



E41 A Forensic Criminological Approach to Oil Spill Investigation

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Learning Overview: After attending this presentation, attendees will better understand the correlation between forensic science procedures and their impact on oil spill identification. This awareness will help attendees be more familiar with the role forensic science plays in oil spill cases.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by increasing understanding of why the evidence management procedures should be given equal relevance in oil spill retrieval to avoid contamination. This presentation will also provide recommendations as to the need for adopting a benchmark that will be employed by forensic analysts that use forensic techniques in identifying oil spills.

Oil spill disasters have become a global problem that adversely affects people and the environment. When there is an oil spill, forensic experts are involved because the evidence retrieved from the crime scenes are sent to the forensic laboratory for analysis. Flowing from this, environmental forensics has emerged as a tool for regulating environmental contamination, especially those arising from oil spills. This has been achieved through different oil spill identification mechanisms. Oil spill identification involves techniques employed to discern causes of oil spills. Thus, forensic techniques such as Gas Chromatography/Mass Spectrometry (GC/MS), and Polycyclic Aromatic Hydrocarbons (PAHs) play a significant role in determining the source of spilled oil so that we are better able to deduce their occurrences.

Earlier studies have researched various forensic methods used in oil spill identification. This was achieved by retrieving data from oil spill locations, comparing the chemical components from such investigation sites with substances from other locations, and analyzing the results to determine whether or not a match exists. However, questions as to whether these forensic studies were conducted following laid-down standards have been left unanswered.

In understanding the oil spill identification process, this report employed a case study approach. It divided the analysis into three stages, namely the pre-analytical, analytical, and post-analytical phases. The pre-analytical stage assessed the retrieval of evidence from oil spill sites. It examined whether evidence retrieved from select oil spill sites were conducted using forensic techniques. The analytical phase focused on evidence collection and its perceived impact on the oil spill process to avoid contamination. It emphasized the compliance steps required for the purpose of evidence handling. The post-analytical phase studied the overall effect on the criminal justice system, such as the courts, that relies on such evidence and the testimonies of expert analysts.

This exhibition highlighted the need to properly collect and preserve evidence from the oil spill site that will be sent to the laboratory for testing. The oil spill investigation scene ought to be treated as a crime scene investigation to prevent the loss of important evidence. Thus, retrieval of evidence from oil spill sites must be performed by following all relevant evidence management procedures.

Being the first of its kind, the purpose of this analysis is to offer the recommendation that a universal framework be adopted in forensic testing of oil spill cases. By doing so, this report seeks to assure the public of the credibility in the forensic science discipline and its procedures.

Oil Spill, Forensic Technique, Criminal Justice