

## THE EFFECTS OF CRUDE OIL SPILLAGE ON FARMLAND IN GOKANA LOCAL GOVERNMENT AREA OF RIVERS STATE

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### ABSTRACT

This work focused on investigation of the effects of crude oil spillage on farmland in Gokana Local Government Area of River state in Nigeria. The study was carried out in selected communities Kpoi, Biara, B-dere and K-dere. Soil samples were collected from each of the sampled locations comprising of the soil polluted and non-oil polluted soil following a reconnaissance survey from different soil depths; 0-15cm (surface) and 15-30cm (sub-surface). Total soil samples collected was 16. Heavy metals (Fe, Mn, Cr, and Zn) and THC, TOC, TOM, NO<sub>3</sub>, pH, EC, and moisture content analysis of the contaminated and non-contaminated soils were determined using Atomic absorption spectrophotometer, pH meter, walkley-black wet oxidation and the results of the 4 samples areas were compared with recommended standards. Evidence of THC, TOC, TOM, NO<sub>3</sub>-N, pH, EC was analyzed using the descriptive statistics and the independent “t” –test distribution was used to compare the difference in the heavy metals concentration and total hydrocarbon content across the sampled areas. The T-distribution statistics shows a high variability of heavy metals and others element in the oil polluted and non-oil polluted soils. These high values mean that Kpoi<sub>1</sub>, Biara<sub>1</sub>, K-dere<sub>1</sub> and B-dere<sub>1</sub>, are affected with crude oil spillage compared with Kpoi<sub>2</sub>, Biara<sub>2</sub>, K-dere<sub>2</sub>, and B-dere<sub>2</sub>. The result therefore, implies low soil fertility, growth reduction as a result of change processes in plant growing on heavy metals polluted soils, which in turn implies low agricultural productivity and reduced livelihood in the affected areas. Recommendations are also made for quick and sustained intervention which is required to completely reclaim the affected area (soil) in order to appease the communities with the hope of living in a clean environment.

**Keywords:** Effects, Crude Oil, Spillage and Farmland.