ABSTRACT

Petroleum spillage contamination of soils was investigated 60days after an extensive oil spillage in South- South Niger Delta. Soil samples and controls were collected at depths of 0-15cm , 15-30cm and 30-60cm. Samples were analyzed using gas chromatography fitted with a flame ionization detector. Penetration and migration of C5 − C9, C10 − C26 , and C26 − C40 hydrocarbons through the soil layers were assessed to determine the spatial distribution, penetration and similarity of these compounds over the contaminated area. The result also indicated elevated levels of total hydrocarbon contents in the soil when compared with the reference sites. The total petroleum hydrocarbon concentrations levels varied from 9 − 289 ± 3 mg kg−1 topsoil, 11 − 413 ± 7 mg kg−1 subsoil and 13 − 178 ± 11mg kg−1 at the gradient of the depth measured. This paper provides informative guidelines for effective remediation processes, careful monitoring and the need to conduct more post- spill studies by competitive remediation professionals.

Keywords: Petroleum Spills, Total Hydrocarbon, soil contamination, remediation and gaschromatography fitted with flame ionization detector (GC- FID).