(07/15/20)

VALIDATION SUMMARY

CHEMISTRY UNIT // FBI Laboratory

Procedure Name: TOX200-16 Volatiles in Biologicals

Date: 10/19/2020

Validation Summary:

Validation accounted for an update to the instrument platform (Agilent 7890B/5977B GC-MSD with FID), new analytical columns and a new sampling device (Eppendorf Xplorer Plus), as well as switch in data analysis method.

No matrix interferences were detected across matrices analyzed. No issues detected with selectivity across both columns.

Processed sample stability was evaluated in two ways. 1) Stability of pierced headspace vials is limited to 24 hours for quantitative purposes, due to the loss of materials through the pierced septa. Due to the ease of sampling, another aliquot for reanalysis is recommended. 2) Method validated for aliquot-on-inventory for at least a 15-day period for screening/identification purposes, and at least a 15-day period for confirmation/quantitation purposes.

Reporting limit for MSD screening set at 0.010g% for target analytes of ethanol, methanol, acetone, and isopropanol.

Limit of quantitation set at 0.010g% for FID confirmation.

Use of Agilent Masshunter software validated, including use of built-in curve fitting.
Curve modeling set at 1/x weighting/linear for all target compounds. (Also verified against Excel spreadsheets)

Masshunter automatic creation of reports validated for both MSD and FID analyses.

Carryover was evaluated for methanol, isopropanol, acetone up to 0.40g% with no detectable carryover. Ethanol was evaluated for ethanol up to 0.50g% with no detectable carryover.

Precision of control material analyzed was approximately 2%. Accuracy of control materials was within 10%.

Approval:

Redacted - Signatures on File

Technical Approval: Date: 10/19/2020

Chemistry Unit Chief: Date: 10/19/2020