

**ABSTRACT**  
**A Land-Based Oil Spill Management Planning Framework**  
**For the Petroleum Industry**

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Oil spill pollution efforts have historically focused on ocean-based oil spills and response has typically been reactive. Strategies to regulate and mitigate oil spills occur at all levels, internationally, nationally, and at the industry level. Absent is a strategy geared specifically to manage and mitigate land-based oil spills by the petroleum industry. To address this need, the objective of this study proposes a comprehensive oil spill management planning framework. It is comprised of five components, oil spill prevention, control, clean-up, and emphasis on the characterization and economic evaluation of oil spills. Land-based oil spills is a significant pollution problem largely due to a decaying pipeline infrastructure, which have escalated oil spill costs, volumes and frequencies. Using oil spill data collected at a petroleum company in Trinidad, statistical analyses and structural and non-structural concepts, adapted from Ontario's flood management approach, are applied to understand and mitigate oil spill events and costs.