to which employee was potentially exposed), as linked to NHL. (Transcript, page 202) Dr. Lockey's testimony was persuasive as to the causal link and elevated risk between the occupational exposures of firefighters and cancers, such as NHL. We also find persuasive his opinion that employee's occupational exposure was a prevailing factor over any other factor in the development of NHL. Employee's exposures to carcinogenic substances were potentially through bodily systems including the hematopoietic, respiratory, pulmonary, coronary, lymphopoietic systems, and skin contact. (Transcript, pages 185, 200, 204)

Dr. P. Brent Koprivica, M.D. examined employee on January 25, 2011. Dr. Koprivica is Board Certified in Preventative Medicine and Occupational Medicine. In addition, he has a Masters in Public Health with an emphasis in occupational and environmental medicine. In his report, he opined that employee's exposure to risks as a firefighter was a direct, proximate and prevailing factor in the development of NHL. In evaluating the medical records of employee at the time of performing the independent medical examination, Dr. Koprivica found no significant past medical history relative to the current medical condition. Dr. Koprivica opined that employee's exposure to chemical and gaseous risks as a firefighter was the direct, proximate and prevailing

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<sup>6</sup> This study was published in the journal in Volume 48, # 11, November 2006.

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factor in the development of NHL. He found employee to be permanently and totally disabled as a result of the occupational disease. We find Dr. Koprivica's opinion to be persuasive.

Employer presented Dr. Neal Shah, M.D. Board Certified in internal medicine, medical oncology and hematology, who has done research in the area of NHL. Dr. Shah maintained that NHL has no known cause. He explained that follicular NHL is a disease of the lymphatic system, not of the respiratory tract or cardiovascular system. Dr. Shah conceded that "all firefighters" are exposed to known carcinogens, which included benzene, asbestos, black soot and diesel exhaust. (Transcript, pages 2981-2982) Dr. Shah opined that there are other risk factors that affect development of NHL, including being a Caucasian male and being overweight and aging. (Transcript, page 2984) He opined that employee's body mass index of 44, (which he reported to be considered morbidly obese according to National Institute of Health standards), could have affected his risk for the disease. While Dr. Shah could not find any peer-related medical journal articles indicating environmental exposures caused follicular NHL lymphoma, he did not review either Dr. Lockey's journal article of 2006 nor the more recent NIOSH study.

Employee's treating oncologist Dr. Phillip Bierman, M.D. did not testify, but stated in his report that it is impossible to know the cause of NHL.

### **Conclusions of Law**

#### **Occupational disease arising out of and in the course of employment**

Section 287.067 RSMo provides, in relevant part, as follows<sup>7</sup>:

1. In this chapter the term "occupational disease" is hereby defined to mean, unless a different meaning is clearly indicated by the context, an identifiable disease arising with or without human fault out of and in the course of the employment. Ordinary diseases of life to which the general public is exposed outside of the employment shall not be compensable, except where the diseases follow as an incident of an occupational disease as defined in this section. The disease need not to have been foreseen or expected but after its contraction it must appear to have had its origin in a risk connected with the employment and to have flowed from that source as a rational consequence.

2. An injury or death by occupational disease is compensable only if the occupational exposure was the prevailing factor in causing both the resulting medical condition and disability. The "prevailing factor" is defined to be the primary factor, in relation to any other factor, causing both the resulting medical condition and disability. Ordinary, gradual deterioration or progressive degeneration of the body caused by aging or by the normal activities of day-to-day living shall not be compensable.

The courts have provided some guidance as to how we are to analyze the question of causation in an occupational disease case:

Chapter 287 does not require a claimant to establish, by a *medical certainty*, that his or her injury was caused by an occupational disease in order to be eligible for compensation.

<sup>7</sup> Employee's disease first manifested and was diagnosed in January 2008. Therefore, we refer to the law as amended in 2005.

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*Vickers v. Mo. Dep't of Pub. Safety*, 283 S.W.3d 287, 295 (Mo. App. 2009)(emphasis in original).

In the *Vickers* case, the court reversed a Commission award denying benefits to an employee who claimed she contracted *Clostridium difficile* (C. diff) as a result of an occupational exposure to feces-covered bed sheets at her employer's nursing home. 283 S.W.3d at 289-90. Notably, the court overturned a credibility call by the Commission which had accepted the theory from the employer's expert that it was difficult to say employee contracted C. diff in the absence of evidence of any specific exposure at work. *Id.* at 293-94. In concluding employee was entitled to benefits on the evidence presented, the court strongly suggested that this defense theory was insufficient, as a matter of law, to rebut the testimony from employee's expert that employee more likely than not contracted C. diff at work. *Id.* at 295-96.

In the more recent case of *Smith v. Capital Region Med. Ctr.*, 412 S.W.3d 252 (Mo. App. 2013), the Commission concluded a phlebotomist employee's fatal hepatitis C was not a compensable injury by occupational disease on the basis there was no evidence that anyone with hepatitis C was ever present in the workplace, or provided a blood sample handled by the employee. Once again, the court reversed, holding that evidence of a specific type and/or magnitude of exposure is not necessary in occupational disease cases; instead, employee's expert needed only establish there was a *probability* that working conditions caused the disease. *Id.* at 261. In a subsequent appeal in the same case, the court made clear that our focus in occupational disease claims must be on whether the evidence persuasively establishes a *risk* of sustaining the claimed injury in the employment at issue, as opposed to a conclusive identification of the particular causative source(s) for the claimed injury. *Smith v. Capital Region Med. Ctr.*, 458 S.W.3d 406, 416 (Mo. App. 2014).

Following the decisions in *Vickers* and *Smith*, we conclude the administrative law judge misinterpreted the established framework for analysis in an occupational disease case. Those cases set forth the principle that claimant does not have to prove the actual cause of the disease, rather she must show an increased risk of contracting the disease resulted from the work exposure. Furthermore, Missouri law does not require a finding of which specific chemical caused the occupational disease, as was shown in a case of developing multiple myeloma after ten years of exposures to multiple chemicals in the workplace, including benzene. *Moreland v. Eagle Picher Techs. LLC*, 362 S.W. 3d 491, 505, (Mo. App. S.D. 2012). We conclude claimant has met the burden of proof to establish a compensable occupational disease.

The administrative law judge concluded that "claimant's position that a statistical significance as advanced by Dr. Lockey of a correlation of low to moderate statistical significance is sufficient to carry their burden of proof, I must disagree. Claimant's statistical correlation does not equate to causation." (Award, page 23) The administrative law judge then points to other "contributing factors," such as employee's age, weight, sex and race. We find that the judge's analysis misses a critical distinction in causation as applied to occupational disease cases. The test is whether the occupational exposure creates an increased risk, as compared with the general public. Simply because employee had additional risk factors, largely not within his control (age, race, sex), does not negate the impact of the increased risk factor caused by his occupation. This increased risk establishes "a recognizable link between the disease and some distinctive feature(s) of the employee's job..." *Kelley v. Banta & Stude Constr. Co.*, 1 S.W.3d 43, 48-49 (Mo. App. 1999)

We have carefully analyzed the expert medical testimony and have found that Dr. Lockey provided the more relevant and persuasive testimony. Dr. Koprivica's report, based on examination of, and thorough review of patient records, is credible and persuasive. Claimant's

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medical experts provide credible opinions that employee's NHL was an identifiable disease arising with or without human fault out of and in the course of employment as a firefighter; and the occupational exposure was the prevailing factor in causing both the resulting medical condition and disability. (§ 287.067.1 & § 287.067.2) While Dr. Shah and Dr. Bierman state there is no known cause of NHL, Dr. Shah's opinion did not take into account the studies reviewed by Dr. Lockey, showing an increased risk as a result of the carcinogenic exposures which Dr. Shah and Dr. Lockey both identified.

Claimant proved that employee's occupation required increased exposure to toxic substances and carcinogens beyond that of the general public. Claimant proved that employee's occupation increased his risk of developing cancer, including NHL. Claimant proved through medical testimony that employee's occupational exposure was the prevailing factor in development of the disease and disability.

### The Firefighter Presumption

We have found compensability under the more general occupational disease provisions in § 287.067 RSMo. Because the parties extensively briefed and argued the additional basis of compensability under subsection 6 (firefighter presumption), we briefly address it here. The Worker's Compensation Act states that:

Diseases of the lungs or respiratory tract, hypotension, hypertension, or disease of the heart or cardiovascular system, including carcinoma, may be recognized as occupational diseases for the purposes of this chapter and are defined to be disability due to exposure to smoke, gases, carcinogens, inadequate oxygen, of paid firefighters of a paid fire department . . . if a direct causal relationship is established. § 287.067.6 RSMo.

Where the "firefighter presumption" exists, the burden of proof shifts to the employer once the employee proves it is applicable. This section of the law enacted in 2005 has not been interpreted by the courts.<sup>8</sup> Claimant argues that the application of the provision turns on the interpretation and usage of the phrase "carcinoma." Claimant maintains that we should read this term to mean an "epithelial" cancer by relying on Webster's dictionary; and that epithelial refers to the skin, which contains hair follicles, therefore it follows that follicular NHL is a type of carcinoma envisioned by the legislature<sup>9</sup>. We have no medical evidence to support this chain of logic. Employer argues that NHL is a lymphatic disease and as such, it does not fall within the limited list of diseases in the presumption. Inapposite to this argument is the testimony of Dr. Lockey describing the source of employee's carcinogenic exposures as potentially through bodily systems including the hematopoietic, respiratory, pulmonary, coronary, lymphopoietic systems, and skin contact.

We are required to apply strict construction to the legislative mandate. This is particularly important where an exception or presumption favoring one party is invoked. The legislature did not provide us with a definition of carcinoma. However, the legislature did envelop that phrase in the context of "diseases of the lungs or respiratory tract, hypotension, hypertension or disease of the heart or cardiovascular system."

<sup>8</sup> Claimant identified *Byous v. Missouri Local Gov't Employees Ret. System Bd. Of Trustees*, 157 S.W. 3d 740, 746-47, (Mo. App. W.D. 2005). Claimant suggests this case provides guidance on application of a presumption and rebuttal process in a disability case. However, this case does not address the presumption before us.

<sup>9</sup> The Claimant's brief did not refer us to any reference in the record wherein a medical opinion addressed the meaning of *follicular* in reference to Non-Hodgkin's Lymphoma, and instructed us that the disease is "a cancer which begins in the hair follicles." (Claimant's Brief at 27)

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Whether the legislature intended to limit the application of "carcinoma" to the diseases of the named types is unclear to us. Whether follicular NHL is properly characterized as a disease of the lungs, respiratory tract, heart or cardiovascular system, "including carcinoma" is unclear to us.

Nevertheless, we note that the multitude of carcinogenic substances that employee was exposed to in his career as paid firefighter of a paid fire department certainly were shown to be the prevailing factor in his resulting cancer, such that a direct causal relationship was established. Because employee's NHL is not clearly established in the record before us as a disease falling within those enumerated in the "firefighter presumption" as set forth by the legislature in the statute, we decline to apply the presumption.

Claimant has proven that employee's disease and resulting disability of non-Hodgkin's lymphoma arose out of and in the course of his employment; and exposures to carcinogenic substances in the workplace were the prevailing factor in causing the occupational disease.

Burial Expenses and Death Benefits

Claimant Donna Cheney, as surviving spouse, is a dependent entitled to compensation under § 287.240 RSMo.

Section 287.240 RSMo provides, in relevant part, as follows:

If the injury causes death, either with or without disability; the compensation therefor shall be as provided in this section:

(1) In all cases the employer shall pay direct to the persons furnishing the same the reasonable expense of the burial of the deceased employee not exceeding five thousand dollars. . . .

We have determined that employee's injury by occupational disease resulted in his death. Despite the request for burial expenses made on the record at the hearing (Transcript, page 5), claimant did not provide evidence of the expenses. Therefore, we are unable to make a finding of the reasonable expenses of burial and award same.

The parties stipulated that employee's weekly compensation rate was \$742.72 for temporary total disability and \$389.04 for permanent partial disability. The equivalent death benefit is \$742.72. We turn next to the claim for weekly death benefits pursuant to § 287.240(3) RSMo, which provides, in relevant part, as follows:

The word "dependent" as used in this chapter shall mean:

(a) A wife upon a husband with whom she lives or who is legally liable for her support, and a husband upon a wife with whom he lives or who is legally liable for his support; provided that on the death or remarriage of a widow or widower, the death benefit shall cease unless there be other total dependents entitled to any death benefits under this chapter. In the event of remarriage, a lump sum payment equal in amount to the benefits due for a period of two years shall be paid to the widow or widower. Thereupon the periodic death benefits shall cease unless there are other total dependents entitled to any death benefit under this chapter, in which event the periodic benefits to which such widow or widower would have been entitled had he or she not died or

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remarried shall be divided among such other dependents and paid to them during their period of entitlement under this chapter;

Applying the statutory provisions set forth above, we conclude that the claimant herein, Donna Cheney, was employee's dependent at the time of employee's death. Accordingly, we conclude that claimant is entitled to death benefits at the weekly rate of \$742.72, per week. The weekly death benefits are due beginning May 22, 2014, and shall continue thereafter in accordance with the terms of § 287.240 RSMo.

**Award**

We reverse the award and decision of the administrative law judge. We conclude that employee suffered a compensable injury by occupational disease arising out of and in the course of employment. Claimant, Donna Cheney is entitled to, and employer /insurer is hereby ordered to pay, weekly death benefits beginning May 22, 2014, in the amount of \$742.72 per week. Said payments shall continue until modified by law in accordance with the provisions of § 287.240 RSMo.

This award is subject to a lien in favor of Boyd & Kenter, Attorneys at Law, in the contracted amount of 25%, for necessary legal services rendered.

Any past due compensation shall bear interest as provided by law.

The award and decision of Administrative Law Judge Mark Siedlek is attached solely for reference.

Given at Jefferson City, State of Missouri, this 15<sup>th</sup> day of June 2018.

LABOR AND INDUSTRIAL RELATIONS COMMISSION



[Signature]  
John J. Larsen, Jr., Chairman

NOT SITTING  
Reid K. Forrester, Member

[Signature]  
Curtis E. Chick, Jr., Member

Attest:

[Signature]  
Secretary

## FINAL AWARD

Employee: David Cheney, deceased Injury No. 08-066683  
Dependents: Donna Cheney, spouse  
Employer: City of Gladstone  
Insurer: Midwest Public Risk of Missouri  
Additional Party: N/A  
Hearing Date: February 2, 2017 Checked by: MSS/pd  
Record closed: March 21, 2017

### FINDINGS OF FACT AND RULINGS OF LAW

1. Are any benefits awarded herein? No
2. Was the injury or occupational disease compensable under Chapter 287? No
3. Was there an accident or incident of occupational disease under the Law? No
4. Date of accident or onset of occupational disease: alleged January 18, 2008
5. State location where accident occurred or occupational disease was contracted: Gladstone, Jackson County, Missouri
6. Was above employee in employ of above employer at time of alleged accident or occupational disease? Yes
7. Did employer receive proper notice? Yes
8. Did accident or occupational disease arise out of and in the course of the employment? No
9. Was claim for compensation filed within time required by Law? Yes
10. Was employer insured by above insurer? Yes
11. Describe work employee was doing and how accident occurred or occupational disease contracted: Employee alleges that he contracted Non-Hodgkin's Lymphoma as a result of his exposure to smoke, gasses, carcinogens, and inadequate oxygen.
12. Did accident or occupational disease cause death? No, death not related to work.  
Date of death? May 22, 2014

- 13. Part(s) of body injured by accident or occupational disease: N/A
- 14. Nature and extent of any permanent disability: Employer not found responsible for claimed injury
- 15. Compensation paid to-date for temporary disability: \$-0-
- 16. Value necessary medical aid paid to date by employer/insurer? \$-0-
- 17. Value necessary medical aid not furnished by employer/insurer? None
- 18. Employee's average weekly wages: sufficient for maximum amount under law
- 19. Weekly compensation rate: \$742.72 for temporary total and \$389.04 for permanent partial disability
- 20. Method wages computation: MO. REV. STAT. §287.250
- 21. Amount of compensation payable:

Medical Expenses

Medical Already Incurred..... \$-0-  
 Less credit for expenses already paid..... \$(-0-)  
 Total Medical Owing..... \$-0-

Temporary Disability

None Claimed ..... \$-0-  
 Less credit for benefits already paid ..... (\$-0-)  
 Total TTD Owing ..... \$-0-

Permanent Partial Disability

0% Disability..... \$-0-  
 Total Award:.....\$-0-

- 22. Second Injury Fund liability: N/A .....None
- 23. Future requirements awarded: None

## FINDINGS OF FACT and RULINGS OF LAW

Employee: David Cheney, deceased Injury No. 08-066683

Dependents: Donna Cheney, spouse

Employer: City of Gladstone

Insurer: Midwest Public Risk of Missouri

Additional Party: N/A

Hearing Date: February 2, 2017; Record closed March 21, 2017 Checked by: MSS/pd

On February 2, 2017, the employee and employer appeared for a final hearing. The Division had jurisdiction to hear this case pursuant to §287.110. The employee, appeared through dependent Donna Cheney in person and with counsel, John R. Boyd. The employer appeared through Kip A. Kubin. Counsel for the Second Injury Fund appeared at trial, but their involvement was disposed of by the voluntary dismissal with prejudice at the commencement of trial. The primary issues the parties requested the Division to determine was whether or not David Cheney sustained an injury by occupational disease arising out of his employment with the City of Gladstone on January 18, 2008, whether the alleged occupational disease arose out of and in the course of the employment, whether the alleged exposures were the prevailing factor in causing the medical condition and disability, whether the employer is responsible for dependent death benefits, and whether the employer is responsible for burial benefits. For the reasons noted below, I find that the employee failed to prove the elements necessary to entitle his dependent to an award under the Missouri Workers Compensation Statutes.

### STIPULATIONS

The parties stipulated that:

1. On or about January 18, 2008 (“the alleged injury date”), City of Gladstone (“City”) was an employer operating subject to Missouri’s Workers’ Compensation law with its liability fully insured by Midwest Public Risk of Missouri;
2. David Cheney was its employee working subject to the law in Gladstone, Jackson County, Missouri;
3. David Cheney gave proper and timely notice of the alleged occupational disease.
4. David Cheney filed his claim within the time allowed by law;

5. The claimant's compensation rate was \$742.72 for purposes of temporary total compensation and death benefits and \$389.04 for permanent partial disability benefits;
6. The City has paid no benefits for medical compensation or temporary total compensation; and
7. David Cheney passed away on May 22, 2014

### **ISSUES**

The parties requested the Division to determine:

1. Whether Mr. Chaney sustained an injury by occupational disease on January 18, 2008?
2. Whether the claimant's occupational disease arose out of and in the course of his employment with the City of Gladstone?
3. Whether the occupational disease was the prevailing factor in causing the medical condition and disability?
4. Whether the employer is responsible for payment of burial expenses? And,
5. Whether the employer is responsible for dependent death benefits?

### **FINDINGS OF FACT**

The employee presented live testimony from Kenneth Potter, David Cline and Donna Cheney and presented the following exhibits, all of which were admitted into evidence without objection:

- EXHIBIT A—Original Claim for Compensation
- EXHIBIT B—Amended Claim for Compensation
- EXHIBIT C—Employer's Answer to Claim for Compensation ....
- EXHIBIT D—Employer's Amended Claim for Compensation .....
- EXHIBIT E—Contingency Fee Contract
- EXHIBIT F—Subpoena for David Cline
- EXHIBIT G—Subpoena for Kenneth Potter
- EXHIBIT H—Suggestion of Death
- EXHIBIT I—Motion to Substitute Party
- EXHIBIT J—Death Certificate

EXHIBIT K—Marriage Certificate  
EXHIBIT L—CMS Letter 10-4-16  
EXHIBIT M—Gladstone General Order—Protective Clothing  
EXHIBIT N—Gladstone Standard Operating Procedure--SCBA  
EXHIBIT O—Lockey Deposition with Exhibits  
EXHIBIT P—Medical File  
EXHIBIT S—Deposition of David Rierson  
EXHIBIT BB—60 Day Pleading with Certificate of Receipt  
EXHIBIT CC—Photograph of David Cheney  
EXHIBIT DD—Contingency Fee Contract with Donna Cheney  
EXHIBIT EE—Photograph of David Cheney  
EXHIBIT FF—LAGERS benefit letter

Although the employer did not call any witnesses, it did present the following exhibits, all of which were admitted into evidence without objection:

EXHIBIT 1—Notice of Filing of Medical Report for Dr. Bierman  
EXHIBIT 2—Curriculum Vitae of Dr. Phillip J. Bierman, M.D.  
EXHIBIT 3—Medical Report of Dr. Phillip Bierman, M.D. 11/22/2010  
EXHIBIT 4—Deposition of Dr. Neel Shah, M.D. with exhibits 6/01/2015  
EXHIBIT 5—Deposition of David Cheney July 20, 2009

David Cheney was born on August 13, 1959. At the time of the alleged disablement from occupational disease, he was 48 years old. At the time of his death on May 22, 2014, he was 54 years old. He was married to Donna Cheney for over 30 years.

Mr. Cheney graduated from Oak Park High School in 1977 and attended Maple Woods Community College, taking courses in Criminal Justice. He attended the Missouri Police Academy and completed that training in 1981. After graduating the academy served as an airport police officer for 11 months and then worked for the City of Gladstone as a public service officer for 6 years before moving to the fire department. During his time with the City of Gladstone as a public safety officer he cross-trained as a firefighter. When the City of Gladstone divided into separate police and fire departments, he went to the fire department.

He first served as an apparatus operator for the fire department and performed those duties for approximately 10 years. He was then promoted to the rank of fire captain, a position he held for the next 12 years. He was diagnosed with non-Hodgkin's lymphoma on or about January 2008. He retired from the fire department on February 1, 2009. After retirement from the department he drew approximately \$3500.00 per month in benefits from LAGERS and approximately \$2200.00 per month in Social Security benefits.

Mr. Cheney filed his claim for compensation on August 1, 2008. Mr. Cheney indicated in his deposition, that he was exposed to smoke, poisonous gasses, heat and low oxygen, but was unable to recall any specific exposures or identify any specific gasses he was exposed to during his employment with the City of Gladstone. He did not keep any mental list or itemization of chemicals to which he had been exposed. He was unaware of any other firefighters of the City of

Gladstone who had contracted non-Hodgkin's lymphoma. Mr. Cheney did not recall being sent to a hospital, during his firefighting career for smoke inhalation. At the time of his diagnosis in January 2008, he did not fill out an incident report with the City of Gladstone, nor did he request medical treatment from the City of Gladstone for his condition.

### Lay Witnesses

#### Chief Kenneth Potter

Kenneth Potter testified on behalf of the Deceased. He served as a Public Safety Officer as well as Firefighter for the City of Gladstone from approximately 1983 to 2011. He served as a Public Safety Officer from 1983 to 2000 and exclusively within the Fire Department from 2000 to 2011. He was both a Battalion Chief and Division Chief. Mr. Potter testified that he worked with the Deceased from 1984 to 2008 and worked the same shift with the Deceased for most of his career. He testified that in his capacity as a Public Safety Officer (with the pre-dated the separation between the Police and Fire Department), he received approximately two weeks of training in 1983 for both pumper operation as well as specific firefighter training. He was also licensed to carry weapons as he served as a law enforcement officer concurrent with his position as a firefighter. He was intimately familiar with the use of SCBA (self contained breathing apparatus), hose operations, firefighting, use of ladders, as well as the gear that was issued to all firefighters in an effort to protect them during fires. He testified that the goal of the SCBA was to protect the firefighters from inhalation of toxic gases, smoke, particulates, as well as carcinogens that were the byproduct of combustion during fires. He testified that his training was to wear the SCBA when entering any structure fires but that typically the SCBA came off after fire suppression had ended and moved into the overhaul phase. Typical gear that was worn by both himself as well as Mr. Cheney included firefighting helmets; NOMEX, hoods; leather gloves, and old cotton coats and pants that was collectively called turn out gear. They also wore rubber boots. He testified that the leather gloves were porous and absorbed considerable sweat as well as water. He also testified that the old style turn out gear (coat and pants) was also very porous and did an inadequate job of keeping out moisture and other matter during firefighting. He testified that by the late 1980's, the Gladstone Fire Department began purchasing new gear for the firefighters, as the fire service industry began to adapt new policies, procedures, as well as advancements in gear for firefighting. He testified that during his career with the City of Gladstone, both and the Deceased were issued only one set of gear. He testified that the gear was never washed during the first years and that any of the firefighters working for the City of Gladstone had ever been trained to wash any of their gear. He testified that the only way that they cleaned the gear was to lay it on the concrete floor within the station itself and to hose off and let the water run out into drains located in the station. Neither he, the Deceased, or other firefighters ever wore any sort of protective clothing when cleaning the gear.

Mr. Potter further testified that during the 1970's to 1980's, the type of breathing apparatus used by the Fire Department was a pressure demand device. This meant that air was only received when inhaling and that there was no out flow of carbon dioxide unless exhaling forcibly. The old air tanks weighed approximately 35 pounds and were made of steel. He testified that the weight of the gear affected how often certain gear was worn or whether it worn at all. He testified that the older generation of firefighters didn't bother to wear these steel air

tanks and that some of the newer generation of guys, including himself sometimes did. He testified that this was the practice within the department and was never prohibited by the City. He testified that neither he nor the Deceased were provided any training on the byproducts of combustion and any omissions that came from any of the fires that they were suppressing. He testified that while the City had hybrid police and firefighters serving as PSO's, individuals were required to carry firefighting gear and turnout gear in the trunks of whatever vehicle they may have been driving in the event that there was a call to fight a fire. In other words, either he or the Deceased would be called upon to have firefighting gear stored in their vehicle even though they may be on patrol as police officers. He testified that there were two PSO's assigned at the only stations maintained by the City. In the 1980's, there was one individual stationed at each fire station for a total of six PSO's to operate any fire services. If while serving on police duty there was a call for a fire, the individuals would change into their firefighting turn out gear, something that he testified both he and the Deceased did. He did indicate that after firefighting or fire suppression, they did not bother to clean the gear, instead throwing it into the trunk of the vehicle they were driving or throwing it into their personal vehicles after a shift was completed. He testified that at the time he and the Deceased worked together, there were only two fire stations, one of which was next to the Gladstone City Hall and that firefighters worked both stations. At Fire Station 1, there were two bays to house the trucks. There was a recreational area that was roughly 15' x 10'. The sleeping area held only two beds and had a bathroom and shower facility inside. As such, there was room for a maximum of two firefighters, normally with only one stationed inside.

Mr. Potter testified that the City of Gladstone installed the Plymovent system for the first time in 1993. The goal of the Plymovent system was to vent diesel exhaust to outside of the station. Prior to that time, whenever the trucks were running or any other diesel was in operation, the exhaust was directly into the bay area as well as the sleeping quarters, kitchen, and rec area. Mr. Potter recalled black residue covering the corners of the buildings and that he remembers vividly smelling the fumes from the diesel exhaust while sitting in the living quarters. Mr. Potter further testified that at Station No. 2, this was three bay station that actually had room for six trucks as well as an office and kitchen area. He testified that for the better part of his career, the bunker gear/turn out gear/firefighting gear typically stayed in the sleeping area where the firefighters would sleep at night. This included their dirty pants, boots and other equipment that had not been cleaned. He testified that it was not until the mid 1990's where they no longer carried bunker gear in their personally owned vehicles. He testified that during the 1980's, there was no formal policy in place regarding the use of SCBA by the firefighters. He testified that some of the firefighters never wore SCBA as there was no specific disciplinary enforcement by the City or any of the City management. He recalls specifically wearing his SCBA at most fires and also recalls the Deceased his SCBA at most fires. He did testify that the initial face masks that they were issued were made of very stiff material and the rubber was no malleable. Instead, the rubber was very hard and often times failed to provide an adequate seal, meaning that smoke, gases, carcinogens and other particular matter would find its way into the firefighter's mask. He testified that it was not uncommon that the breathing tube and regulator on the air tanks would be damaged during a firefighting event. If the SCBA failed, they had to stop active fire fighting at that point to replace the gear. He testified it was a common experience to be exposed to extremely high temperatures as well as smoke and other matter that he was not generally exposed to outside of his work environment.

When conducting firefighting operations, he testified that there would be times when they would conduct what is called vertical ventilation, which involved the use of an axe or a chainsaw taken to a roof to allow smoke to escape in a vertical manner. Horizontal ventilation included the breaking out of windows to allow smoke and other dangerous gases to escape out to the side.

During the overhaul phase, it was common practice for firefighters to not wear any SCBA. During the majority of his career as well as that of the Deceased, neither he nor the Deceased would wear their SCBA during the overhaul phase. The only reason that they would have been required to wear the SCBA is if the carbon monoxide (co) monitors indicated that the levels were too high. Otherwise, during the overhaul phase, he testified that both he and the Deceased would begin searching for any hidden fires in the structure and looking for any burning or smoldering materials that may not have been fully extinguished during the suppression phase. This would include numerous synthetic fabrics, plastics, and numerous common household items. He testified that the odors from burning plastic were readily noticeable, but included other smells as well as odors from other products that would have been burning during combustion phase. He testified that the SCBA gear was rated for 45 minutes although the best estimate was that the air tank would last for no longer than 30 minutes. The City of Gladstone had only two cylinders which were rated for 60 minutes but no more. There was one spare air cylinder for each air pack which would have been present at a fire suppression. With respect to Exhibits N, Mr. Potter testified that neither he nor the Deceased were ever disciplined for violation of any of the items listed on this exhibit. He testified that eventually both he and the Deceased began to wear the SCBA due to education within the firefighting community about the side effects of "off-gassing". Simply put, off-gassing is when materials within a structure fire, or any fire, are combusted and put out but are still hot enough to melt and smolder, causing the continued off-gassing of smokes, gases, and other carcinogens. Mr. Potter testified that through education within the firefighting community, they learned of some of the byproducts of structure fires which included Phosgene gas, which during World War I, was known as mustard gas. He further testified that when conducting overhaul, he would use as well as the Deceased, various firefighting tools such as pole pikes and picks. They would knock down areas in the house that had been hosed during the suppression phase, knocking out insulation, and other materials in an effort to locate any additional hot spots. During the overhaul phase, he testified that the typical gear worn by firefighters including himself and the Deceased, were boots, pants, helmets, and gloves. The SCBA was not worn due to limitations on the amount of air within the tank; its awkwardness during the overhaul phase, its weight; the SCBA mask fogging up during the overhaul phase. In other words, he testified that it was simply inconvenient and there was no specific rule or regulation in place requiring the use of the SCBA during the overhaul.

He testified that in his opinion, the most toxic fires he would be involved with were typically car fires. He explained that everything in a car was man made and had either synthetics, rubber, insulation, metals, paint, lead, and the other fluids including oil for the engines, hydraulic fluid, brake fluid, all of which were toxic in some way shape or form when burning. He then testified that dumpster fires were also particularly noxious and emitted considerable smoke but was also more dangerous in that you never knew what was within the dumpster that had caused it to combust. This could include paper products, plastics, and any other number of items that would be toxic when burning. He further testified that structure fires typically included offices,

high rises as tall as three stories, apartments, homes, as well as storage sheds. A common element amongst all of these types of fires is that they typically involve highly combustible products again were common household items. He again included things such as batteries, solvents, plastics in the form of bottles and other typical household items found in nearly every household. If a storage shed, there would be concerns about gasolines and any oils that might be used on power equipment. His point again was that the structure fires typically included many burning plastics which emitted toxic chemicals, fumes and other carcinogens as a result of their combustion.

Mr. Potter further testified that following fire suppression and overhaul, his bunker/turn out gear was typically covered in black soot which easily adhered to their older gear, prior to obtaining the newer equipment in the 1990's. Regardless, the black soot was on the mask of the SCBA, the air packs, their boots, their jackets, their gloves, and their pants. It was easily identifiable and other particulate matter would adhere to their clothing both during suppression and afterwards during the overhaul and investigation phases. He specifically recalled numerous acrid burning smells that occurred at multiple fires, regardless of where car, dumpster, or structure fires. Burning plastic had a distinctive aroma and was easily identifiable at most, if not all, fires that he and the Deceased fought. He also commented how the black soot from fires would adhere to his eyes, ears, nose, and other areas of the face that were supposed to have been protected by use of the masks and SCBA. He mentioned a phenomenon called "black snot" which arose after fighting fires and at no other time. He attributed the black snot to the inadequate protection of the breathing apparatus and how the smoke and other particulate matter from the fires that they were suppressing would seep through the mask and into their nose as well as through their mouth when breathing. They would be considerable buildup around the jaw and chin area.

Furthermore, Mr. Potter testified that when he initially began working for the City of Gladstone, it was in the Public Safety Officer position with the rank of sergeant. That changed in 2000 to Battalion Chief and he retired in 2011 as a Division Chief. He testified that any policies or other changes to how firefighters were to use equipment or what equipment to use were adopted mainly due to the concerns voiced by members such as the Deceased regarding proposed changes, but there was never a specific demand or order from management for the City. In the early 1990's, he became a fire instructor with the Deceased and taught incoming firefighters at the City's fire academy.

During cross examination, Mr. Potter testified that there was a significant decrease in the number of fire exposures, for which there was no specific explanation. He did testify as well that it was up to the individual firefighter whether or not to wear a mask as again, there was no specific ordinance or rule in place by the City.

### **Chief David Cline**

David Cline testified on behalf of the claimant. He has been with the Smithville Area Fire Protection District for roughly seven years. He worked with the Deceased for approximately four years. He began working for the City of Gladstone in approximately 1996, leaving roughly six years later. He remembered being trained by the Deceased. He was both a firefighter and

paramedic as well as a FEO (fire equipment operator). In the spring of 1997, while attending the Fire Academy to earn his firefighter certification, he recalls receiving training on the dangers of hydrogen cyanide, Phosgene gas, as well as carbon monoxide. He learned that these were common byproducts of structure fires and other fires that would be commonly fought by he and other firefighters.

He recalls that during the overhaul phase, he never wore a mask or SCBA given that the only bottles that were available were rated for 30 minutes and typically lasted only 15 to 20 minutes due to heavy exertion and breathing which caused a rapid depletion of the air. He recalls wearing CO (carbon monoxide) meters that would be worn while fighting fires for the City of Gladstone. These were the only detection devices that were provided to the firefighters and were meant to measure only one gas, which was the carbon monoxide. If the meter level was low, and demonstrated a threshold limit that was considered safe, the firefighters, including Mr. Cline as well as the Deceased, would be allowed to remove their masks and any SCBA.

He does not recall having received any training on toxicology or identifying specific toxins or other carcinogens and how to avoid exposure to them during either the suppression and/or overhaul phases of fires. He was aware of the phenomenon known as black spot and encountered that throughout his career. He confirmed the observations in Mr. Potter's testimony about seals breaking or leaking on the face masks that he and other firefighters would be wearing and which allowed the infiltration of particulate matter and soot which caused this black spot phenomenon. In his experience, this phenomenon arose more frequently during the overhaul phase because he and other firefighters would not be using any face masks or SCBA during the overhaul phase. He confirmed as well that during his tenure with the Fire Department he was issued only one set of gear which never really stayed clean. He indicated that there would be times that they may try to clean the turn out/bunker gear with Dawn detergent, but that was never done while wearing any additional protective gear and was typically done in station.

He testified that the byproducts of combustion during structure fires which again included residential structures as well as commercial structures but often included acrollyn; cyanide; benzene; and hydrogen cyanide. These were most common in residential structure fires and were known to be common byproducts of combustion of household items found in most homes. He further testified that the types of exposures that he and the Deceased encountered while fighting fires, were typical of firefighters, but was not something to which and others within the firefighting community would be typically exposed to other than in the workplace environment.

### **David Rierson**

David Rierson's deposition testimony was received as Claimant's Exhibit S. Chief Rierson is currently the Fire Chief for the city of Marshalltown, Iowa where he has been chief for over two years. Prior to becoming the fire chief of the city of Marshalltown, he was employed by the Southern Platte Fire Protection District out of Parkville, Missouri. He worked there for roughly six and a half years and was the Division Chief in charge of training and professional development. Prior to working for Southern Platte Fire Protection District, Chief Rierson worked for the City of Gladstone from April, 1989 through June, 2008. When he initially began working for the City of Gladstone, it was again during the period of time when there was no

specific fire department but rather, he served as a Public Safety Officer. He worked in both fire, EMS as well as law enforcement. He was promoted to the rank of Corporal in 1994. When the City of Gladstone formally adopted separate fire and law enforcement departments, he was retitled as a Captain within the fire division in approximately 1996 and was promoted to Battalion Chief in approximately 2004 which was the rank he held until leaving in 2008. Prior to working for the City of Gladstone, he had worked for the City of Mitchellville in Iowa from roughly 1984 through 1989. While working for the City of Mitchellville, Iowa, he served as a firefighter, Lieutenant, and paramedic.

He did not receive his first formal fire fighting academy certification until he began working for the City of Gladstone in 1989. During his training he testified that he was taught by instructors at the academy regarding types of exposures in the workplace while firefighting they discussed heat, fire, combustion, toxic substances, etc. They were taught about the byproducts of combustion that would be released as well as particulate matter and carbon monoxide poisoning. He specifically recalls being taught about hydrogen sulfide and other chemicals that were potentially toxic. They were then taught how to use SCBA and what types of injuries your respiratory tract would suffer due to thermal injuries, meaning the breathing in of hot air and gases during firefighting. He recalls that the academy taught him about a lot of byproducts of combustion regarding hydrogen sulfide, hydrogen cyanide, potassium chloride as examples. Neither he nor any other individuals with whom he trained were taught about the potential health risks that would occur as a result of these exposures.

When he began working for the City of Gladstone in 1989 he testified that his assignment was primarily in the ambulance and would carry fire gear (bunker gear) and SCBA in the ambulance. He testified that regarding the overhaul phase, that was something that he and all other firefighters participated in after an initial fire was knocked down. When he first began working for the City of Gladstone, he recalls that the air bottles that were provided were 30 minute bottles that would typically last no more than 15-20 minutes depending on how hard a firefighter would be breathing or working during a suppression and overhaul phase. He testified that the protocol while working for the City of Gladstone when approaching a fire suppression situation would be to first put on protective equipment and SCBA and listen to the directions from the commander at the scene. He discussed that there were different zones within the initial firefighting phase including a warm zone, hot zone and cold zone. The hot zone would be where actual firefighting was taking place; a warm zone was the area where fire trucks and other apparatus would be parked to put on gear and dislodge fire hoses; and the cold zone would be anything where that activity was undertaken. Although firefighters would not typically be wearing SCBA in a cold zone or the warm zone, he does recall that there would be combustible gases and other particulates to which they would be exposed in the warm zone. And that in these areas one would typically not wear any SCBA.

During the overhaul phase, he testified that he and other firefighters for the City of Gladstone would typically be wearing their coats, protective pants, boots and helmet and gloves. He indicated that they would sometimes still be wearing their NOMEX Hood but the majority of the time they would not be worn once the fire was knocked out. He testified that there was no specific policy in place regarding the use of SCBA during the overhaul phase and due to the size and weight of the equipment, that gear was typically taken off during overhaul. When he went

through the academy, he was taught that during the overhaul phase, firefighters would be tearing out walls and using axes, pikes, as well as other heavy equipment. He does not recall that at any time during his academy training, discussion by any of his instructors regarding the toxicity or any exposures to toxins or other particulate matter at fires. He does recall that the bigger discussions related to the effects of the diesel fumes in the fire stations when trucks were running. He recalled a significant issue with diesel fumes and soot on the walls of the station as well as on the firefighting equipment. He specifically recalls that it became a big issue because the diesel exhaust covered everything in the fire station.

Chief Rierson recalls having worked with the Deceased for the entirety of his career on the same shift other than for the last four years with the City of Gladstone. There was some temporary transfers but recalls having worked with him for roughly 14-15 years of his time at the City of Gladstone on the B shift. He worked the B shift which was the middle of the three shifts that the City employed. He primarily worked at Station 2 due to it housing the Ambulance and because of his primary responsibilities of working EMS, he rode in the Ambulance and was stationed at Station 2. At the time he worked there, Station 2 housed approximately four vehicles including the two ambulances, one pumper truck and one ladder truck. He recalled that roughly three of those vehicles were diesel operated and one was gasoline. After 1991, all of the vehicles at the station were diesel engines. When he worked there, there was no ventilation system (the Plymovent system). It was until 1994 or 1995 when the Plymovent system was installed. As such, prior to roughly 1994 or 1995 the diesel engines would be running constantly between the time it was started up and when it returned to the station when it was being backed in and prior to the vehicle being shut off. The only thing that separated the sleeping area from the bay where the vehicles were kept was a door and it was not sealed to keep out diesel exhaust. He specifically recalls smelling diesel fumes and other diesel byproducts coming from the garage and/or bay area while in the sleeping facilities. Prior to the Station 2 being enlarged in the 1990's both the kitchen and the sleeping were all in one area just off the apparatus bay again, without any way to keep diesel exhaust from infiltrating the sleeping area and kitchen. The only instructions he recalls having received from anybody from the City of Gladstone regarding the operation of diesel vehicles was to turn on some sort of a fan whenever the diesel trucks were being started in preparation to arrive at a fire scene. These were to be used to evacuate the diesel fumes out of the station. He did not recall any specific policy in place by the City of Gladstone regarding the ventilation of diesel exhaust. Since that time, and during his work as the Fire Chief for the City of Marshalltown, Iowa, Chief Rierson has received considerable education regarding the byproducts of diesel combustion as well as byproducts as combustion as a whole. He specifically recalled in 2007 and/or 2008, that the IAFF began working on trying to eliminate firefighter illnesses and death. In 2007 the University of Cincinnati paper came out relating to exposures for and the development of cancer. Regarding diesel combustion, he has learned that the byproducts of diesel combustion include formaldehyde, carbon dioxide, sulfur, as well as benzene.

With respect to the type of gear that he wore, Chief Rierson recalls the pants, the coat both of which would have been made of a Kevlar outer shell with a vapor barrier and then a thermal liner inside of it. The helmet would have a chin strap and then typically a Nomex hood that you pulled on over your hood to protect your neck and ears and then the SCBA would be put on, followed by gloves. The type of boots that were worn at that time were structural firefighting

boots which were rubber and had a steel shank and steel toes. During his years working for the City of Gladstone, he had only one set of gear that was provided by the City. Like the other witnesses who had worked with the Deceased, he too had to carry his bunker gear in his personal vehicle at all times in the event that there was a fire call or other emergency requiring the use of his equipment. Later on in his career, the gear would be stored in the fire bays at the station.

Following a fire suppression and overhaul, Chief Rierson specifically recalled how his gear would be covered in soot and would have chunks of fiberglass insulation on their gear. He would also have mud and other particulate matter. He testified that the gear that he was issued, specifically the pants and jacket, retained nearly all your heat and did not allow for heat escape from the body. Once all of the gear was placed on your body, he recalled that it weighed approximately 42-44 lbs. Due to the construction of the rubber boots, his feet would sweat profusely and water from firefighting would also run down into your boots. Following suppression, Chief Rierson recalls that the gear would be cleaned in a couple of different ways. One, they would take the gear back to the fire station after cleaning off the hose itself and take off the clothing and drape it over a chair and then take a hose to it and rinse it off. If extremely dirty, Chief Rierson and other firefighters would take Dawn dish soap and a floor broom and would try to clean it in that manner. On other occasions, depending upon how vigorous the fire suppression was, they would hose one another off at the actual fire scene. There was no specific decontamination area at the fire station.

During his time as Battalion Chief for the City of Gladstone between 2004 and 2008 he did not recall there being any meetings or other discussions with City officials regarding the mandatory use of SCBA during overhaul phase of firefighting. He testified that the only type of monitor that was being used for the safety of firefighters during an overhaul phase, was the carbon monoxide detector which again, tested for permissible levels of carbon monoxide in the air. Beyond that, there were no additional monitors to check for any other toxins in the air. He confirmed that the carbon monoxide detectors were only good for detecting carbon monoxide but no other contaminants, carcinogens or other toxic substances. Like the other witnesses, he also recalls the phenomenon called black snot and recalled in particular that every time he took a shower following a fire suppression he would blow his nose and have all of this black soot that would come out and that he would also cough it up at times. He did not recall that there were any recalls or other maintenance on the SCBA issued to him or other firefighters including the Deceased due to defective face mask or other things associated with the SCBA. He merely recalls that there would be equipment failures, but nothing specifically recalling a particular product or other device being used by the firefighters. His opinion was that the black snot phenomenon was due to firefighters being active in the overhaul phase of the fire or helping dig a fire out in the investigation phase. During the investigation phase, which was typically undertaken long after the overhaul phase was completed, Chief Rierson or the Deceased would be called in to help the fire inspector to determine what the cause of the fire was. Again, he recalled digging through debris moving it and stirring up particulate matter, but never wearing any sort of protective equipment or SCBA. He recalls doing that with the Deceased. Regarding the types of melted products that he would typically encounter at a residential structure, he would encounter melted plastic, bottles of cleaning agents, bottles of poison, laundry detergents, bleach, Drano, and any other common household items that would be stored in a kitchen or bathroom under a sink. He also recalled being exposed to pressure treated deck wood when there would be

deck fires, charcoal that was not being properly disposed of by individuals. During car fires, he recalled being exposed to burning gasoline, oil as well as plastic, especially from the melting tires.

Subsequent to his work with the City of Gladstone and when he began working for the Southern Platte Fire Protection District, he began to institute safety training for the firefighters and the Southern Platte Fire Protection District regarding exposures during firefighting. He instituted the safety measures because of literature that come out from the IAFF and the IAFC (International Association of Fire Chiefs) regarding research on firefighter cancers. They changed their policies regarding when a firefighter could come off of air during a structure fire as well as the permissible exposure limits for carbon monoxide. They also began to specifically monitor and test for hydrogen cyanide which like carbon monoxide is beyond a certain permissible exposure limit, requiring the firefighters to continue to use the SCBA.

Regarding the Deceased, Chief Rierson testified that he was a personal friend of David Cheney for roughly 20-25 years. He had first hand knowledge of the types of fires that the Deceased was fighting and exposed to as well as his use of SCBA and other personal protective equipment. He recalled that during the overhaul phases, unless the carbon monoxide levels were too high, both he and the Deceased would not be wearing SCBA. Being personal friends with the Deceased, he testified that the Deceased did not engage in any personal hobbies outside of work that involved welding, burning of materials on personal property or other types of activities typically encountered during firefighting. With regard to the practices and procedures employed by the firefighters in the City of Gladstone, including Chief Rierson and the Deceased, specifically relating to the cleaning of gear the activities engaged in at Station 2, the location of the fire trucks, ambulances, pumpers, ladder trucks as well as the practices followed at fires during suppression, overhaul and inspection phase, that these were all policies, procedures, and customs that all other firefighters, including the Deceased, would follow. Chief Rierson finally testified that as a result of his 31 years serving in the firefighting field, and based upon his experience, education within the firefighting field as well as his training, that there is an inherent risk between the firefighting profession and exposure to toxic chemicals causing various types of cancer, one of which was the NHL suffered by the Deceased. He believed that there was no question that as firefighters they are at a greater risk than the average public when it comes to combustion and other particulates and carcinogens found during firefighting scenes. He further testified that both the IAFF and IAFC were undertaking massive efforts to educate people on the risk of firefighting cancers and the various initiatives that had been introduced to try to reduce those exposures and side effects.

He also testified that although he couldn't specifically state what he was exposed to during his time with the City of Gladstone, he couldn't say that he also wasn't exposed to any toxins, particulate matter or other carcinogens. He further testified that the individual firefighters working for the City of Gladstone made decisions as to whether or not they would be wearing their SCBA during the overhaul phase, as there was no policy or mandate in place from the City of Gladstone requiring the use of SCBA. He testified that early on in his career, the emphasis wasn't on the particulate matter as much as it was carbon monoxide which forced the use of their air packs and SCBA. Otherwise, if the carbon monoxide level was below the PEL, then no one was required to wear their SCBA.

Donna Cheney

Donna Cheney testified in person as the substitute claimant and widow of her deceased husband. Mrs. Cheney was married to David Cheney on April 4, 1981 (**Exhibit K**). She had no other marriages other than to her husband. As a result of her marriage she had four children, all of whom were boys. During the 33 years that she was married to him, Mrs. Cheney had considerable experience with the type of work that her husband performed both as a Public Safety Officer and more directly as a firefighter for the City of Gladstone. He began working for the City of Gladstone in approximately 1982 and remained with the City until 2008, when he was forced to retire due to his NHL. For the first part of his career, he worked both as a firefighter and policeman. She recalled that in the early part of the 1980's, he was fighting at least one fire per week even though he served as both a firefighter and law enforcement official. She stated that he was effectively on call 24 hours a day, 7 days per week due to the Public Safety Officer requirements. When he would be serving as a firefighter, he was also on call as a policeman and vice versa. She specifically recalled that as part of his job responsibilities, he was required to carry his bunker gear/personal protective equipment in his patrol vehicle if serving as a police officer and would also carry his firefighting equipment while driving his personally owned vehicle. She recalls that after a firefighting situation, whether it included suppression only plus overhaul that he would often times come home extremely dirty covered in soot and other particulate matter due to firefighting. At that time, she and the Deceased would wash off his firefighting equipment and gear in the front yard and would simply hose it off. She discussed that she did not want to bring his bunker gear or other equipment into their house, due to concerns over contaminants on the equipment. Both she and the Deceased were concerned with contaminating the house with toxins, chemicals, soot, and any other items that had attached themselves to his firefighting equipment. At that time as well, they would use their home washing machine to wash his firefighting gear, but following such a task, they would typically run empty loads in the washing machine out of fear that toxins and other particulate matter would still be in the washer and they did not want those contaminants and toxins attaching to any of their own clothing or the clothing of their children. She used the term cross-contamination to describe this effect and did not wish to have his contaminated clothing attaching toxins and other contaminants to their family clothing. She testified that for a long period of time, the family had a conversion van and that the bunker gear would be stored in the back, without any system to block the smell of the gear from spreading throughout the van. She recalls that when the gear would be stored in other family vehicles, there would typically be a very acrid aroma associated with where the gear was stored, attesting to the infusion of the burning chemicals and contaminants at the fire scenes.

She further recalls that after the Deceased would be fighting fires, and would come home, he would immediately take a shower. She often times found that he would sometimes take up to two showers in an attempt to rid his body of the smells and other aromas that had been infused in his skin after fighting a fire. These merely smoke smells, but also sweat as well as chemical odors that she then described as acrid. She testified that he did not smoke and did not consume excessive alcohol and was simply a social drinker. She also confirmed that he did not engage in the use of any illicit drugs. She described her husband's work ethic as unquestionable and above reproach. She further noted that he attempted to stay very healthy when he wasn't working, focusing on the types of food that he ate as well as exercising and working out to stay in shape.

She confirmed that much as the other witnesses did at the trial, that he only had the one set of bunker gear and equipment issued to him by the City. She recalled that when the gear was torn or had stains or rips that it had to be specially repaired at facility that would accept torn firefighter gear. There would be times she would attempt to repair the gear herself if there were any stains or minor tears, but any significant rips required that the gear be specifically sent to this facility for industrial strength repairs. She recalled that the facility would not accept the gear unless it had been industrially cleaned to avoid contamination of their facility with anything attached to the bunker gear. She further recalled that there were multiple times where she and the Deceased would spend their own money to replace equipment that had worn out or had not been replaced by the City. In particular, she recalls having to replace on numerous occasions the NOMEX hood worn by the Deceased underneath his mask and helmet. After every fire, she recalled that the NOMEX hoods would be stained with sweat, soot, black matter as well as other particulate matters that were picked up and absorbed during the fire. She specifically recalls that whenever she would help her husband clean his gear, that she was extremely careful about touching or cleaning the gear so as to not cross-contaminate anything she was wearing or to infuse it into her skin.

Mrs. Cheney further testified that there would be many years where the Deceased would personally buy other equipment than the NOMEX hood, including gloves, if they were not in good condition. Again these were costs picked up by the Deceased as the City was not providing him with this additional equipment or replacement equipment. She testified that when she did help the Deceased clean his gear that although trying to be careful, her hands would be sticky and she had to wash off her hands immediately because of the residue and contaminants that attached to his firefighting equipment after fighting a fire. Prior to the symptoms beginning sometime in late 2007, she testified that the Deceased had an incredible work ethic and rarely missed work other than for time to spend with his family on vacations and other personal trips. He was an active Boy Scout leader and engaged in many outdoor activities with his children. When his problems began in late 2007, he was having severe headaches and nausea it was not until January 2008 when he was eventually told by doctors that he had an advanced cancer and to immediately begin treatment. He ultimately underwent radiation and chemotherapy treatment as well as a stem cell transplant procedure. In early 2013, his NHL had regressed and he was told at that time that he would need another stem cell transplant. Ultimately, he passed away in May 2014 after battling his cancer. Lastly, when reflecting upon his clothing and the amount of time he spent fighting fires, she did recall that her husband's fire gear smelled horrible like burnt plastic and had a black charcoal wood appearance to it and was damp and musty. She specifically recalls how this smell and the filth was in the trunk of the police car that he would drive as well as his personal vehicle. She recalls him fighting multiple fires in one shift and specifically four in one day. She also remembers there being one day when he was on off shift, and where he was called in to fight a fire for 8-10 hours.

### Expert Witnesses

#### P. Brent Koprivica, M.D.

Dr. Koprivica conducted his independent examination of the Employee while he was still alive, on January 25, 2011. Dr. Koprivica is Board Certified by the American Board of

Preventative Medicine and Occupational Medicine; Board Certified in Emergency Medicine; and has a Masters in Public Health with an emphasis in occupation and environmental medicine. Dr. Koprivica conducted an evaluation of the medical records that were available to him at that time, including treatment records from various oncologists and other cancer specialists. He noted that the Employee's past medical history was significant only for a closed head injury as a child. He also had a minor 5% settlement of the left knee due to a 1999 work injury and a 2% permanent partial disability to the BAW for a back injury in 2002. He has a prior fracture of his finger and a motor vehicle accident in June 2010 which resulted only in a strain to his back. At that time, the Deceased had been diagnosed with NHL. He confirmed the Deceased had never smoked and rarely drank alcohol and did not use illicit drugs. He noted a family history positive for lung cancer and heart disease.

He opined that the Deceased's exposure to risk as a firefighter with resultant exposures during that employment was the direct, proximate and prevailing factor in the development of the NHL. Medical literature attesting to the increased risk of NHL within firefighters was reviewed by Dr. Koprivica as part of his examination. He believed the Deceased to be at MMI as of January 18, 2008. At that time, he assigned a 50% BAW disability due to the NHL. He found him to be totally occupationally disabled as a firefighter. Although the Deceased had completed truck driver training, he believed that the Deceased would realistically be permanently and totally disabled on the open labor market as a result of the injuries of January 18, 2008 considered in isolation. He did not find any Second Injury Fund liability.

**James E. Lockey, M.D.**

Dr. Lockey examined the medical records of the Deceased and issued his findings in his October 2, 2013 report. Dr. Lockey is board certified by the American Board of Internal Medicine, with subspecialties in both pulmonary disease and occupational medicine. He has been separately certified a "B" reader for the International Classification of Radiographs for Pneumoconiosis. In 1986, he became a tenured Associate Professor in Environmental Health at the University of Cincinnati College of Medicine in Cincinnati, Ohio. In 1993, he became a tenured professor of environmental health. In 2004, he was elevated to professor, Department of Internal Medicine (pulmonary division) at the University. In 2006, he appointed professor College of Allied Health Sciences, Department of Rehabilitation Sciences. Dr. Lockey's career has spanned multiple decades but has had a focus on occupational and environmental pulmonary disorders and has been an investigator on numerous clinical research studies including pulmonary effects of occupational exposure to various environmental factors most recently dealing with diesel exhaust exposure and risks in young children as well as morbidity and mortality studies on firefighters. He also has a significant background with respect to asbestos related diseases and illnesses due to exposure to vermiculite. Dr. Lockey was one of the participating doctors in meta-analysis regarding cancer risks with firefighters. As with other lay and expert witnesses, his history demonstrated that the Deceased had no reported history of cigarette or alcohol abuse. Dr. Lockey was of the opinion that the Deceased's follicular lymphoma was diagnosed in the Deceased, was compensable as a result of his employment as a firefighter for 19 years. He noted that this type of cancer was the class of cancers listed under NHL which has been associated with the firefighter profession and is considered an occupational disease. He cited to his study which identified an increased risk for NHL in firefighters compared to the general population. He noted

that the elevated risk for NHL was consistent across epidemiology study designs. When the risk assessment was calculated using the study the summary risk estimate was statistically elevated at 1.51 (Lockey depo, p. 27), where 1 would be considered the norm. Based upon this extensive meta-analysis study, it was Dr. Lockey's opinion that the determining factor that resulted in the Deceased development of NHL was his 19 year employment as a firefighter. It was his opinion that the cancer arose within a reasonable degree of medical probability due to the exposure to complex mixtures of pyrolysis products including smoke, gases, mists, and fumes of an organic and inorganic nature given off during combustion of commercial and residential properties and motor vehicles. He further noted that these types of exposures associated with the firefighter profession include known carcinogens such as benzene, asbestos, black soot, and diesel exhaust. He noted that potential routes of exposure as a firefighter include through the respiratory tract particularly during the overhaul phase of firefighting activity respiratory protection is not typically utilized, as well as skin exposures such as with black soot. Ultimately, it was his opinion that the prevailing factor with respect to the Deceased's development of NHL was his 19 year career as a firefighter. He further believed that it was a prevailing factor in relation to any other factor that caused the development of the NHL and the associated disability related to that condition. It was his opinion as well that the Deceased had been permanently and totally disabled from a substantial gainful employment as a result of the development of the NHL. Lastly, Dr. Lockey was of the opinion that the Deceased had no non-occupational factors that he would consider a prevailing factor in regard to his development of his occupational development of NHL.

On cross-examination, Dr. Lockey admitted he is not an oncologist (Ex. O, pg. 39), and admitted there is a statistical correlation between morbid obesity and NHL (1.48) and, further, that NHL statistical correlation that is nearly identical (1.48 vs. 1.51) as the correlation between firefighters in general and various forms of cancer (pg. 48). Dr. Lockey admitted there are different types of NHL including B-Cell, T-Cell and NK version, but was unaware of the type of NHL that the claimant had (p.48, 49).

Dr. Lockey testified in his meta analysis of 32 studies of 110,000 firefighters, which resulted in 1,800 deaths for cancer and 30 of those deaths of which were NHL. The data was nonspecific as to whether any of 30 NHL deaths were from follicular NHL (p. 55). Dr. Lockey further explained a statistical correlation of 1.5 is statistically significant but admitted 1.3 to 1.5 is a weak correlation and 1.5 to 3.0 is a moderate statistical correlation (p. 56, 57). Dr. Lockey testified statistical correlation does not make something true, but it is an acceptable tool for empirical studies (p. 61). Likewise, morbid obesity (1.48) could not be ruled out, with a statistical correlation nearly identical to occupational exposures of firefighters of all cancer exposures, and Dr. Lockey opined that firefighters in general tend to be less obese than the general population (p. 65). Dr. Lockey finally admitted that statistical significance of age is a factor in contracting NHL rises as one gets older (p. 66, 67).

**Phillip Bierman, M.D.**

Dr. Bierman is an oncologist, on staff at the University of Nebraska Medical Center and was the treating oncologist for David Cheney. He serves as a professor in the internal medicine

department of the University of Nebraska Medical School and is board certified in internal medicine, oncology and hematology.

Dr. Bierman has authored or co-authored over 200 peer reviewed articles, with the majority of those articles involving studies of lymphoma. He has authored or co-authored 50 book chapters dealing with lymphoma and cancer treatments. He has participated in 200 scholarly abstracts, the majority of those involving lymphoma. He has made over 240 presentations at meetings and seminars with the majority of the presentations involving the treatment and diagnosis of lymphoma.

The doctor provided a report on October 22, 2010 with his opinions on whether Mr. Cheney's disease was related to his job duties as a firefighter. The report outlines the treatment he gave Mr. Cheney. He also provides his opinion on whether the non-Hodgkin's lymphoma is related to his employment as a firefighter. He stated it was impossible to know the cause of Mr. Cheney's lymphoma and did not relate it to his previous employment.

Dr. Bierman's report was admitted into evidence without objection and the claimant's counsel chose not to cross-examine Dr. Bierman to challenge any of his opinions.

**Neel Shah, M.D.**

Dr. Neel Shah testified by deposition on June 1, 2015. Dr. Shaw is a medical doctor in private practice in the State of Indiana. He received his medical degree from Wayne State University. He completed a residency in internal medicine at the University of Illinois and completed a fellowship at Rush University Medical Center. He is triple board certified in internal medicine, medical oncology and hematology. He has done research in the area of non-Hodgkin lymphoma. He has published articles specifically concerning non-Hodgkin lymphoma. Formerly he was an assistant professor at Rush University Medical Center.

In preparation for his opinions, the doctor was provided with medical records, which he reviewed. He also researched relevant scientific materials for the causation of non-Hodgkin lymphoma in peer reviewed medical journals as well as the American Society of Hematology and Medical Oncology. He was provided with, and read the deposition of David Cheney.

From his review of the medical records he formulated a medical history on the patient. He indicated that Mr. Cheney worked as a firefighter and was diagnosed in January 2008 with follicular lymphoma, the most common type of non-Hodgkin lymphoma. The records revealed that Mr. Cheney had a body mass index of 44, which placed him in the National Institute of Health classification of being morbidly obese. After his diagnosis, the patient underwent multiple courses of chemotherapy, the last one he reviewed took place in October 2012. He explained that follicular lymphoma is a disease of the lymphatic system. The lymphatic system is a collection and pathway of white blood cells which helps the body fight off infection. Follicular lymphoma is not a disease of the respiratory tract or cardiovascular system.

From his review of the medical literature, he was unable to find any peer reviewed medical journal articles which indicated environmental exposures caused follicular lymphoma. He did locate articles which linked obesity to development of non-Hodgkin lymphoma. His opinion was that there was no causal relationship between work as a firefighter and development of follicular lymphoma. Further, he was unaware of any peer reviewed medical literature, and unable to find any peer reviewed medical literature which indicated a link between environmental exposures and development of non-Hodgkin lymphoma.

Dr. Shah in his testimony reiterated there is no known cause for NHL and, specifically, follicular NHL. Dr. Shah did indicate a white male is two times more likely to develop NHL than that of black or Asian males. Dr. Shah also found that obesity is a significant contributing factor to NHL as well as advanced age. Dr. Shah testified there are 85 types of lymphomas and of NHL there are 30 types (Depo. p. 13). Dr. Shah testified there were no peer review articles to establish the connection between environmental exposures as a cause for NHL (Depo. p. 14). Dr. Shah found no medical literature to establish a relationship between firefighters and NHL (Depo. p. 17).

### RULINGS OF LAW

The Missouri workers' compensation Act underwent substantial changes on August 28, 2005. The burden of establishing any affirmative defense is on the employer. The burden of proving an entitlement to compensation is on the employee, §287.808 R.S.Mo. Administrative Law Judges are directed that they shall weigh the evidence impartially without giving the benefit of the doubt to any party when weighing evidence and resolving factual conflicts, and are to construe strictly the provisions. §287.800 R.S.Mo.

Under Missouri law, it is well-settled that the claimant bears the burden of proving all the essential elements of a workers' compensation claim, including the causal connection between the accident and the injury. Grime v. Altec Indus., 83 S.W.3d 581, 583 (Mo.App. W.D.2002); *see also* Davies v. Carter Carburetor, 429 S.W.2d 738, 749 (Mo.1968); McCoy v. Simpson, 346 Mo. 72, 139 S.W.2d 950, 952 (1940); Royal v. Advantica Rest. Grp., Inc., 194 S.W.3d 371, 376 (Mo.App. W.D. 2006) (citations and quotations omitted). "Determinations with regard to causation and work relatedness are questions of fact to be ruled upon by the Commission." Id. (quoting Bloss v. Plastic Enters., 32 S.W.3d 666, 671 (Mo.App. W.D.2000)). While the claimant is not required to prove the elements of his claim on the basis of "absolute certainty," he must at least establish the existence of those elements by "reasonable probability." Sanderson v. Porta-Fab Corp., 989 S.W.2d 599, 603 (Mo.App. E.D.1999) (*citing* Cook v. Sunnen Prods. Corp., 937 S.W.2d 221, 223 (Mo.App. E.D.1996)). Furthermore, the element of causation must be proven by medical testimony, "without which a finding for claimant would be based on mere conjecture and speculation and not on substantial evidence." Grime, 83 S.W.3d at 583 (*citing* Jacobs v. City of Jefferson, 991 S.W.2d 693, 696 (Mo.App. W.D.1999)) (emphasis added); *see also* Shelton v. City of Springfield, 130 S.W.3d 30, 38 (Mo.App. S.D. 2004).

Does the "firefighter causation standard" apply? The first issue the court must determine is whether the case is controlled by Mo. Rev. Stat. 287.067.6, the so called "firefighter rule". This provision of the statute states:

“Disease of the lungs or respiratory tract, hypotension, hypertension, or disease of the heart or cardiovascular system, including carcinoma, may be recognized as occupational diseases for the purposes of this chapter and are defined to be disability due to exposure to smoke, gases, carcinogens, inadequate oxygen, of paid firefighters of a paid fire department. . . if a direct causal relationship is established, . . . “

Subsection 6 provides a different, and arguably a less stringent, causation standard than is generally required to prove causation of an “occupational disease”. The section enumerates certain diseases which are normally noncompensable but are compensable for firefighters if they are shown to have been directly caused by a firefighter's exposure to smoke, gases, carcinogens, inadequate oxygen, or psychological stress. George v. City of St. Louis, 162 S.W.3d 26, 31 (Mo. App. E.D. 2005). The provision applies to paid firefighters of paid fire departments. The evidence is clear that Mr. Cheney is a paid firefighter of a paid fire department. However, the analysis of the statute does not end there. The statute refers specifically to diseases “of the lungs or respiratory tract, hypotension, hypertension, or disease of the heart or cardiovascular system”. The court must next determine whether the disease which affected Mr. Cheney, follicular NHL, falls under the list of delineated diseases.

In interpreting the statute, this court is required to construe the statutory language strictly. Mo. Rev. Stat. 287.800. Strict construction means that a statute can be given no broader application than is warranted by its plain and unambiguous terms. The operation of the statute must be confined to matters affirmatively pointed out by its terms and to cases which fall fairly within its letter. Robinson v. Hooker, 323 S.W.3d 418, 423 (Mo. App. W.D.2010); State ex rel KCPL v. Cook, 353 S.W.3d 14, 20 (Mo. App. W.D. 2011).

There is no evidence in the record to establish that follicular lymphoma is a disease which falls within the purview of this provision. Dr. Shah, in his testimony, describes the nature of the disease. It is a disease of the lymphatic system, which is responsible for producing red blood cells, white blood cells, and platelets. It is not a disease of the lungs or respiratory tract. It is not hypotension, hypertension, or disease of the heart or cardiovascular system. It is not a carcinoma. A carcinoma is a tumor in the epithelial system. Steadman's Medical Dictionary. Similarly, Dr. Lockey described the condition as a tumor of the immunological forming tissue in the body. Neither doctor indicates that the disease is one of the lungs or respiratory tract, hypotension, hypertension or disease of the heart or cardiovascular system. As such the court finds that subsection 6 of Mo. Rev. Stat. 287.067 is not controlling and does not apply to this case.

**Required Elements to Show Occupational Disease.** In this case, the employee is seeking recovery for an occupational disease. The Missouri Workers' Compensation Act defines an “occupational disease” as “an identifiable disease arising with or without human fault out of and in the course of employment.” Mo. Rev. Stat. 287.067. The employee's claim is that he was exposed to unknown agents in performing his work with the City of Gladstone and that these exposures directly and proximately caused him to develop follicular lymphoma. In addition, the employee must prove that his occupational exposures were the prevailing factor in causing his

medical condition and disability. The “prevailing factor” is defined as the primary factor in relation to any other factor causing the medical condition and disability.

In a worker’s compensation claim, the injured party bears the burden of proof to show that the injury was compensable under the terms of the act. Johme v. St. John’s Mercy Healthcare, 366 S.W.3d 504, 509 (Mo. banc 2010). The burden of proof consists of two elements: the burden of production and the burden of persuasion. White v. Director of Revenue, 321 S.W.3d 298, 304 (Mo. banc 2010). To satisfy that burden, the employee must produce evidence of a direct causal connection between the conditions under which the work was performed and the occupational disease. Since the cause and development of an occupational disease is not of common knowledge, there must be medical evidence of direct causal connection. The question of causation is one for medical testimony, without which, a finding of causation would be based on mere conjecture and speculation, not on substantial evidence. Vickers v. Mo. Dept. of Public Safety, 283 S.W.3d 287, 292 (Mo. App. 2009); Smith v. Capital Regional Medical Center, 412 S.W.3d 252, 259 (Mo. App. W.D. 2013).

The parties presentation on medical causation is presented on two differing tracks of analysis. The claimant’s presentation of evidence is based on the scholarly meta analysis done in 2006 involving 32 separate case studies of cancer in firefighters. Dr. Lockey, the expert involved with the compilation of that meta analysis testified at length by deposition. Dr. Lockey in his approach to forming his opinions used the statistical analysis of the meta analysis and his observations or conclusions of the occurrence of cancers of all types in firefighters. The study done in 2006, while from a scholarly empirical perspective, is questionable as being out of date, for meta analysis purposes at the time when completed, resulted in the conclusions derived. Dr. Lockey admitted his qualifications do not include oncology or the treatment of cancer patients or any expertise in the field of oncology. Dr. Lockey’s testimony and the value of that testimony dealt with the statistical significance of cancers of all types in firefighters. Of note in the data presented which encompassed 32 studies and approximately 110,000 firefighters, 1,800 cancer deaths were reported, 30 of which were from non-Hodgkin’s lymphoma with no further breakdown as to the type of non-Hodgkin’s lymphoma. Dr. Lockey, nonetheless, felt able to opine a significant statistical correlation between occupational exposures of firefighters and, although not personally acquainted or familiar of Mr. Cheney, made the causal connection based on his occupation and the types of exposures that the parties could agree Mr. Cheney was exposed to. Dr. Lockey found a correlation of 1.51 a statistical significance in the low to moderate range of statistical correlation to be sufficient to establish in his mind an opinion the medical causal connection to determine that Mr. Cheney’s non-Hodgkin’s follicular lymphoma was caused by his occupational exposure as a firefighter.

Dr. Lockey on cross-examination had to admit that the presence of morbid obesity had nearly the same statistical significance (1.48) of incidences of cancer as exposures to environmental conditions (1.51) and all cancers in firefighters. Dr. Lockey further had to admit that a white male is two times more likely to develop non-Hodgkin’s lymphoma than black or Asian males and that age as it increases is also statistically significant as a cause of non-Hodgkin’s lymphoma. Lastly, Dr. Lockey had to admit that there is no known cause for non-Hodgkin’s lymphoma.

The employer and insurer's presentation of evidence was not one of a statistical nature encompassing meta analysis studies of environmental exposures but dealt with the claimant's treating oncologist, Dr. Bierman. Also, Dr. Shah, an expert certified in the fields of internal medicine, hematology and oncology, opined that peer review studies of non-Hodgkin's lymphoma and, specifically, follicular non-Hodgkin's lymphoma has no known cause. While Dr. Bierman's opinions are brief in their nature, based on his report only and the claimant's choice not to cross-examine the doctor on the formation or basis of his opinions, Dr. Shah's deposition testimony is much more expansive on the known contributing factors that can cause non-Hodgkin's lymphoma. Dr. Shah in his opinion found no causal connection between environmental exposures and freely admitted he did not participate or examine the meta analysis presented by the claimant of the study involving cancer and firefighters only. Dr. Shah from a medical and oncology based peer review of medical literature opined that various contributing factors are known to have statistical significance in the presence of non-Hodgkin's lymphoma. Dr. Shah indicated those contributing factors to be morbid obesity, race, age, diet, exercise and others to varying degrees of statistical significance. Dr. Shah concluded, as did all experts, that there is no known cause for non-Hodgkin's lymphoma.

While statistical analysis is sufficient to satisfy burden of production of proffered evidence, Smith v. Capital Regional Medical Center, 412 SW 3<sup>rd</sup> 252 (Mo. App. WD 2013), the claimant's position that a statistical significance as advanced by Dr. Lockey of a correlation of low to moderate statistical significance is sufficient to carry their burden of proof, I must disagree. Claimant's statistical correlation does not equate causation. There is evidence to suggest that morbid obesity -- and I note that the claimant had a body mass index of 44 and a weight of 311 pounds on a 5 foot 10 inch frame and was determined to be morbidly obese -- is nearly as statistically significant as Dr. Lockey's conclusions on environmental exposures in finding cancer as a broad generalization in firefighters. To a lesser degree, other contributing factors such as the claimant's race being a white male, his age at the time of diagnosis, and dietary and exercise which were factors never explored in any detail in the evidence presented and are also to lesser degrees significant contributing factors to the development of non-Hodgkin's lymphoma.

After considering the voluminous evidence in this record as presented and acknowledging the tragedy which was the demise of the claimant, Mr. Cheney, I find the claimant has failed to meet his burden of proof to establish not only the claimant's entitlement to the firefighter presumption of an occupational disease under the above-mentioned statute but also the failure to meet their burden of proof to establish an occupational disease under Missouri law. I found the parties' choice of presentation of evidence to be frustrating to the Court in that the analysis from the claimant's perspective of an environmental exposure meta analysis study leading to statistical data of cancers of all nature in a large number of firefighters was of questionable value to the determination of medical causation of Mr. Cheney's presentation of non-Hodgkin's lymphoma of follicular nature. I find the opinions of Dr. Bierman, brief as they were with only his report admitted into evidence, as well as the report and deposition testimony of Dr. Shah to be more convincing based on not only their expertise in the area and voluminous medical research and publication in the area of oncology as a field and non-Hodgkin's lymphoma as a specialty to be more convincing than the meta analysis data presented by the claimant.

I make no specific mention of the opinions of Dr. Koprivica who, when presented with the medical records and the opinions of Dr. Lockey, forms his own conclusions on medical causation for which he has neither the expertise or credibility to give opinions of any significance which would overcome those of Drs. Lockey, Bierman and Shaw.

I find, therefore, that the tragic demise of Mr. Cheney was not the result of any occupational exposure in his work as a firefighter and must and thereby do deny benefits under the Missouri Workers' Compensation Act.

I certify that on 6/8/17,  
I delivered a copy of the foregoing award  
to the parties to the case. A complete  
record of the method of delivery and date  
of service upon each party is retained with  
the executed award in the Division's case file.

By CP

Made by: Mark Siedlik  
Mark Siedlik  
Administrative Law Judge  
Division of Workers' Compensation

