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## **A REVIEW OF THE ISSUE AND DATA RELATED TO HYDROLYSIS OF MTBE TO TBA DURING ANALYTICAL TESTING PROCESS**

Much attention and resources have been devoted to groundwater cleanup for methyl tertiary butyl ether (MTBE), a gasoline additive introduced to improve air quality. Recently, the scientific community has been discussing the observations on hydrolysis of MTBE to its degradation product tertiary butyl alcohol (TBA). This issue is significant especially to the remedial design of treatment of MTBE. Engineering design of treatment of MTBE may have to consider removing TBA if high TBA concentrations are encountered. However, the design will be different if the reported TBA concentrations are attributable to the said hydrolysis in laboratory process. This presentation reviews the issues related to the hydrolysis of MTBE to TBA and discusses a set of field data that were designed to assess the possibility of the said hydrolysis. A close review of the issue discloses that the hydrolysis can occur, but to be significant, it has to be in the following two conditions: (1) pH=1 and (2) sample preparing temperature=80°C. However, common purge and trap procedure under EPA method 8260B requires less than 80°C; therefore, the hydrolysis may not occur significantly. In order to avoid the extreme acid condition, EPA recommends the use of trisodium phosphate (TSP) (basic) as a sample preservative. Two field-based case studies are to be presented. One case study was to use different preservatives (acid and basic) at different sampling locations. Another case study was to analyze temporal sequence data from preserved vs. non-preserved groups. Field data of these two case studies gave no indication that the hydrolysis has greatly affected the results and did not support the hydrolysis transformation from MTBE to TBA is a pervasive problem.