THE CURRENT & HISTORICAL ASSESSMENT OF THE WATER ENVIRONMENT QUALITY STATUS IN DAYA BAY

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aya Bay is a semi-closed bay in the southeast of Guangdong in South China Sea. Owing to its excellent environmental condition and the result of the ocean environmental management, there are abundant organic and fishing resources. Daya Bay is an important seed bank of fishing resource and habitat for rare aquatic organism along the coastal area of South China. Daya Bay is also a legislated marine national park for aquatic resource in Guangdong Province. With the urban and industrial developing in Daya Bay area over the more than 10 years, the pollutant discharge into the Daya Bay has increased. As a result, the water environment quality in the bay has been degraded in trends and the ecological environment in part of the waters has obviously degraded. For this reason, this paper has collected the water quality monitoring materials in Daya Bay waters from 8 stations over the past 13 years (from 1990, 1992 through to 2001, 2002) and analyzed the trends and extent of water environmental quality degradation. It has been found that the water environment quality has changed to a certain extent in the marine national park over the past 13 years, and in particular, the pollution is quite severe in the inner bay area. The main assessment results showed: the concentrations of inorganic nitrogen, activated phosphate, Pb, Cu, Cd, Cyanide, volatile phenol, BOD5 and the values of pH etc. have increased from year to year, and have exceeded the Class B of sea water quality standard. In particular, the average concentration of inorganic nitrogen in 2001 increased by 594.2% as compared with 1990. The concentration of activated phosphate in the inner bay inshore waters in 2001-2002 increased by 81% as compared with 1990. The Pb content increased by 10 times in 12 years from 1990 – 2001. Although the oil content has decreased in trends from year to year, it has exceeded the standard value in the whole inner bay. The oil content in the inner bay waters was more than twice as high as the standard requirement in 2001. The concentrations of Cu, Cd and Cyanide have increased in trends every year. The Cu content in the inner bay inshore water area has increased by 75%, the Cd content increased by 49 times from 1990 to 2002, and the Cyanide content increased by 100% from 1992 to 2001. However, the Cd and Cyanide content can still meet the Class B standard. Moreover, although the volatile phenol and pH value have increased in trends every year, they can still meet the Class B standard requirement. Based on the past and present status of water environment pollution in Daya Bay, this paper has done some causal analysis for the pollution phenomena, and has proposed the measures to against the water pollution.