Integrated Geophysical and Photogrammetric Approach for Hydrocarbon Contamination Assessment in a Coastal Industrial Area of Romania

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Hydrocarbon contamination in industrial coastal areas poses significant environmental risks, requiring advanced geophysical and remote sensing techniques for accurate assessment. This study integrates georadar, magnetometric, and photogrammetric methods to investigate subsurface pollution and detect buried infrastructure in a contaminated site near the Black Sea. The georadar technique provides high-resolution subsurface imaging, while magnetometric surveys identify potential underground pipelines that may contribute to contamination pathways. Additionally, photogrammetric analysis aids in assessing the extent of surface pollution over a broader area. The combined approach enhances environmental diagnostics, offering valuable insights for remediation planning and pollution monitoring.