Composition of in situ burn residue as a function of weathering conditions

Troll B crude oil was weathered under Arctic conditions with different ice coverage: open water, 50% ice and 90% ice. Samples (100 mL) were taken during the experiment and tested for ignitability in a burning cell. From each burning a residue sample was taken for analysis. The burning process removed the light compounds eluting before C13. No effect from the prior weathering time or the different ice coverage was seen in the burn residue composition. The content of selected Poly Aromatic Hydrocarbons (PAHs) was determined and it was noted that the concentration of PAHs with more than 4 rings were increased. The source origin of the PAHs was investigated by use of relative ratios of PAH isomers and indicated that some formation of PAHs was additionally taking place during burning. © 2012 Elsevier Ltd.

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