FBI Approved Standards for Scientific Testimony and Report Language for Fire Debris Analysis

Table of Contents

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1 Introduction

This document provides examples of the scientifically-supported conclusions and opinions approved for reporting examination conclusions and offering expert witness opinion statements during testimony by examiners who conduct fire debris examinations in the FBI Laboratory. These examples are not intended to be all inclusive and may be dependent upon the precedent set by the judge or locality in which a testimony is provided. These examples are not intended to serve as precedent for other forensic laboratories and do not imply that statements by other forensic laboratories are incorrect, indefensible, or erroneous.

2 Scope

This document applies to examiners who prepare *Laboratory Reports* and/or provide expert witness testimony in fire debris analysis. This document does not apply to employees who provide fact witness testimony.

3 Responsibilities

- The examiner will ensure that a *Laboratory Report* complies with the statements contained within this document, when applicable.
- The examiner will ensure that the testimony is consistent with the standards contained within this document, when applicable.

4 Statements Approved for FBI Fire Debris Analysis Testimony and/or Laboratory Reports

For more detailed guidance on fire debris report writing, see FD-202.

- The examiner may report analytical findings and/or state opinions/conclusions about the presence or absence of a targeted chemical or product (ignitable liquid residues and neat liquids).
- The examiner may report and/or state opinions as to the identification by chemical classification of a substance (see classifications in Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry: ASTM E1618. The examiner may also report and/or state the general properties and potential uses of the substance or class of substances.
- The examiner may report that no ignitable liquids were identified when the data does not support an identification of a chemical, product, or classification.
- The examiner may report and/or state an opinion that the conclusions apply to the entirety of an item when there is a reasonable assumption of homogeneity of the item.
- The examiner may report results of examinations and/or state opinions/conclusions regarding a chemical comparison that was performed between items, provided that the opinions/conclusion are supported by the appropriate chemical analysis.

- The examiner may report and/or state an opinion about whether a sample is evaporated, weathered, or otherwise degraded when it is compared to a reference material.
- The examiner may report and/or state the carbon range of a sample when it is compared against a reference material with a known carbon range (e.g, Standard Accelerant Mixture (SAM)).
- The examiner may report and/or state an opinion about an estimated quantity of a substance (e.g., volume) when a validated quantitative method was not used, as long as the method(s) used is reliable for such estimation and it is clearly stated that the estimate is not the result of a validated quantitative method.
- The examiner may report and/or state the limitations of the examinations and opinions.

5 Statements Not Approved For FBI Fire Debris Analysis Testimony and/or Laboratory Reports

- The examiner may not state or imply that two chemicals, chemical mixtures, or chemical products originated from the same source to the absolute exclusion of all other sources.
- In cases involving comparisons of items, an examiner generally may not report and/or state an opinion about the exact source of a chemical or material.

6 Laboratory Report Reviews

The content of a Fire Debris *Laboratory Report* will be reviewed per LAB-200 and FD-202 to ensure compliance with the approved statements in this document.

7 Testimony Reviews

Fire Debris testimonies will be reviewed in accordance with LAB-100. The review will ensure compliance with this document.

8 REFERENCES

ISO/IEC 17025:2017 – Forensic Science Testing and Calibration Laboratories Accreditation Requirements (AR 3125), ANAB, Milwaukee, WII, April 29, 2019.

LAB-100 – Quality Assurance Manual, Federal Bureau of Investigation, Laboratory Division, latest revision.

LAB-200 – Operations Manual, Federal Bureau of Investigation, Laboratory Division, latest revision.

FD-202 – Fire Debris Report Writing Guidelines, Federal Bureau of Investigation, Laboratory Division, latest revision.

ASTM E1618 – Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry, latest revision.

9 REVISION HISTORY

Revision	Issued	Changes
0	07/01/2022	Original document issued