Pengelolaan limbah kegiatan MIGAS CNOOC ltd. di laut Jawa: optimasi proses pada unit pengolahan limbah air terproduksi = Waste management for the exploration and production of oil in CNOOC ltd. in the Java sea: process optimization of waste treatment of produced water

Sutimadji Tjokro, author

Abstrak

Kegiatan eksplorasi dan produksi minyak dan gas bumi merupakan salah satu kegiatan pemanfaatan potensi sumber daya alam yang memberikan kontribusi pada pembangunan. Hasil kegiatan migas CNOOC yang berlokasi di laut lepas (offshore) adalah produk minyak yang mempunyai nilai ekonomis, dan limbah air terproduksi sebagai hasil ikutan dari proses eksplorasi yang tidak mempunyai nilai ekonomis. Limbah air terproduksi yang jumlahnya sangat melimpah mengandung zat-zat ikutan secara alami terdapat dalam formasi di bawah tanah seperti bahan organik dan anorganik, yang bersifat toxic, bioakumulasi dan biokonsentrasi dalam jangka waktu lama dapat mematikan biota laut. Penelitian pengolahan limbah air terproduksi menggunakan flokulan B (yang ramah lingkungan) dalam unit flotator jenis Induced Gas Flotator, sehingga diduga dapat memperbaiki kualitas limbah air terproduksi yang dibuang ke laut. Kualitas air laut sangat mempengaruhi kehidupan biota laut, dan keberadaan populasi biota laut secara langsung mempengaruhi tingkat eksploitasi sumberdaya taut yang dilakukan oleh masyarakat dalam hal ini penduduk atau nelayan demi meningkatkan kesejahteraannya. Hal ini akan menimbulkan suatu persepsi masyarakat. Penelitian ini dibagi menjadi tiga bagian utama yaitu penelitian mengenai pengelolaan limbah dengan program minimisasi limbah, penelitian mengenai pengolahan limbah air terproduksi, dan penelitian persepsi masyarakat terhadap kegiatan migas.
<hr>The exploration and production of oil are activities that exploit natural resources. These activities also contribute to economic growth. CNOOC Ltd. is an exploration and production facility that is located offshore. Offshore oil exploration produces a relatively small amount of oil compared to the large amount of waste produced water as a by-product. The oil has commercial value while the produced water does not. The large amount of produced water is considerably risky and destructive to the sea environment because it contains large quantities organic and inorganic materials that are toxic, bioaccumulated, and bioconcentrated materials that can harm the marine life over a long period of exposure. This study of a waste treatment facility for water produced as a by-product of an offshore exploration and production, uses flocculants B (which are environmentally friendly) in a flotator unit with an induced-gas flotator type that can improve the quality of the produced water. The high levels of contamination of produced water will degrade the quality of the sea water. Consequently, marine life is affected adversely. As a result the lives of fishermen and local people are also adversely affected. This situation can contribute to a negative perception of the oil exploration facility from the local people. This thesis is divided into three main sections. The first section deals with the company's waste management using the waste-minimization agenda; the second section outlines the optimization of Process of produced water treatment, and the third section deals with the perception of the local community to CNOOC Ltd.