



**OFFICE OF THE MEDICAL EXAMINER**  
701 W. Jefferson St.  
Phoenix, AZ 85007

**MEDICAL EXAMINER REPORT**

**DECEDENT:** Joe B. Arthur Quinn Thurston

**CASE:** 13-04432

**DATE OF EXAMINATION:** 07/02/2013

**TIME:** 1310 Hours

**PERSONS PRESENT AT EXAMINATION:**

Lieutenant Tom Boelts, Yavapai Sheriff's Office  
Deputy Jerry Payne, Arizona Forestry Division

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**PATHOLOGICAL DIAGNOSES**

- I. Fire-related injuries:
  - A. Diffuse 2<sup>nd</sup> and 3<sup>rd</sup> degree burns with partial sparing of the distal lower extremities.
  - B. History of being a firefighter caught in a wildfire.
  
- II. Toxicology:
  - A. Carboxyhemoglobin, 19% saturation (pleural fluid).
  - B. Volatiles:
    - 1. Brain: Positive for Benzene and Xylene.
    - 2. Lung: Positive for Toulene and Xylene.
    - 3. Ethanol measured at 0.01 g% (trace amount) and 0.05 g% in the vitreous fluid and cardiac blood, respectively.
  - C. Negative for screened drugs of abuse.

**PATHOLOGICAL DIAGNOSES CONTINUED.**

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**CAUSE OF DEATH:** Fire related injuries

**MANNER:** Accident

9/6/13  
Date Signed

Mark Shelly  
MARK SHELLY, DO  
MEDICAL EXAMINER

- III. Vitreous fluid electrolyte analysis: Non-contributory.
- IV. Evidence of natural disease: None identified.
- V. Postmortem changes: As noted below.

#### **REPORTED CIRCUMSTANCES OF DEATH**

On July 1, 2013, Yavapai County officials requested assistance from the Maricopa County Office of the Medical Examiner with the medicolegal death investigations of 19 firefighters who died in the Yarnell Hill wildfire on June 30, 2013. Under the Maricopa County Manager's authority and direction, the Maricopa County Office of the Medical Examiner examined the firefighters' remains for the purpose of forensic identification and postmortem evaluation. The Maricopa County Office of the Medical Examiner also agreed to provide consultative services to investigating authorities and the Yavapai County Medical Examiner. The Yavapai County Medical Examiner agreed it will certify the firefighters' death certificates. The following Maricopa County Office of the Medical Examiner case numbers were designated for this incident: 13-04425, 13-04426, 13-04427, 13-04428, 13-04429, 13-04430, 13-04431, 13-04432, 13-04433, 13-04434, 13-04435, 13-04436, 13-04437, 13-04438, 13-04439, 13-04440, 13-04441, 13-04442, and 13-04443.

The decedent was involved in fighting a forest fire and sustained thermal injuries.

#### **EXTERNAL EXAMINATION**

The body is received in a zippered body pouch secured by evidence seal number 042611.

#### **CLOTHING AND PERSONAL EFFECTS**

The body is clad in the items of clothing and accompanied by personal effects as detailed in the property inventory list. The body is received in a supine position, accompanied by what is reported to be an emergency fire shelter.

#### **EVIDENCE OF MEDICAL INTERVENTION**

None identified.

#### **EVIDENCE OF TRAUMA**

**Fire related injuries:** There are diffuse 2<sup>nd</sup> and 3<sup>rd</sup> degree burns from the head to the distal lower extremities. There is partial sparing of the distal lower extremities. No definitive soot deposition is identified in the proximal and distal airways.

JOE B ARTHUR QUINN THURSTON

13-04432

## **SCARS, TATTOOS, AND OTHER IDENTIFYING BODY FEATURES**

The tongue is pierced and has a metal barbell style piercing in place. No scars or tattoos are identified.

## **GENERAL EXTERNAL EXAMINATION**

The unembalmed body is that of a male 73 inches in length and weighing 192 pounds. Rigor mortis is present and livor mortis cannot be discerned due to thermal injuries and decomposition changes. There are diffuse changes of decomposition, including skin slippage, marbling, green skin discoloration, bloating, and bullae formation. The scalp hair is brown. The irides are brown and the corneae are cloudy. There are no lesions of the sclerae or conjunctivae. Facial hair is not identified. Dentition is good, both upper and lower. The trachea is in the midline. The thorax is well developed and symmetrical. The abdomen is flat with no palpable intra-abdominal masses. The external genitalia are those of a normal male. There is bloating of the penis and scrotal sac. The extremities are well developed and symmetrical with no significant cyanosis, clubbing, edema or deformity.

## **INTERNAL EXAMINATION**

The body is opened by a standard Y-shaped thoraco abdominal incision. All viscera occupy their appropriate anatomic relationships and demonstrate moderate to severe changes of decomposition. Subcutaneous adipose tissue ranges up to 1.0 cm in thickness over the abdominal wall. Serous surfaces are smooth and glistening throughout. There are no adhesions in the body cavities. There is red-brown fluid in the bilateral pleural cavities.

## **CARDIOVASCULAR SYSTEM**

The 390-gram heart occupies its usual mediastinal site. The external configuration is unremarkable. The epicardial surfaces are smooth and glistening. All major vessels arise in their appropriate anatomic relationships. The coronary arteries arise normally with no significant atherosclerotic stenosis. The myocardium is firm, red-brown without areas of softening, hemorrhage or gross scarring. No abnormal communications exist between the cardiac chambers. The cardiac valves have thin, pliable leaflets. The valve circumferences are appropriate to the caliber of the cardiac chambers. The valve cusps and surfaces are free of fusion or vegetations.

The aorta is of normal caliber with all major arterial branches arising in their appropriate anatomic relationship. Elasticity is normal. The intimal surfaces are smooth without aneurysm formation or dissection. No systemic venous abnormalities or thrombi are present.

## **RESPIRATORY SYSTEM**

The right and left lungs weigh 925 grams and 850 grams, respectively. The upper and lower airways are patent and of normal caliber. The pleural surfaces are smooth and glistening. The parenchyma is well expanded, light pink to dark red-purple, exuding moderate to large amounts of blood and frothy fluid. There are no areas of induration, consolidation, hemorrhage or gross scarring. The pulmonary vessels are patent and of normal caliber.

## **DIGESTIVE/HEPATOBIILIARY SYSTEM**

The oropharynx is grossly normal and unobstructed. The esophagus is of normal caliber with a smooth, white mucosal lining. The gastroesophageal junction is well defined. The stomach has intact mucosal surfaces and the lumen contains approximately 50 mL partially digested food. No areas of ulceration, erosion, or hemorrhage or scarring are present. The small and large intestines are unremarkable. The appendix is present. The lobular tan pancreas is firm, without areas of fat necrosis, gross hemorrhage or space-occupying lesions. The pancreatic ducts are patent and of normal caliber.

The 1625-gram liver has a smooth intact capsule, covering red-brown parenchyma. No localizing masses, lesions or areas of hemorrhage are evident on external or cut surfaces. The intrahepatic and extrahepatic ducts are patent and of normal caliber. The gallbladder contains viscid bile. The gallbladder mucosa is grossly normal.

## **GENITOURINARY SYSTEM**

The kidneys each weigh 125 grams. They are grossly similar. The capsules strip with ease from the smooth, red-brown cortical surfaces. The cortices are sharply delineated from the medullary pyramids. The calyces, pelves and ureters are unremarkable. The renal vessels are patent and of normal caliber.

The urinary bladder contains no urine. The mucosal surfaces are flat and pink-tan. The prostate and seminal vesicles are unremarkable.

## **HEMATOPOIETIC SYSTEM**

The 125-gram spleen occupies its usual anatomic site, with an intact, smooth and glistening capsule covering dark purple, moderately firm parenchyma. Regional lymph nodes have their usual distribution and appearance.

## **ENDOCRINE SYSTEM**

The thyroid and adrenal glands are grossly not remarkable.

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**NECK**

The cervical spine is structurally intact. The hyoid bone and thyroid cartilage are intact. There are no hemorrhages in the strap muscles or soft tissues of the neck. The upper airway is patent.

**MUSCULOSKELETAL SYSTEM**

The bony framework, supporting musculature and soft tissues are unremarkable.

**NERVOUS SYSTEM**

The scalp is reflected in the usual fashion. There are no contusions, lacerations, or abrasions. There is no skull fracture. The 1525-gram brain is covered by thin, clear, delicate leptomeninges. The dura mater and falx cerebri are intact. There is good preservation of cerebral symmetry without flattening of gyri or widening of sulci. Convolutional patterns remain intact. External landmarks are readily identified. There is no evidence of herniation or either diffuse or localized swelling. The cerebral vessels are intact with no evidence of aneurysm or thrombosis. Atherosclerotic changes are not identified. Multiple coronal sections of cerebrum, cerebellum, and brain stem reveal no localized hemorrhages, masses, or lesions. The ventricular system is symmetrical, non-dilated and filled with clear fluid. The basal ganglia are grossly normal. The atlanto-occipital articulation is grossly normal. There is yellow discoloration of the outer and inner portions of the skull.

**TOXICOLOGY SPECIMENS**

Samples of the following are collected and submitted for toxicological testing: pleural fluid, cardiac blood, vitreous fluid, bile, gastric contents, brain, spleen, liver, kidney, lung, and psoas muscle (see Toxicology Report).

**FINAL SUMMARY**

Based on the autopsy findings and investigative history, as available to me, it is my opinion that Joe B. Arthur Quinn Thurston, a 32-year-old male, died as a result of Fire Related Injuries. Per report and investigation, the decedent was involved in fighting a forest fire and sustained thermal injuries. Autopsy examination demonstrated extensive significant burns. Toxicology testing was positive for elevated Carboxyhemoglobin, consistent with the circumstances surrounding the death.

The manner of death is Accident.

MES/ogm

D:07/03/2013

T:07/05/2013

JOE B ARTHUR QUINN THURSTON

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*The Maricopa County Medical Examiner's Office is required by statute (A.R.S. § 11-594(A)(2) and (4)) to certify the cause and manner of death following completion of the death investigation of each case over which it assumes jurisdiction, and to promptly execute a death certificate, on a form provided by the state registrar of vital statistics, indicating the cause and manner of death. The form provided by the state registrar of vital statistics includes five manners of death: homicide, suicide, accident, natural, and undetermined. The determination of manner of death is a forensic determination by the pathologist predicated upon the totality of all then-known forensic evidence and other circumstances surrounding the cause of death; it is not a legal determination of criminal or civil responsibility of any person(s) for the death.*



**Maricopa County**  
Forensic Science Center

701 West Jefferson Street  
Phoenix, Arizona 85007-2908  
Phone: (602) 506-3322  
Fax: (602) 506-1546

July 8, 2013

Mark Shelly, D.O.  
Maricopa County Forensic Science Center  
Phoenix, Arizona

Re: Maricopa County Medical Examiner Case # 13-4432

Dear Dr. Shelly,

On July 2, 2013, a dental examination including dental radiographs was completed at the Maricopa County Forensic Science Center on Medical Examiner Case # 13-4432.

Also on July 2, 2013, I received the dental radiographs of Mr. Joe Thurston from the Horizon Dental Group in Prescott Valley, Arizona for a comparison to Case #13-4432.

Upon comparing the antemortem dental radiographs of Mr. Joe Thurston and the postmortem dental radiographs of Case # 13-4432, a positive identification has been established, meaning that the antemortem and postmortem dental radiographs match in sufficient detail to establish that they are from the same individual.

Sincerely,

*John A. Piakis DDS*  
John Piakis D.D.S., D.A.B.F.O.

Forensic Odontologist  
Maricopa County  
Phoenix, Arizona

MARICOPA COUNTY OFFICE OF THE MEDICAL EXAMINER  
REPORT OF TOXICOLOGICAL EXAMINATION

Case Number: 13-04432  
Decedent: JOE B. ARTHUR QUINN THURSTON  
Date Submitted: 07/02/2013  
Report Date: 07/26/2013

Specimens Collected: VITREOUS, BLOT/FILTER PAPER, KNOWN HEAD HAIR,  
NASAL SWAB, CARDIAC BLOOD, PLEURAL FLUID , BILE,  
GASTRIC, LIVER, SPLEEN, KIDNEY, PSOAS MUSCLE, BRAIN,  
LUNG

Medical Examiner: MARK SHELLY, DO

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**RESULTS\*:**

Vitreous: Positive for  
Ethyl alcohol 0.01 g% (trace amount)  
None detected for methanol, isopropanol and acetone

Cardiac Blood: Positive for  
Ethyl alcohol 0.05 g%  
None detected for methanol, isopropanol, acetone,  
methamphetamine, benzoylecgonine, morphine, codeine,  
benzodiazepines, barbiturates, fentanyl, and oxycodone

Pleural Fluid: Positive for  
Carboxyhemoglobin (19% saturation)  
None detected for amphetamine, methamphetamine,  
phencyclidine, cocaine, methadone, codeine, antihistamines,  
phenothiazines, tricyclic antidepressants, and acid neutral drugs

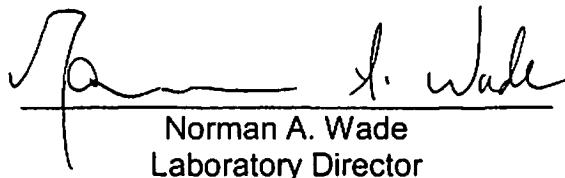
Brain: Positive by GC/MS for  
Benzene  
Xylene

Lung: Positive by GC/MS for  
Toluene  
Xylene

Bile: None detected for amphetamine, methamphetamine,  
phencyclidine, cocaine, methadone, codeine, antihistamines,  
phenothiazines, and tricyclic antidepressants

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\*If results are not listed for any specimen(s), that/those specimen(s) is/are deemed to be on "HOLD"

  
Norman A. Wade  
Laboratory Director

