

To: OSAC Independent Review Panel

From: Trace/Materials Subcommittee

Subject: Appeal from Adjudication of LRC-compiled Comments on ASTM E2926-13

Date: May 24th 2017

Introduction

An appeal was submitted from members of the Legal Resource Committee (David Kaye, Ronald Reinstein, and Barry Scheck) related to the adjudication process of the standard test method “ASTM E2926–13, “Standard Test Method for Forensic Comparison of Glass Using Micro X-ray Fluorescence (μ -XRF) Spectrometry”

On April 20th, 2017 the QIC committee coordinated a meeting between members of the glass task group (Trace/Materials subcommittee) and members of the LRC committee. During this meeting, representatives from the Trace/Materials subcommittee, LRC committee, QIC committee, statisticians and OSAC affairs were present. This meeting provided a valuable opportunity to discuss the reasoning behind the appeal’s comments, and the responses provided by the Trace/Material committee during the adjudication process. The members of the Trace Subcommittee found the meeting very useful to identify communication gaps between the parties and to recognize that different interpretations may arise from scientific perspectives versus legal perspectives.

During this meeting, LRC members agreed to withdraw all the appeal comments, except the appeal **Comment on § 10.7.3.2**

On May 10th, the Ad hoc Independent Review Panel submitted the final determination for the appeal, and recommended that the subcommittee re-adjudicate to address the comment regarding the sentence describing the 99,7% normally distributed population (section 10.7.3.2)

Below is the Trace/Material’s re-adjudication to **Comment on § 10.7.3.2**

Re-adjudication:

The committee finds the comment non-persuasive because the newest version of the ASTM document (ASTM E2926-17) includes a reference to the peer-reviewed manuscripts that describe in detail the performance and operation of the comparison criteria¹, and therefore minimizes the potential misinterpretation of the sentence in question. We believe that if the newest revised document is moved to the OSAC registry, the document would provide valuable guidance to the practitioners and readers.

However, the subcommittee recognizes that although the sentence is not false, it is also not necessary. Therefore, the Trace/Materials subcommittee agrees to remove the sentence in the upcoming revision of the ASTM standard in 2018.

NOTES:

¹The following references are now included in the ASTM-2926-17 standard method:

- (1) Ernst, T., Berman, T., Buscaglia, J., Eckert-Lumsdon, T., Hanlon, C., Olsson, K., Palenick, C., Ryland, S., Trejos, T., Valdez, M., and Amirall, J., "Signal-to-noise ratios in forensic glass analysis by micro X-ray fluorescence spectrometry", *X-Ray Spectrometry*, 2014, DOI: 10.1002/xrs.2437
- (2) Trejos, T., Koons, R., Becker, S., Berman, T., Buscaglia, J., Duecking, M., Eckert-Lumsdon, T., Ernst, T., Hanlon, C., Heydon, A., Mooney, K., Nelson, R., Olsson, K., Palenik, C., Pollock, E. C., Rudell, D., Ryland, S., Tarifa, A., Valadez, M., Weis, P., Almirall, J. R. "Cross-validation and evaluation of the performance of methods for the elemental analysis of forensic glass by μ -XRF, ICP-MS, and LA-ICP-MS", *Anal. Bioanal. Chem.* Vol 405, 2013, p. 5393.
- (3) Trejos, T., Koons, R., Weis, P., Becker, S., Berman, T., Dalpe, C., Duecking, M., Buscaglia, J., Eckert-Lumsdon, T., Ernst, T., Hanlon, C., Heydon, A., Mooney, K., Nelson, R., Olsson, K., Schenk, E., Palenik, C., Pollock, E. C., Rudell, D., Ryland, S., Tarifa, A., Valadez, M., van Es, A., Zdanowicz, V., Almirall, J. R. "Forensic analysis of glass by μ -XRF, SN-ICP-MS, LA-ICP-MS and LA-ICP-OES: evaluation of the performance of different criteria for comparing elemental composition", *J. Anal. At. Spectrom.* Vol 28, 2013, p. 1270.
- (4) Weis, P., Dücking, M., Watzke, P., Menges, S., Becker, S. "Establishing a match criterion in forensic comparison analysis of float glass using laser ablation inductively coupled plasma mass spectrometry". *J. Anal. At. Spectrom.* Vol 26, 2011, p. 1273.
- (5) Dorn, H., Ruddle, D.E., Heydon, A., Burton, B. "Discrimination of float glass by LA-ICP-MS: assessment of exclusion criteria using casework samples", *Can. Soc. Forensic Science*, Vol 48, No. 3 2015, p. 85