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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

UNITED STATES OF AMERICA, Plaintiff, vs. HENRY CERVANTES, et al., Defendants.	**Case No. 4:12-CR-00792-YGR** **MOTION TO EXCLUDE OR LIMIT THE TESTIMONY OF ALLEGED ARSON OR FIRE INVESTIGATION EXPERTS, INCLUDING RESULTS OF ALLEGED TESTING DONE WITH A HYDROCARBON 'SNIFFER' THAT DOES NOT PRODUCE REVIEWABLE EVIDENCE [EXHIBITS ATTACHED *Luna* CASE AND ARTICLE]** **Date: August 26, 2015** **Time: 9:30AM** **Dept: The Hon. Yvonne Gonzalez Rogers, District Judge**

TO THIS HONORABLE COURT; TO COUNSEL FOR THE GOVERNMENT; TO COUNSEL FOR THE REMAINING DEFENDANTS:

HENRY CERVANTES, defendant in this action, brings this motion to exclude or limit testimony from Government experts addressing arson or causes of fire and covering the presence of accelerants, or 'scientific' evidence of arson as detected by either examination or alleged hydrocarbon 'sniffer' or hydrocarbon testing devices used on the Coolidge Avenue premises in September 2011. The basis for the objections is:

1. The evidence in question cannot be admitted under the dictates of Federal Rule of Evidence 702, Rule of Evidence 403, and under *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993), and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999);

2. Testimony about the use of an instrumental detection of hydrocarbons or including 'results from' chemical accelerants related to the setting of arson fires, hydrocarbon indicators or 'sniffers,' should not be permitted, in the absence of both instrumental documentation, corroborating chemical testing, and/or verifiability of results, as well as because it is unreliable within the meaning of F.R.E. 702 and misleading under F.R.E. 403;

3. The objections here are specific to the attempts by the Government, or by any alleged fire or arson investigator, to reconstruct the manner in which fire originated in the Coolidge Avenue property in the aftermath of the homicides charged in Counts 5 and 6 of the Second Superseding Indictment.

The motion will be based on the above statement of the objections; on the arguments and authorities in the appended memorandum of points and authorities, which are incorporated by reference here as grounds to exclude the evidence; and on any further evidence, authorities, or argument as may be proffered at the time of any hearing on the motion.

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MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

As demonstrated by the District Court's ruling in *U.S. v. Hebshie*, 754 F.Supp.2d 89 (D.Mass, 2010), failure to move for a *Daubert* hearing in a case involving the use of less than reliable evidence of arson can deprive the accused of effective counsel. The *Hebshie* court explained: "...case law raised concerns about arson expert testimony similar to the concerns raised in this investigation [citation omitted]." *Id.*, at 14. Recommended practices have focused on the need for laboratory testing of material from a fire scene to address arson. *Id.*, at 111-12. In this case, it is not clear that follow up lab work was done. In addition, there is case law indicating that hydrocarbon 'sniffers' at a fire scene cannot reliably establish arson.

According to investigation reports from the Oakland Fire Department that were provided as part of the initial packet of discovery, in the aftermath of the report of a fire at the Coolidge Avenue apartments ([redacted], Oakland), Oakland Fire Department and Oakland Police investigators conducted some investigation at the Coolidge Avenue apartments. According to the reports generated, these investigators, including Investigator Cox, detected an odor of ignitable liquid. Based on the walk-through of the scene, the use of a hydrocarbon detector, and analysis burn patterns, a report was generated indicating that 'ignitable liquids' were involved in setting the fire.

This motion is filed to exclude, or limit, the expert testimony from alleged fire or arson investigators about origin-of-fire opinions, including opinions about burn pattern observations, or hydrocarbon detector readings, obtained by the Oakland Fire Department and Oakland Police Department. Arson investigation is a complex endeavor, and definitive analysis of the chemical evidence of the use of accelerants requires more than using hydrocarbon 'sniffer' machines at the scene. *Luna v. Kentucky*, 2015 Ky LEXIS 64 (Supreme Court of Kentucky Order

published June 2015) – submitted as an exhibit.

Some of the matters of concern to the defense were discussed at some length in a series of rulings in a *habeas corpus* case that reviewed a state court conviction obtained in the Eastern District of California in a case litigated, in *habeas corpus*, under the title *Souliotes v. Hedgpeth*, 2012 U.S.Dist. LEXIS 58689 (E.D.Cal., April 26, 2012). The *Souliotes* unpublished order was one of a series of unpublished rulings in the case, in which one of the issues was whether an individual convicted in state court proceedings was guilty of having intentionally set a fire in which three tenants of a rental property died. 'Flammable compounds used as accelerants and found at the scene...' were described as circumstantial evidence of a deliberately set fire. *Id.*, at 2-3. As the District Court *Souliotes* reviewed the evidence of arson in that case, serious questions arose about the reliability of the expert testimony. These are questions that have arisen in other cases also involving arson investigation.

The Cervantes defense understands that the Government will likely be able to introduce testimony from percipient witnesses who allegedly saw individuals outside the Coolidge Avenue apartments, and saw activities, as well as heard noises, consistent with individuals setting a fire at the Coolidge Avenue apartments. The focus of this motion is on specific proposed expert technical or scientific evidence dealing with the investigation of fire related evidence (or allegedly fire related evidence) after the reporting of the fire at Coolidge Avenue, and the initiation of the investigation into the deaths of Victims 1 and 2, and the setting of the fire at Coolidge Avenue. The focus of the defense's objections is not on whatever lay testimony may be presented to suggest or explain that certain activities likely resulted in the initiation of a fire. Rather, the objections, and *Daubert/Kumho Tire*/Rule 702/Rule 403 objections here are focused on whether there is evidence, produced by reliable methodology, and verifiable scientific or technical means, that explains where portions of the fires were set; whether

accelerants were used to set them according to "objective" or scientific and technical evidence. The defense objects and urges that unreliable 'arson investigator' evidence should be excluded.

II. DISCUSSION AND AUTHORITIES

A. Introduction

The purpose of this pleading is to state the Cervantes defense's objections to technical or scientific expert evidence concerning certain aspects of the investigation of the fire at [redacted]. As explained above, the defense is clear that the Government is going to present lay witnesses who will purport to have seen, or heard, evidence indicative that a fire was deliberately set at [redacted] on September 11, 2011. The concern here, however, is that there are substantial reasons to be concerned that testimony offered by so-called fire investigators, or arson investigators from fire departments, law enforcement agencies, or crime laboratories is neither technically nor scientifically reliable–particularly in the absence of the application of certain techniques and methodologies to the alleged evidence of arson–or deliberately set fire. The issue is one of reliability, and this motion is in the heartland of issues that are reached in a *Daubert/Kumho Tire* motion.

B. Evidence at Issue

In the discovery provided to the Cervantes defense, there are reports from the Oakland Fire Department which responded to calls of a fire at [redacted]. In the aftermath of the fire, beginning in the early morning hours on September 11, 2011, (NF-772) investigators of the Oakland Fire Department and Police Department began investigating the scene.[1] According to one of the

[1] References to documents, including NF772, et seq., are references to discovery pages, and are offered for the convenience of the parties. The defense is making a copy of the pertinent investigation report available to the Court, as an exhibit in support of the declaration of counsel related to this motion.

Oakland Fire Department's pertinent reports, Oakland Fire Department Investigator Bonnie Cox and Oakland Police Department Investigator Ryan Goodfellow, together with a number of other named investigators, conducted an investigation at the Coolidge Avenue apartments. A report that appears at NF772-777 states: "The cause of the fires was determined to be intentional. These fires are incendiary." (NF772.) The analysis offered includes reports that the fire investigators received from firefighters and other witnesses. (NF773.) It also contains narrative information about the investigation conducted by the investigators. At page NF775, the report at issue indicates, without further detail, that there "...was an odor of ignitable liquid on [the body of the female victim] and an odor of ignitable liquid on the cloth on and around her body." The same report goes on to explain that Oakland Police Department Fire Investigator Goodfellow "...used a hydrocarbon detector which registered an indicator for an ignitable substance on and around the body. Samples of the cloth were taken into evidence. It appears most likely that the fire in this room was caused intentionally by someone pouring ignitable liquid on the clothing of the female victim and lighting the vapors with a cigarette lighter as the source of flame." (NF775.)

Inspector Cox's report then goes on to address observations "...that the smoke patters indicated that the heat came from the west end of the apartment...." (NF775.) Later on that same page the investigator states: "The burn patterns on the exterior of the door and in the interior of this room indicated that the heat came from the room at the northwest corner." (NF775.)

Other "findings" are described at NF776, including observations that the investigator could "smell the odor of an ignitable liquid." Additional reference is made to the use of a hydrocarbon detector at page 776. A further finding was that the floor "...had a burn pattern consistent with the use of ignitable liquid." (NF776.)

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C. Objections and Authorities

The Cervantes defense is raising issues here that are the exact focus of the decision in *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993), and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). The concern is that this Court, in its gatekeeping function, ensure that an expert's testimony rests on reliable foundation and is relevant to the task at hand. *Daubert, supra*, 509 U.S., at 593-94. The difficulty is that, as will be demonstrated here, evidence concerning the origin and propagation of fire cannot be demonstrated, to use the phrasing of Federal Rule of Evidence 702, to be "...the product of reliable principles and methods." On remand from the United States Supreme Court when the *Daubert* case was reexamined by the Ninth Circuit, the court noted that the testimony of an expert must be reliable. Where it is based on science, it must reflect scientific knowledge, be derived from the scientific method, and the work product generated must amount to "good science." *Daubert v. Merrell Dow Pharmaceuticals* [*Daubert II*], 43 F.3d 1311, 1315 (9th Cir., 1995). As the Ninth Circuit explained elsewhere: "Scientific evidence is deemed reliable if the principles and methodology used by an expert are grounded in the methods of science." *Clausen v. M/V New Carissa*, 339 F.3d 1049, 1056 (9th Cir., 2003). Of some importance to the issues presented here are the observations made by the District Court in *United States v. Prime*, 431 F.3d 1143, 1152 (9th Cir., 2005), in addressing the way that the *Daubert* factors are applied in determining reliability.

Among the issues to be considered are: (1) whether a method can or has been tested; (2) the known or potential rate of error; (3) whether the methods have been subjected to peer review; (4) whether there are standards controlling the technique's operation; and (5) the general acceptance of the method within the relevant community.

Admittedly, where a court is looking at specialized or technical evidence, there are some distinguishing factors–though as has been noted, even where

scientific evidence per se is not the key component of an expert's proffer of evidence, the *Daubert* factors apply, though they are "...not intended to be exhaustive or unduly restrictive." *U.S. v. Sandoval Mendoza*, 472 F.3d 645, 655 (9th Cir., 2006) [analyzing the admissibility of psychological and neuropsychological/medical opinions which, as the Ninth Circuit has pointed out, do not strictly fall under the *Daubert* umbrella. The final injunction contained in *Daubert II, supra*, 43 F.3d, at 1321, fn.17, is applicable here: "Federal judges must therefore exclude proffered scientific evidence under Rules 702 and 403 unless they are convinced that [the evidence] speaks clearly and [is] directed to an issue in dispute in the case, and that it will not mislead the jury." As demonstrated by the ruling in *U.S. v. Hebshie, supra*, 754 F.Supp.2d 89, the 'science' behind arson and fire investigation has been addressed in case law and literature. Failure to address *Daubert* can deprive the accused who fails to object to unreliable arson evidence of effective assistance of counsel.

The problem at issue, and underscored here, is discussed at some length in a relatively recent publication on the intersection between arson investigation and legal standards. This review was prompted in part by some notorious arson cases that were intertwined with murder investigations and prosecutions, and produced what turns out to have been dubious, and undermined, courtroom evidence about the origin and analysis of fires that were pertinent to the cases. See, generally, Dioso-Villa, *Scientific and Legal Developments in Fire and Arson Investigation Expertise in Texas v. Willingham*, 14 Minn. J. L. Sci. & Tech. 817 (2003). The author of the article is a faculty member at the University of California at Irvine School of Criminology, Law and Society. The introduction to the article at issues notes:

> Fire experts determine the cause and origin of fires, whether the fire was intentionally set or accidental, and they provide probative evidence in many criminal and civil cases. [Footnote omitted.] In light of research that has called into question the scientific validity of arson

> investigative methods and claims, [footnote omitted] this profession is now confronted with new challenges to its admission as expert evidence, and the criminal justice system may potentially face new claims of innocence in cases that employed outdated techniques.

Id., at 819.

The author goes on to explain that part of the difficulty in addressing the reliability of the evidence provided by fire investigators associated with fire departments and law enforcement agencies is that they do not use scientific methodology that is rooted in the most recent studies of materials, engineering surveys, and research. They often are exposed to a combination of departmental training and on the job training that exposes them to some current information but they use 'rules of thumb' concerning char patterns, melting patterns, and fire analysis that have been debunked by scientific laboratory research. This point was made in no less than the publication of the National Academy of Sciences, *Strengthening Forensic Science in the United States* (2009), a publication that has been referenced by the United States Supreme Court. The concern as summarized by Dioso-Villa is this:

> In its evaluations of the existing fire and arson investigation techniques, NAS specifically referred to arson indicators as 'rules of thumb' and acknowledged that there is contradictory evidence to challenge its validity. They recommended validation studies with experimental designs to test the burn patterns in different conditions in an attempt to put the field on 'more solid scientific footing.' Arson indicators do not conclusively prove that an accelerant was used or that the fire was incendiary, and the determination that a fire is arson based solely on these indicators would arguably be misleading to a jury and potentially erroneous.

Id., at 825.

The concerns at issue have not been expressed solely by scholars and students of law and society issues who have studied erroneous convictions and some of the reasoning for them, particularly where fire analysis was of concern. For example, the infamous, well-known Oakland fire in the San Francisco Bay

Area allowed fire investigators to understand that some of the myths about set fires (there had been a suspicion that there had been signs pointing towards arson activity in the notorious Oakland Hills fire) and research was produced that demonstrated some of the mythology adhered to by investigators at the time. Lentini, et al., *Unconventional Wisdom: The Lessons of Oakland*, Fire & Arson Investigator (June 1993). Mr. Lentini, whose work on fire investigation has been commented on by the NAS report among other works, has written about the evolution of fire investigations for the legal profession. See, generally, Lentini, *The Evolution of Fire Investigation and Its Impact on Arson Cases*, 27 *Criminal Justice*, at 2012.[2]

D. The Problem With Findings of Fire Investigation That Are Not Noted, or Documented.

The Lentini article just cited reviews some cases that have actually addressed the course, and development, of fire investigation. Mr. Lentini reviews the history of litigation in *Michigan Millers Mutual Ins. Corp. v. Benfield*, 140 F.3d 915 (9th Cir., 1998) [Lentini's article is appended to this pleading as an exhibit]. In doing so, Mr. Lentini points out that even at that time, the International Association of Arson Investigators had filed an amicus brief explaining that fire investigation was 'less scientific' than the type of scientific testing discussed in *Daubert*. Lentini, however, explains that currently "...most fire investigators will acknowledge that the scientific method is the only valid analytical process by which one can reach reliable and accurate opinions and conclusions regarding the origin and cause of a fire. There are some, however, who neither understand nor follow the scientific method." [See Lentini article, third page–submitted as an exhibit in support of the declaration of counsel.]

As Lentini explains in some detail in the article just referenced, and as other

[2] The publication *Criminal Justice* is a publication of the American Bar Association, attached as Exhibit B.

literature submitted to this Court demonstrates, arson "expert" testimony about points of origin is often based on adherence to the generalized information passed down within the ranks of fire investigators–and does not correspond to the kind of information that has been developed through methodical study, laboratory analysis, engineering surveys, materials research, etc.

The use of a hydrocarbon detector–as occurred here–which does not generate any documentation to support the "findings" by an investigator is an example of the type of technique that, by definition, is unverifiable. It is not a scientific technique. It is not subject to assessment of potential error, because it is undocumented work. In *Luna v. Kentucky, supra*, 2015 Ky LEXIS 64 (June 2015 publication decision, Exhibit A), the Kentucky Supreme Court pointed out that evidence at a *Daubert* hearing indicated that: "...a hydrocarbon detector is a valid scientific device or technique, it reacts to far too many substances to provide any meaningful results. As one of Luna's witnesses put it, the device is merely a gross survey tool. All involved agree that the hydrocarbon detector is not the gold standard in accelerant detection." *Id.*, at p.6. (See supporting exhibits and *Luna* ruling.)

This is not to say that the investigators in this case may not be right about their observations–rather it is to say that their methodology is so lacking in verifiability, rigor, or adherence to standards involved in an F.R.E. 702 analysis as to make them excludable as expert opinion evidence.

As Maxfield, et al., point out in their book length treatment of *Research Methods for Criminal Justice and Criminology* (2015, and 2011), from a technical standpoint, is ensuring that "...a particular measurement technique, applied repeatedly to the same thing, will yield the same result each time." *Id.*, at 124. Part of the problem here is that some of what the investigators in question essentially have to say about this fire investigation is 'I know it when I see it.' That kind of technical "expertise" is subject to exclusion, not only under *Kumho Tire* and Rule 702, but also under F.R.E. 403. All pertinent objections are being made here.

As demonstrated in the case law cited to this Court, and in the pertinent literature, there are some techniques used to address the alleged causes of an 'arson fire' by fire and law enforcement investigators that lack reliability. That is why the District Court in *U.S. v. Hebshie, supra,* 754 F.Supp.2d 89, 108-15, referenced at length in case law and literature that discusses the need for care in the litigation of allegedly 'reliable' fire investigation methodologies.

The Court should conduct a hearing an limit the testimony of any arson or fire experts and should exclude testimony about 'the smell' of accelerants and about 'findings' from a hydrocarbon indicator and should exclude any other speculative 'fire science,' including opinions based on "burn patterns." The jurors can see and hear the lay witness evidence and determine whether there was a plan put in motion to set a fire–and whether actions towards that end were taken. Speculative 'science' of arson detection should be excluded.

CONCLUSION

For the reasons set forth here and in the supporting documents, this motion should be granted.

Dated: July 13, 2015

Respectfully Submitted,

JOHN T. PHILIPSBORN

/s/ John T. Philipsborn
JOHN T. PHILIPSBORN
Attorney for Henry Cervantes

PROOF OF SERVICE

I, Melissa Stern, declare:

That I am over the age of 18, employed in the County of San Francisco, California, and not a party to the within action; my business address is Suite 350, 507 Polk Street, San Francisco, California 94102.

On today's date, I served the within document entitled:

MOTION TO EXCLUDE OR LIMIT THE TESTIMONY OF ALLEGED ARSON OR FIRE INVESTIGATION EXPERTS, INCLUDING RESULTS OF ALLEGED TESTING DONE WITH A HYDROCARBON 'SNIFFER' THAT DOES NOT PRODUCE REVIEWABLE EVIDENCE

( ) By placing a true copy thereof enclosed in a sealed envelope with postage thereon fully prepaid, in the United States Mail at San Francisco, CA, addressed as set forth below;

(X) By electronically transmitting a true copy thereof;

( ) By having a messenger personally deliver a true copy thereof to the person and/or office of the person at the address set forth below.

Joseph Alioto, Jr., Assistant U.S. Attorney

Jennifer Sykes, DOJ Trial Lawyer

All defense counsel through ECF

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this July 13, 2015, at San Francisco, California.

Signed: */s/ Melissa Stern*
Melissa Stern