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Subject: Detailed Explanation on Request 11044

The samples submitted under request 11044 were analyzed for Volatile Organic Components (VOC's) using a SW 846 Purge & Trap GC/MS method 8260 of analysis. Initially, a direct purge of a 5 - 6 gram sample aliquot was done for all samples as specified in the method. Low levels of carbon disulfide and/or methylene chloride were detected in all samples with the exception of four samples (90.19761, 90.19764, 90.19769, and 90.19792). Since the compounds were detected in the method blank at similar levels, the detection of carbon disulfide and/or methylene chloride can be attributed to laboratory contamination. Other target VOC's were detected in a number of samples at various levels as indicated in the final report. Sample 90.19762 was the only sample which contained a significant amount of target and non-target VOC's.

Surrogate recoveries and internal standard areas met the quality control limits specified in SW 846 with the exception of samples 90.19767 and 90.19762. The surrogate 1,2-dichloroethane-d4 was above the upper control limit for sample 90.19767. This sample was used as the matrix spike and matrix spike duplicate. The same high 1,2-dichloroethane-d4 recovery occurred in both. Sample 90.19762 had all three surrogates out of the established control limits and low internal standard areas for the direct purge of 5.89 grams. Since a number of target VOC's were detected above linear range in this initial purge, analysis of the sample at a dilution was performed as specified in the method. The second analysis of the sample was a direct purge of 1.69 grams resulting in a few target VOC's being above linear range and similar out of control surrogate recoveries and low internal standard areas as observed in the initial 5.89 grams analysis. The third analysis of sample 90.19762 was a direct purge of 100 uL of the methanol extract into 5 mLs of water. The methanol extract was obtained by extracting 8.7855 grams of sample into 10 mLs of methanol. The analysis of the methanol extract resulted in trichlorotrifluoroethane, 1,1,1-trichloroethane, and tetrachloroethane being within linear range, surrogate recoveries and internal standard areas being within SW 846 control limits.

If the corrective action guidelines for "out of control" surrogate recoveries and/or internal standard areas are followed through out an analysis, it is acceptable to report data with "out of control" surrogate recoveries. The most important point of the established guidelines is the reextraction and reanalysis of a sample(s) whenever a surrogate recovery and/or internal standard area is outside of the control limits. Samples 90.19767 and 90.19762 were analyzed a second time with similar surrogate recoveries resulting in the reanalysis. Since the internal standard areas are used in calculating the concentration of detected compounds, a low internal standard area will most likely result in a high surrogate recovery especially if the area count for the surrogate compounds has not been affected (the area count of the surrogate in the sample is similar to the area count in the daily calibration standard). This is true for sample 90.19762. Due to the extremely high concentration of target compounds detected in both the 5.89 and 1.69 gram analyses of sample 90.19762, low internal standard areas and out of control surrogate recoveries were observed. Once the concentration of target compounds were brought within the

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calibrations linear range as in the case with the methanol extract, the internal standard areas were "in control" resulting in surrogate recoveries being "in control".

Since subsequent analysis were done in order to acquire the concentration of detected target VOC's within the calibrations linear range rather than to dilute significant amounts of interfering or co-eluting non-target compounds, the reporting limits and surrogate recoveries from the initial analysis of sample 90.19762 were used. Therefore, the lowest possible reporting limits were acquired. The final concentration reported were derived from the direct purge of 5.89 grams for the following compounds: methylene chloride, 1,1-dichloroethane, trichloroethene, toluene, mixed xylenes, and the non-target VOC's or tentatively identified compounds (TIC's). The final concentration reported were derived from the direct purge of 1.69 grams for the following compounds: 2-butanone, 4-methyl-2-pentanone, and 2-hexanone. The final concentration reported were derived from the methanol extract analysis for the following compounds: trichlorofluoroethane, 1,1,1-trichloroethane, and tetrachloroethane. Therefore, the reported value for 1,1,1-trichloroethane came from the analysis which had all surrogates in control limits.