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**(ACE 48/94)**  
for information

## **Progress Report on the Implementation of The Water Pollution Control Ordinance in The Eastern and Western Buffer Water Control Zones**

### **BACKGROUND**

This paper has been prepared at the request of the ACE meeting on 15 August 1994. The paper summarises the progress of implementation of the Water Pollution Control Ordinance (WPCO) in the Eastern and Western Buffer Water Control Zones (WCZ).

2. The major areas within the Eastern Buffer WCZ are Chai Wan and Shau Kei Wan while the Western Buffer includes Tsing Yi, part of Tsuen Wan, Sham Tseng, Aberdeen, Wong Chuk Hang, Ap Lei Chau and Pok Fu Lam. The Eastern and Western Buffer WCZs were established on 1 June 1993 (the First Appointed Day) and 1 December 1993 (the Second Appointed Day or SAD).

3. In the Eastern and Western Buffer WCZs, there are 2640 industrial, commercial, institutional and private sewage treatment plant discharges, and 2220 domestic discharges. Most of the domestic discharges are located within the unsewered areas of Sham Tseng and Tsing Lung Tau of the Western Buffer WCZ.

### **IMPLEMENTATION OF CONTROL**

4. Since establishment about 1810 licence applications have been received, mainly from industrial and commercial discharges. About 1320 licences have been issued, 40% of which were for industrial discharges.

5. Regular monitoring of the higher priority industrial and commercial discharges has been carried out by EPD staff. Up to the end of August 1994, about 600 written warnings have been served and 12 non-complying discharges have been convicted resulting in total fines of \$250,000. Another 35 prosecutions are being processed.

### **LEVEL OF COMPLIANCE**

6. The major purpose of control is to achieve and maintain the water quality objectives (WQO). This is achieved by managing the discharges and pollution loads in the catchment through a licensing system, i.e. by imposing effluent standards and other conditions for each discharge. It is considered therefore that the percentage of discharges that comply with the effluent standards, and the percentage of compliance with WQO are the best indicators of the level of compliance with legislative controls. It should however be noted that major improvements in water quality cannot be achieved through controls under WPCO alone, but it requires an integrated strategy consisting also of complementary controls under the Waste Disposal Ordinance (WDO) (Chemical Waste Control Regulation) and the provision of adequate sewerage facilities.

### **Compliance with Effluent Standards**

7. It normally takes three years upon establishment of a WCZ to achieve a significant level of compliance of discharges with effluent standards. In the case of the Eastern and Western Buffer WCZs, of the higher priority industrial and commercial discharges, it is estimated that over 70% are complying with the effluent standards. Some non-complying dischargers are carrying out rectification work and more than 75 factories are planning to install wastewater treatment facilities.

8. Of the approximately 1000 industrial discharges, about 40 have ceased operation in the zones since the SAD. There is no requirement for the dischargers to inform EPD why they have ceased operation. From informal conversations with the dischargers, however, only four have indicated that they were moving because of the new controls.

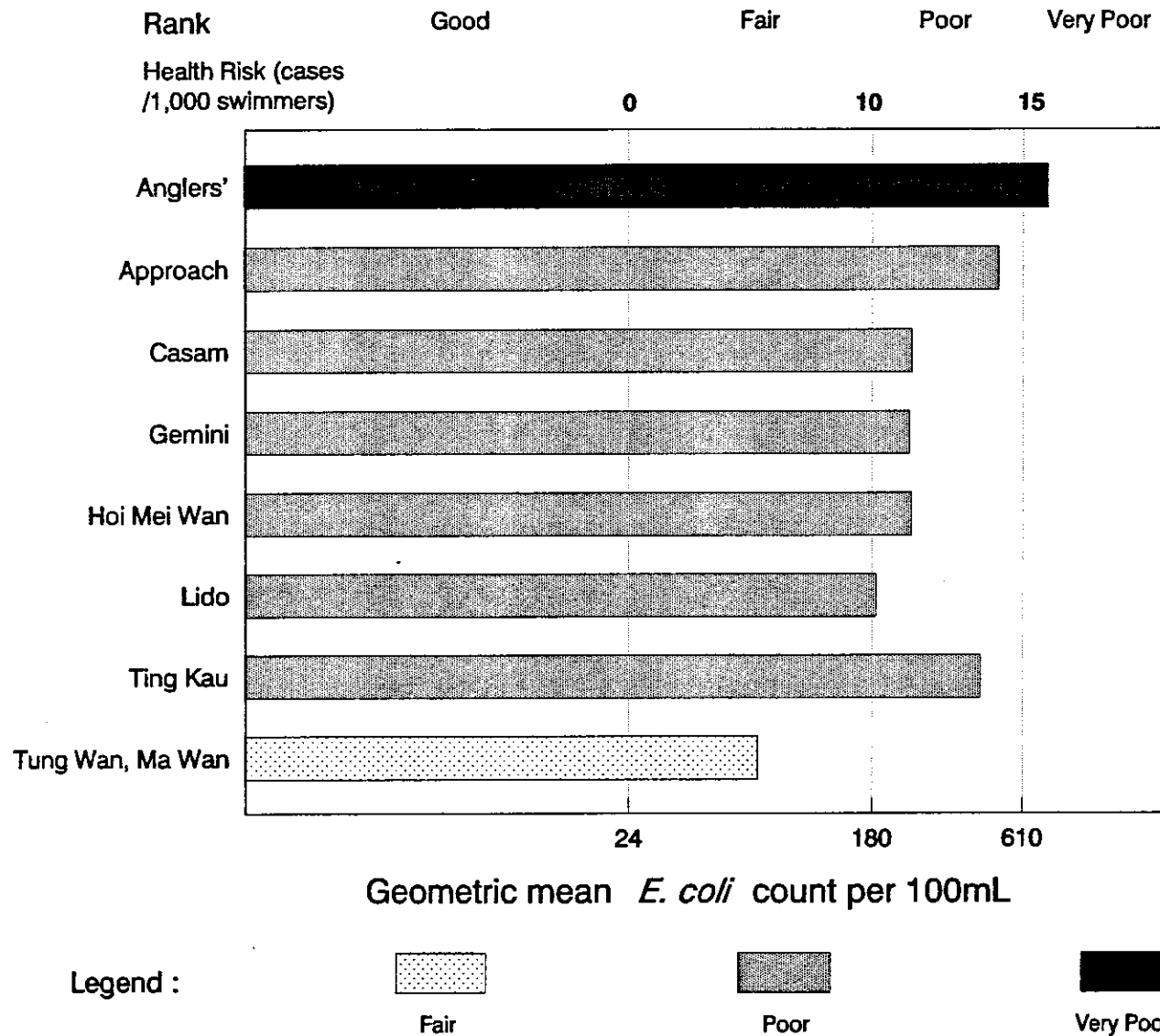
### **Pollution Load Reduction**

9. As a result of WPCO enforcement, the reduction in pollution loads to the environment since SAD is estimated to be around 2500 kg BOD (Biological Oxygen Demand) per day (50,000 population equivalent). Significant reduction in pollution loads is anticipated when communal sewers are provided to the unsewered areas at the west of Tsuen Wan, Ap Lei Chau and Pok Fu Lam under various sewerage master plans.

### **Compliance with Water Quality Objectives**

10. There are eight gazetted beaches in the Western Buffer WCZ and none in the Eastern Buffer WCZ. As shown in Figure 1, only the Tung Wan Beach at Ma Wan could meet the WQO of 180 E.coli count/100ml, while all the 7 beaches at the west of Tsuen Wan were ranked poor to very poor. The poor water quality of these beaches is attributed to polluted seawater from Victoria Harbour and Rambler Channel, and to a certain extent discharges from unsewered areas behind the beaches. The pollution caused by the former sources is unlikely to be reduced until the full implementation of the territorial sewage disposal strategy, the first stage of which is scheduled for completion in 1997. As for the discharges in the beach hinterlands, significant improvement is anticipated after the provision of communal sewers in 1999 under the Tsuen Wan Rural Area Sewerage Master Plan. Meanwhile, effective enforcement of WPCO and the implementation of the Livestock Waste Control Scheme under WDO should help bring about local improvements in beach water quality.

11. The marine waters in the Eastern and Western Buffer WCZs generally meet the WQOs although the levels of inorganic nitrogen in the waters at Chai Wan and Tsing Yi are over the upper limit. Figures 2 & 3 show the rates of compliance with key WQOs. The high levels of inorganic nitrogen at Chai Wan and Tsing Yi are due to the excessive nutrients from the Victoria Harbour and the Pearl River.



**FIGURE 1 Ranking of gazetted beaches in Western Buffer Water Control Zone based on the results of water quality monitoring since First Appointed Day**

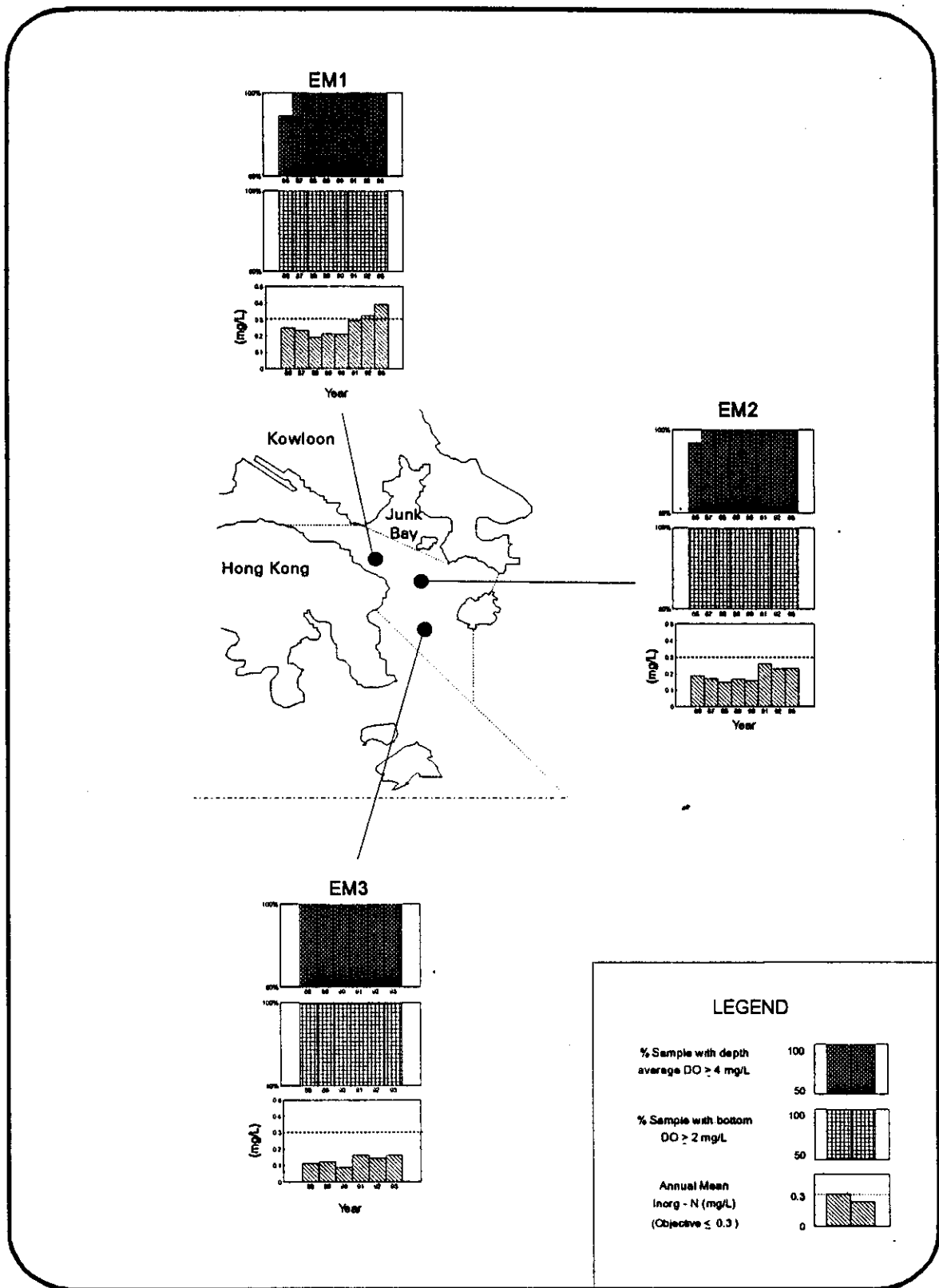


Fig. 2 Rates of compliance with key water quality objectives in Eastern Buffer WCZ

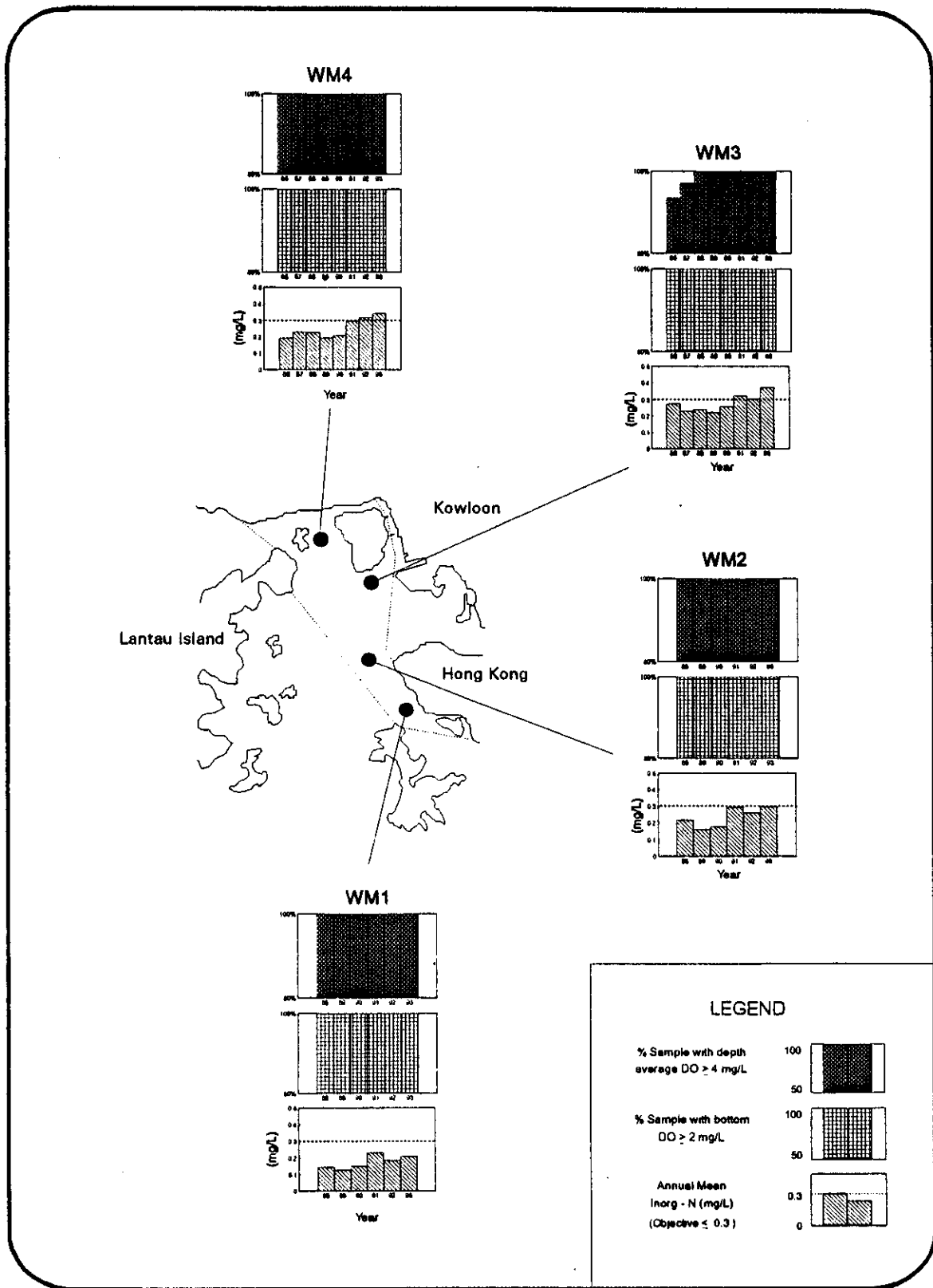


Fig. 3 Rates of compliance with key water quality objectives in Western Buffer WCZ