

Poster # 17

IPA96 - 6.0 - 169

PROCEEDINGS, INDONESIAN PETROLEUM ASSOCIATION
Twenty-Fifth Silver Anniversary Convention, October 1996

**CHARACTERIZATION OF PRODUCED WATER IMPACT
OUTFALL IN THE JAVA SEA, INDONESIA**

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ABSTRACT

The continuous discharge of the produced water is primary environmental issue in waste management of Exploration and Production operations. Correct monitoring and environmental management must be defined for each specific location of the offshore oil and gas industry, especially in a tropical environment. To achieve successful management, an inventory must be conducted for environment data, distribution patterns of the pollutants at sea, and the observed impact of pollutants to marine organism.

This paper presents a detailed study of the impact of produced water in the Java Sea marine environment.

Effluent waters from each outfall situated in the West Java Sea, Indonesia were subjected to a detailed analysis to determine their contaminant characteristic. Combining the contaminant characterization with a detailed hydrodynamic model representing the changes in environmental conditions with tidal state and monsoon season allowed the environmental impact of the effluent stream to be assessed. By using this EDP (Effluent Dispersion Plume) model an in-depth investigation of the impact to the marine organism in the Java Sea was conducted. Results of sampling at predicted location were made to determine the impact of contaminants on abundance and diversity of zooplankton.

The resultant information provides a preliminary basis for assessing impact and developing an effective management plan.

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