

The sensitivity of the biomarker analysis is a function of how well scientists can measure individual hydrocarbons out of a complex mixture. By increasing the biomarker signal while concomitantly decreasing the background by improved sample preparation, Battelle scientists have lowered the sensitivity of the analysis by a factor of approximately 20. The figure below shows the peaks attributed to selected hopanoid biomarkers in the same crude oil sample following A) the traditional analysis and B) the improved analysis. Note the improvement in peak height and the increased resolution from baseline following method improvement. The net effect of this method improvement is that 1) detection limits are approximately 20 fold lower and 2) Battelle scientists and clients can use this improved sensitivity to discriminate more thermally mature oils and/or source attribute samples with lower concentrations of biomarkers.

