

Fig. 5. 3-12(2) Calculated Water Quality in Case 5-2 (Dredging the Sediment in Block D in 2010)

(DO)

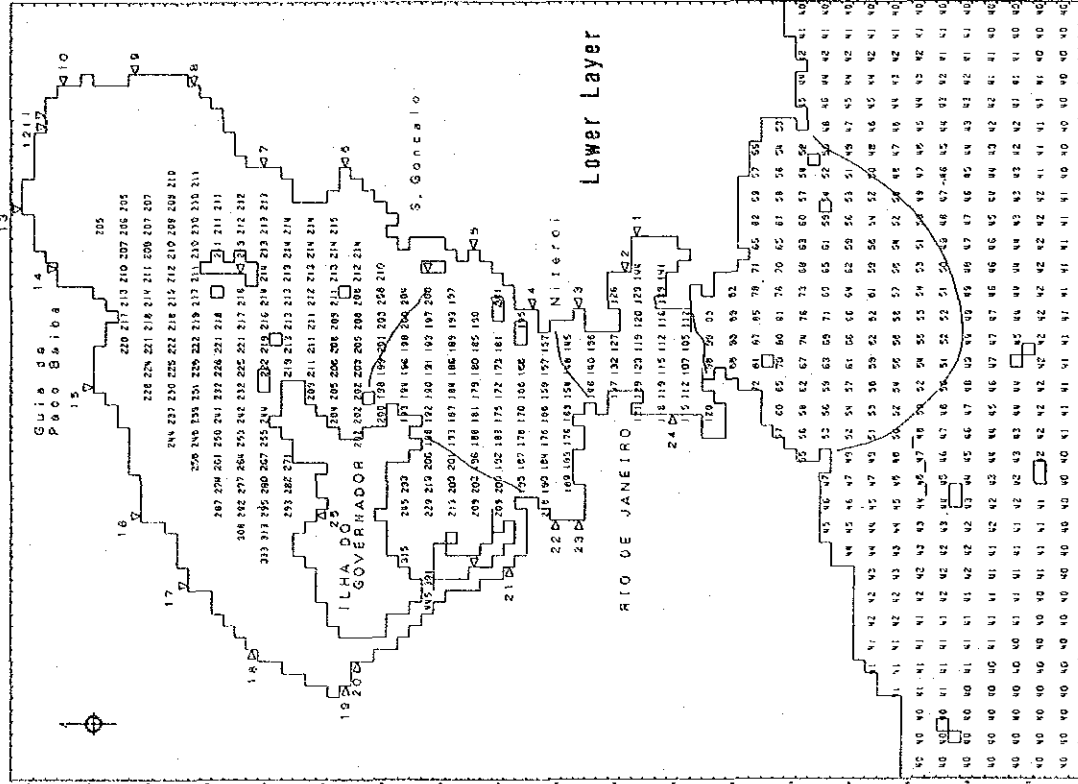
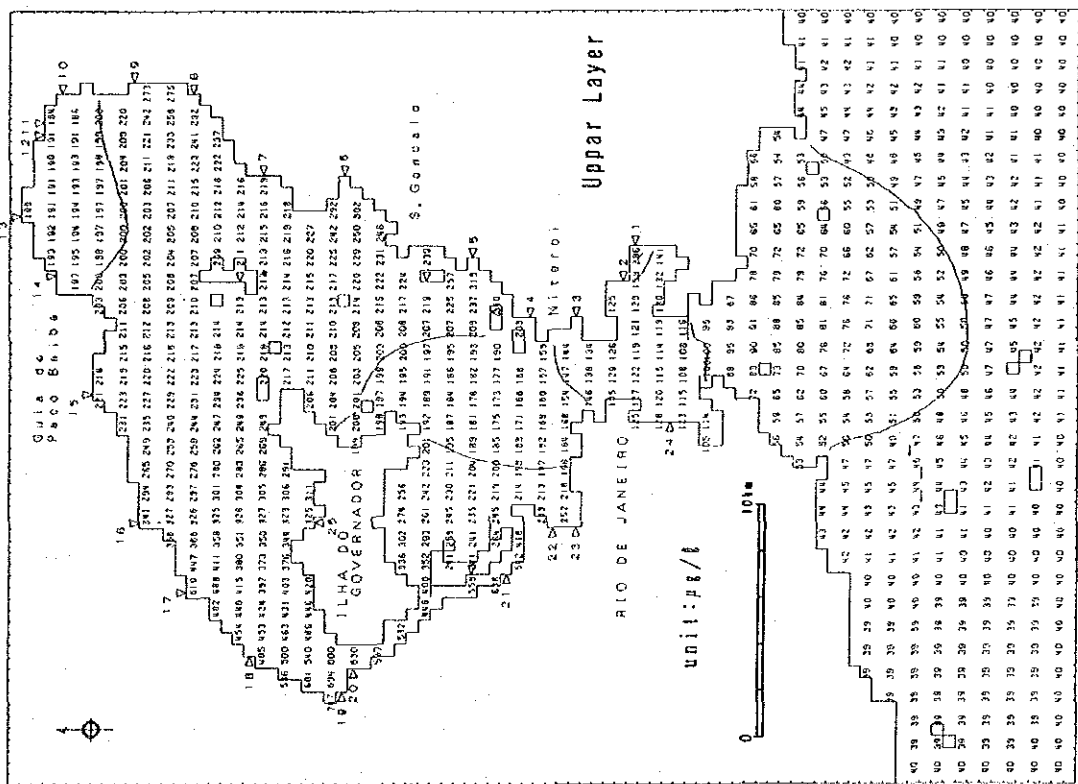


Fig. 5.3-12(3) Calculated Water Quality in Case 5-2 (Dredging the Sediment in Block D in 2010)

(T-P)

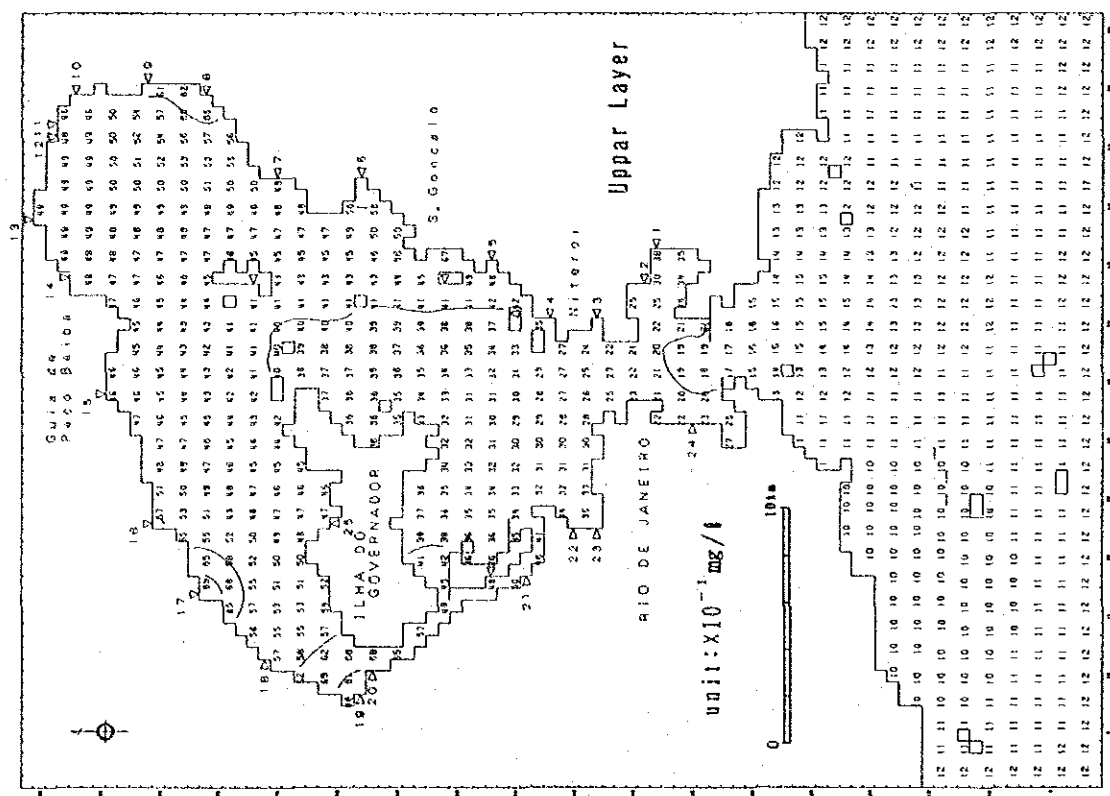
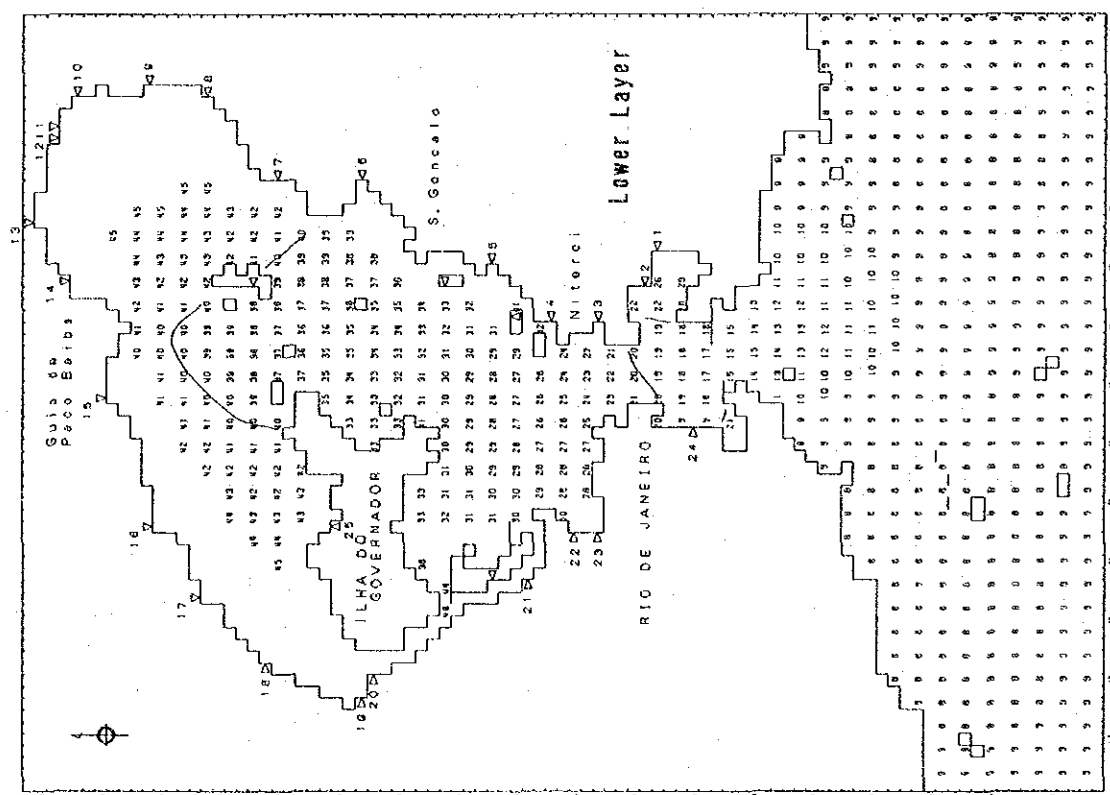


Fig. 5.3-13(1) Calculated Water Quality in Case 5-3 (Dredging the Sediment in Block E1 in 2010) (BOD)

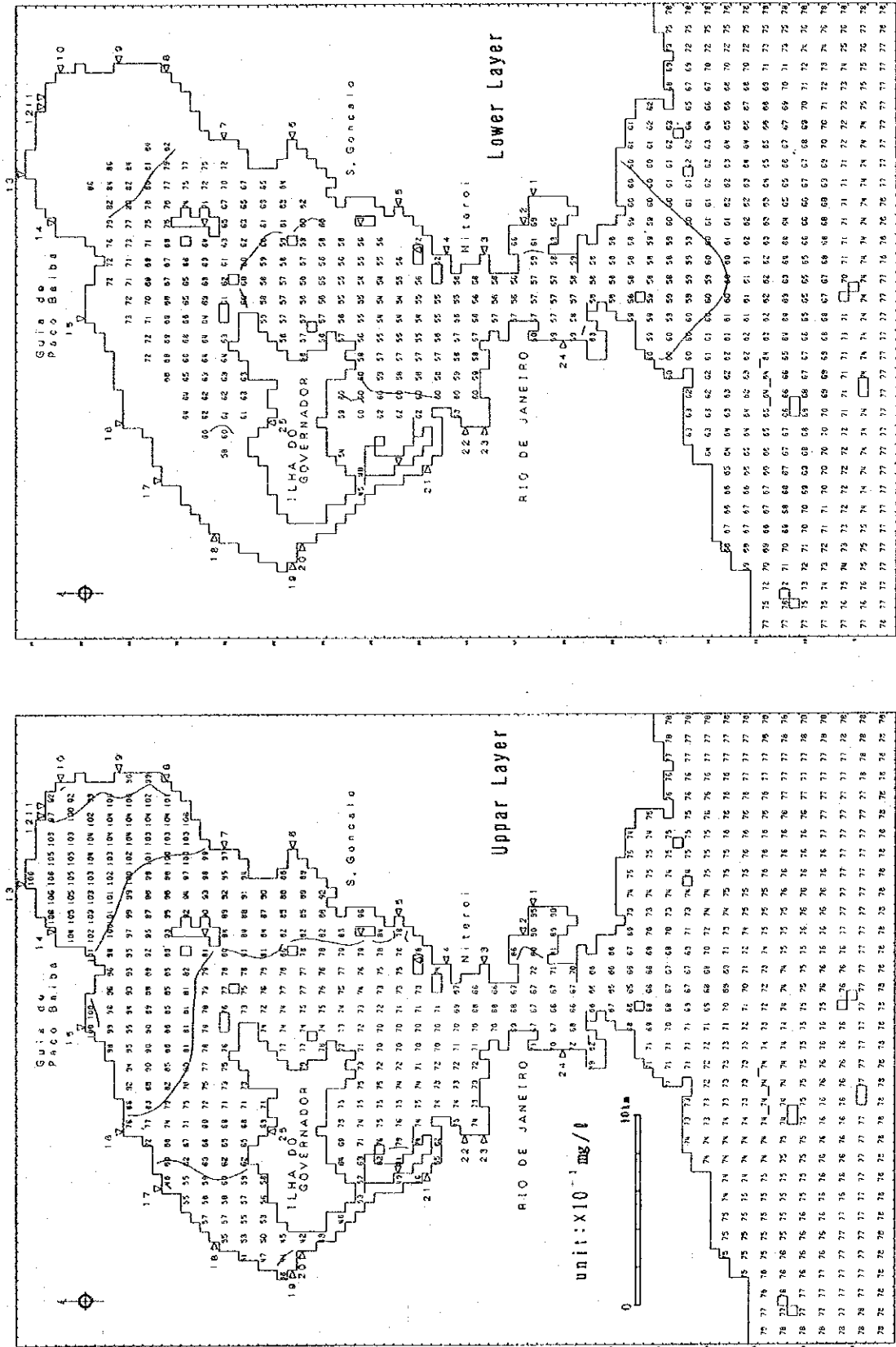


Fig. 5.3-13(2) Calculated Water Quality in Case 5-3 (Dredging the Sediment in Block E1 in 2010)

(DO)

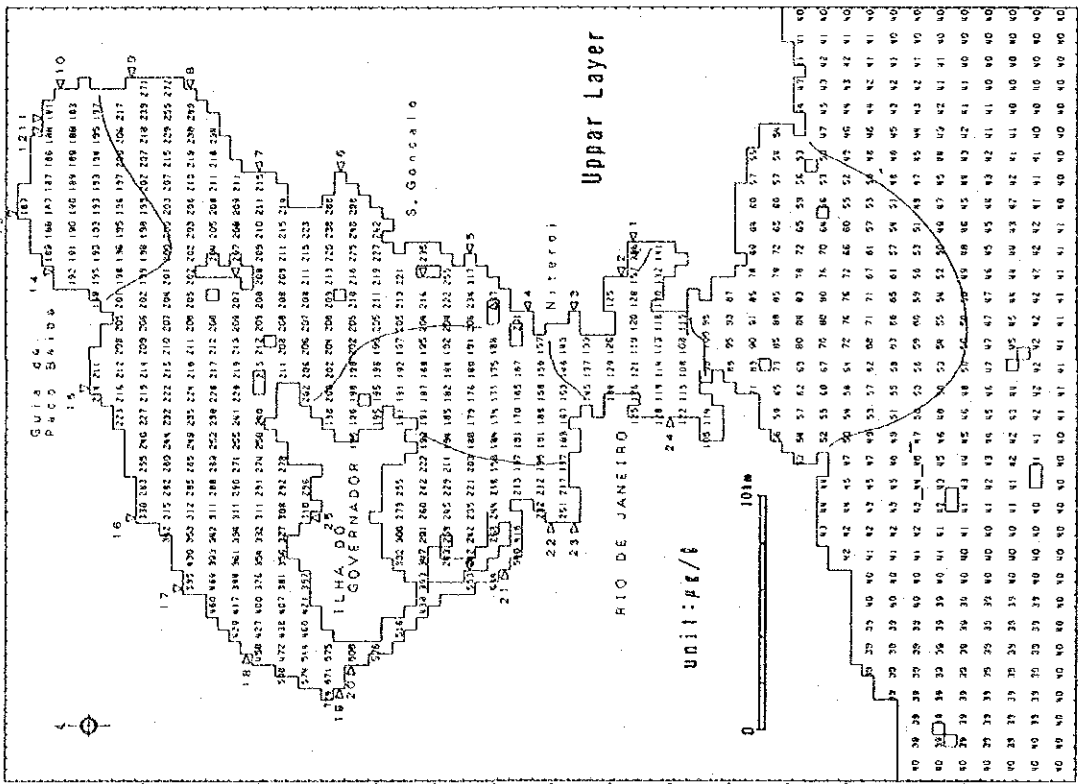
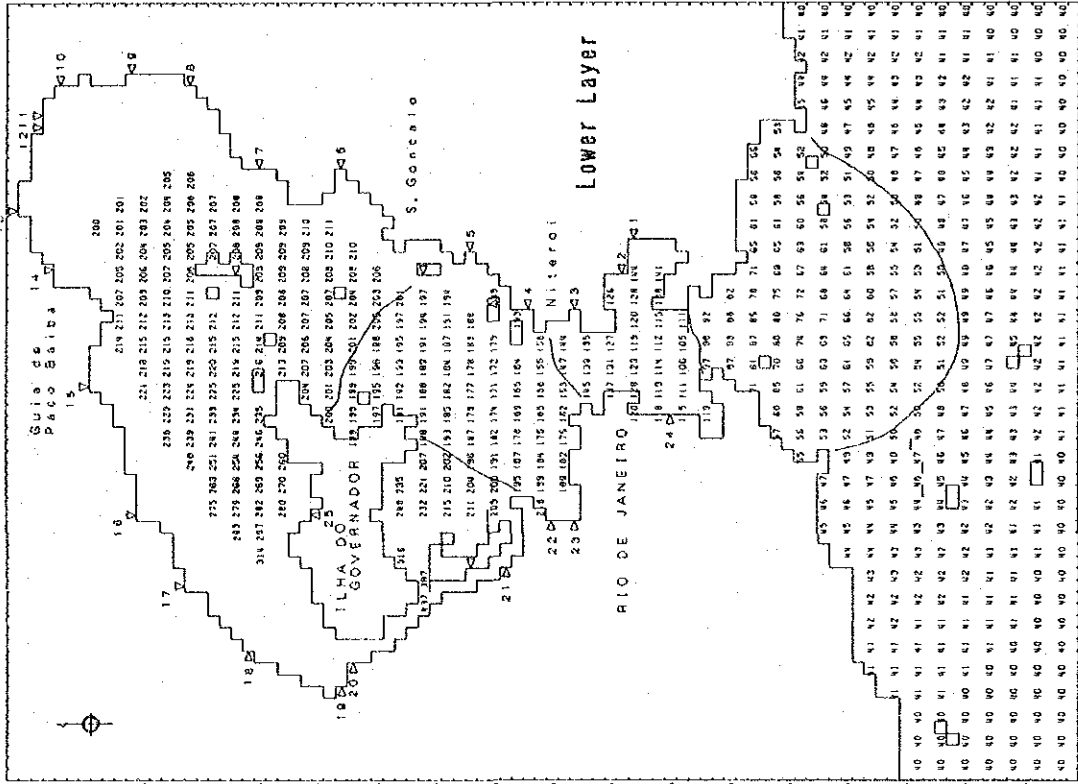


Fig. 5.3-13(3) Calculated Water Quality in Case 5-3 (Dredging the Sediment in Block E1 in 2010)

(T-P)

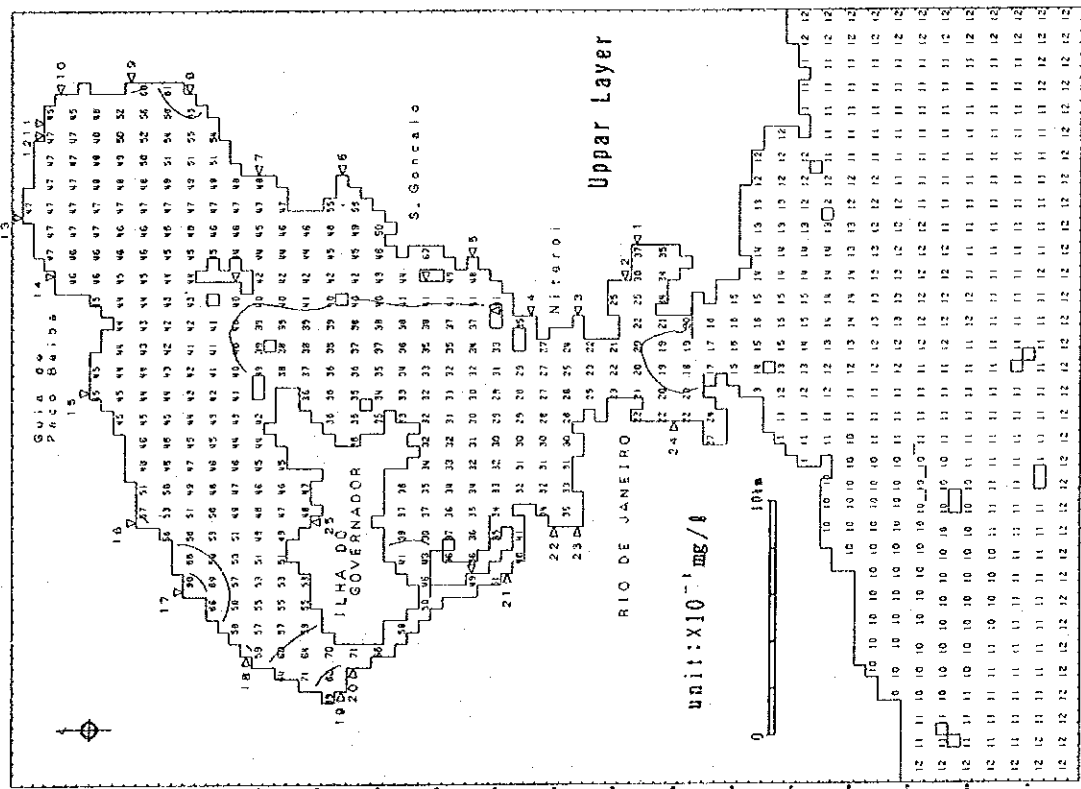
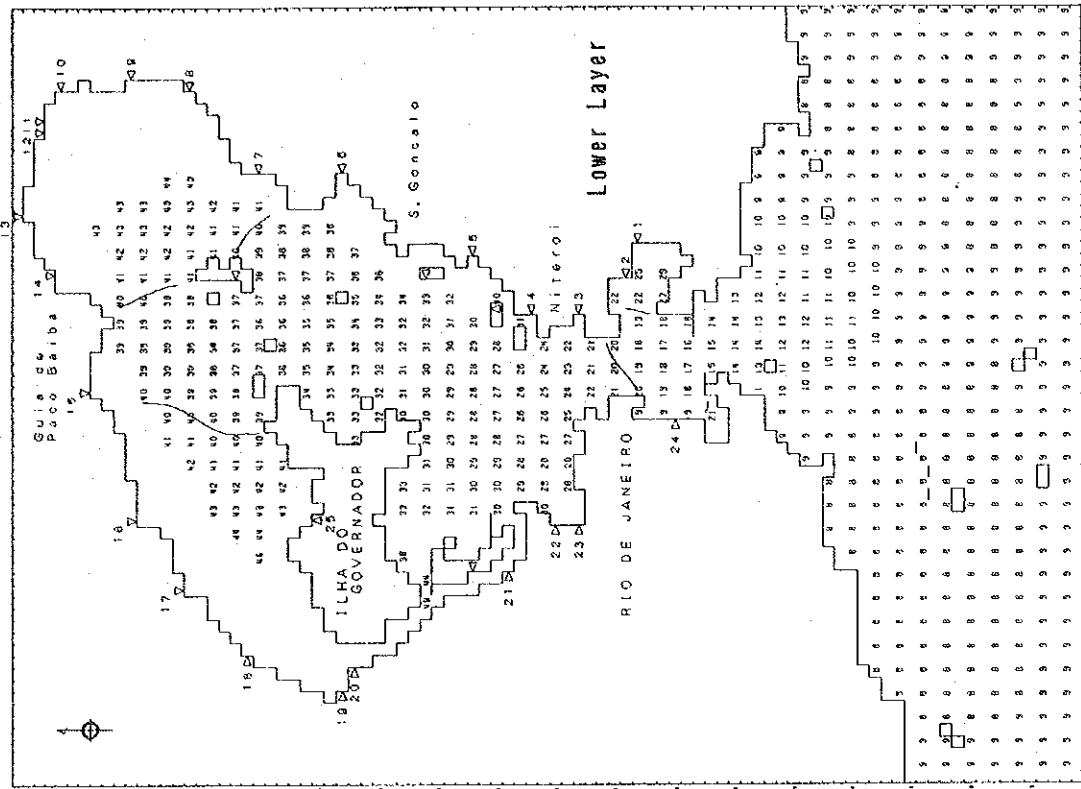


Fig. 5.3-14(1) Calculated Water Quality in Case 5-4 (Dredging the Sediment in Block E2 in 2010) (BOD)

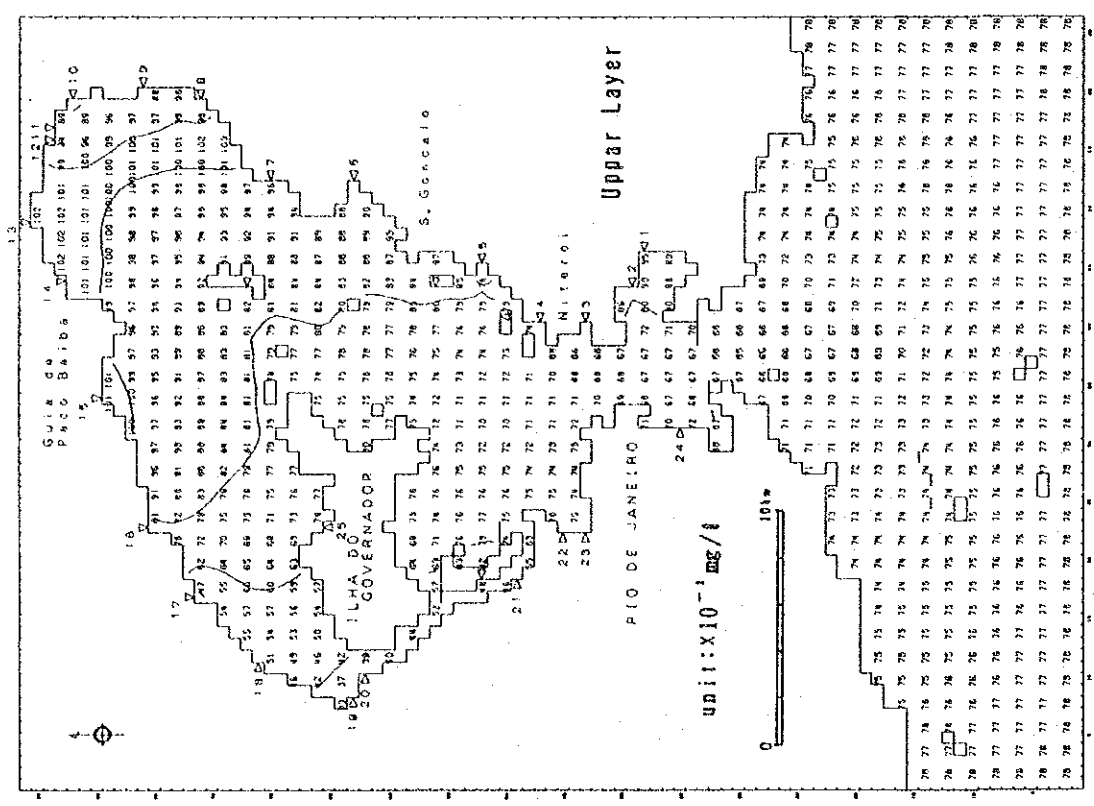
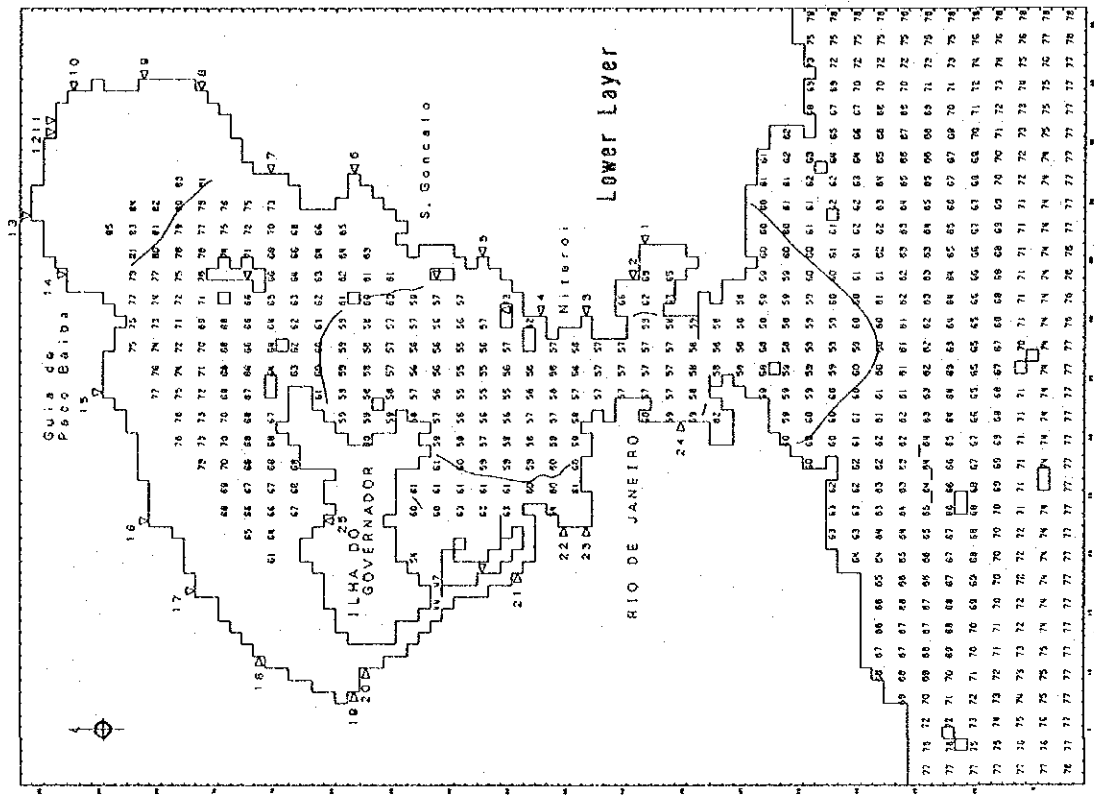


Fig. 5. 3-14(2) Calculated Water Quality in Case 5-4 (Dredging the Sediment in Block E2 in 2010) (DO)

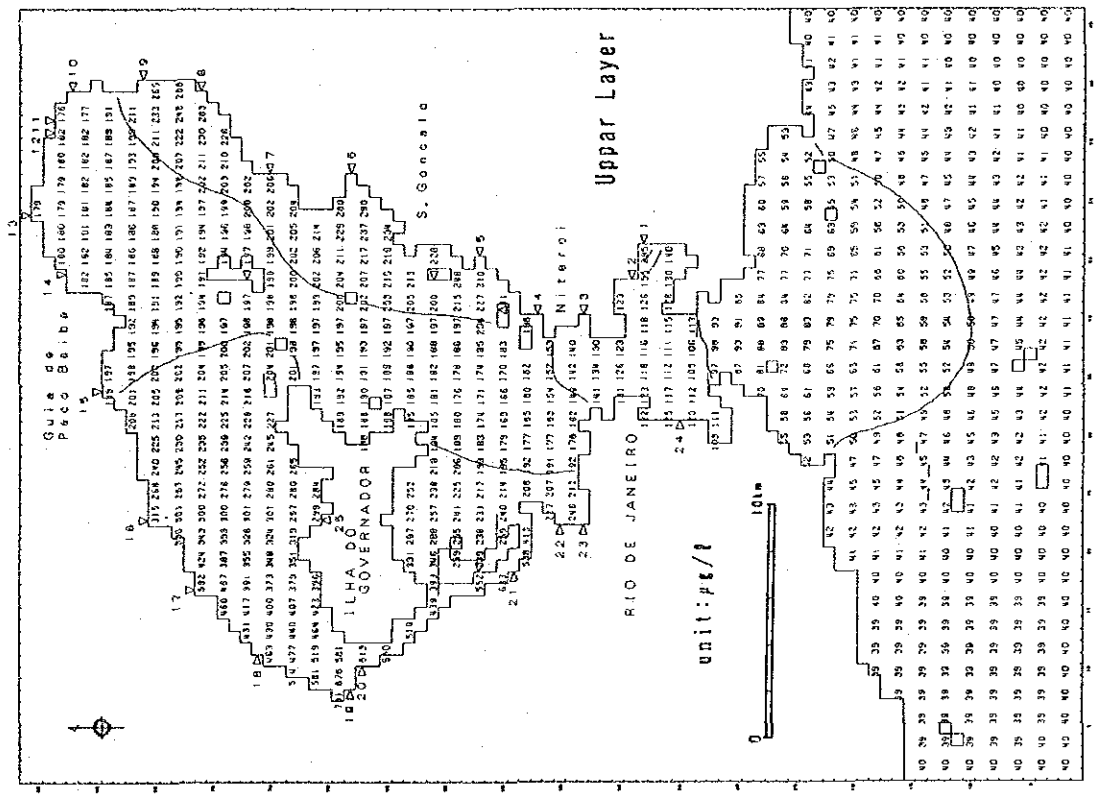
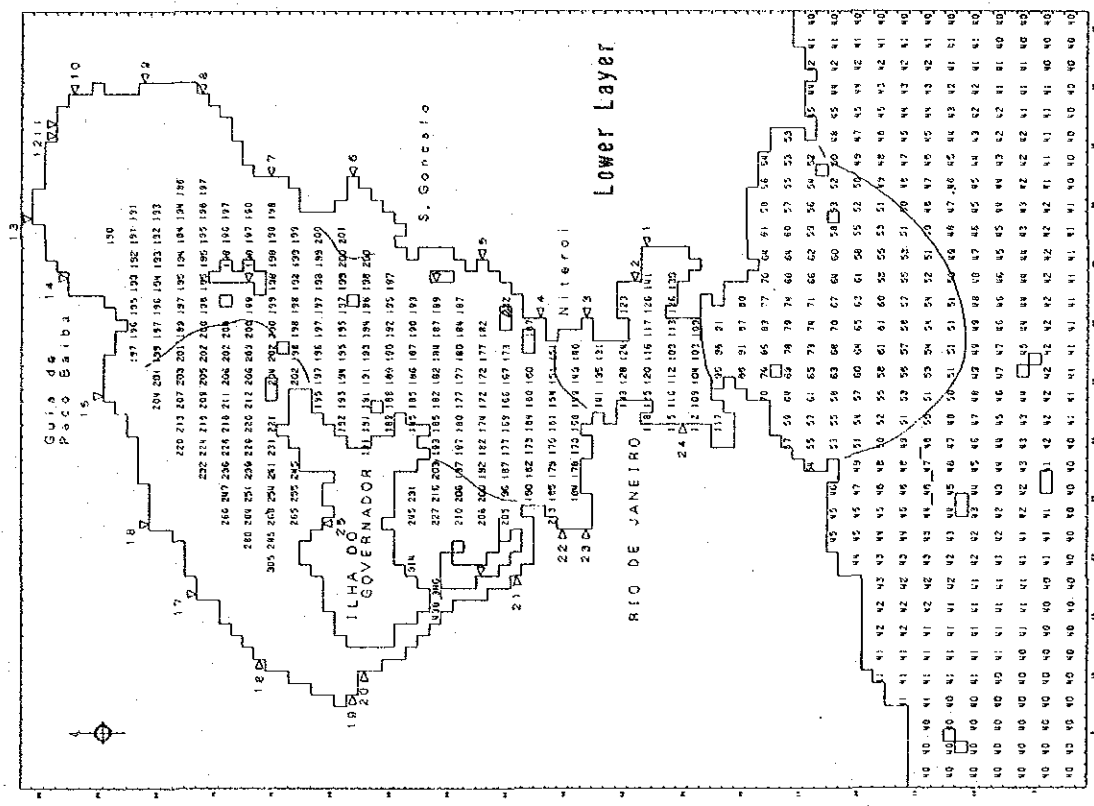


Fig. 5.3-14(3) Calculated Water Quality in Case 5-4 (Dredging the Sediment in Block E2 in 2010)

(T-P)



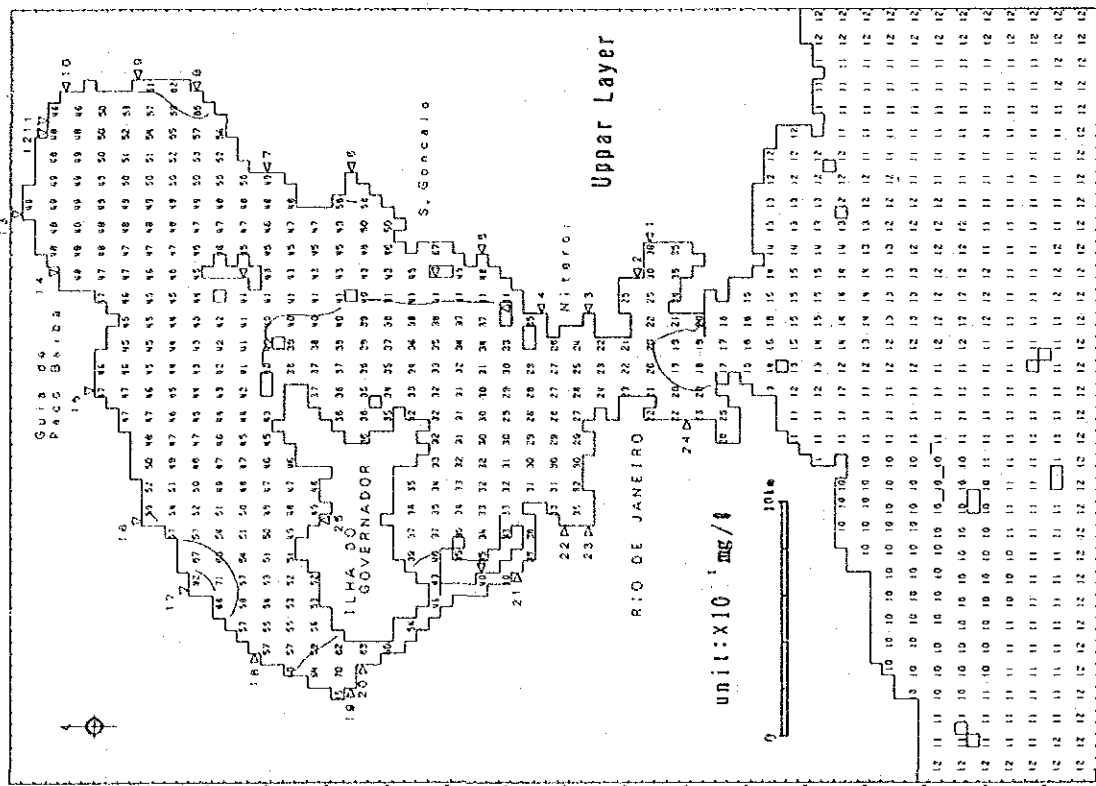
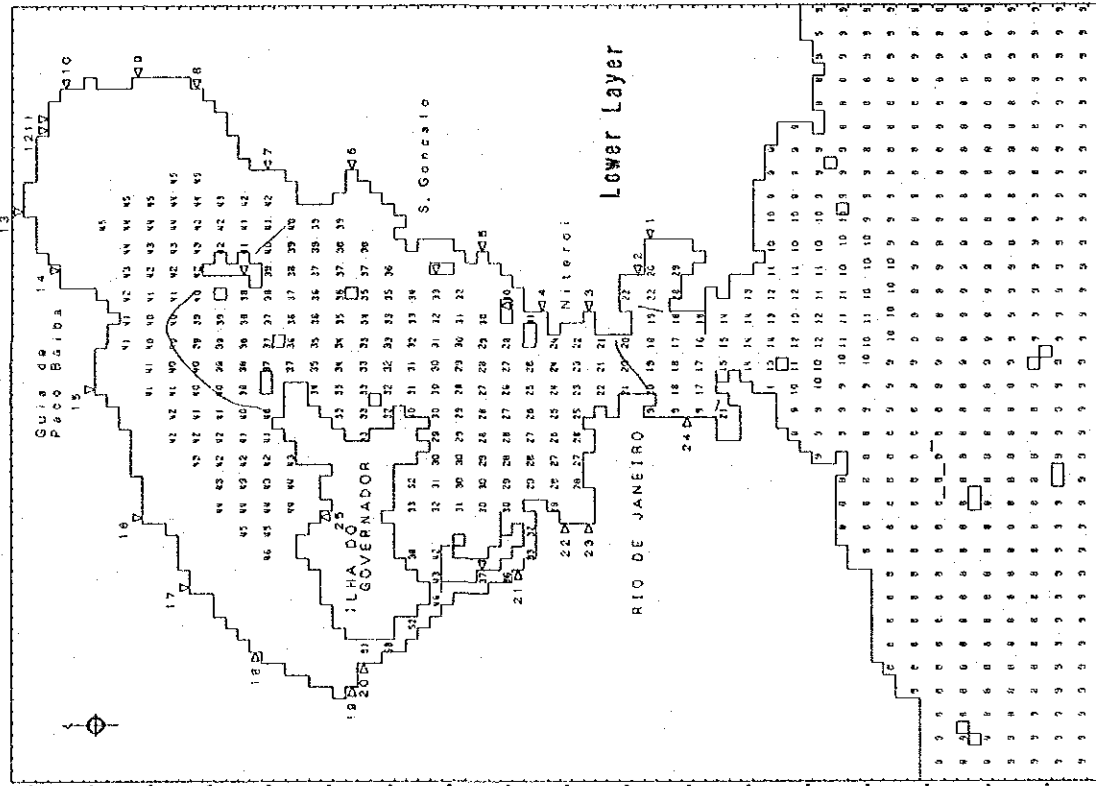


Fig. 5.3-15(1) Calculated Water Quality in Case 6-1 (Deepening the channels in 2010)

(BOD)

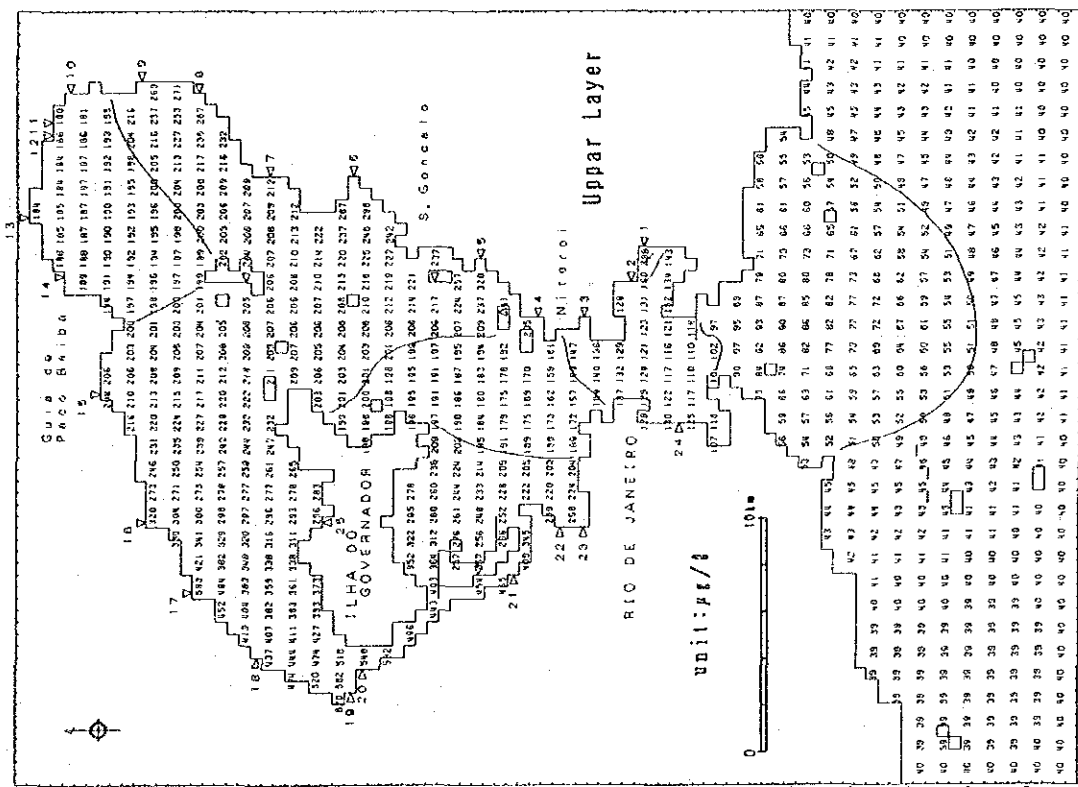
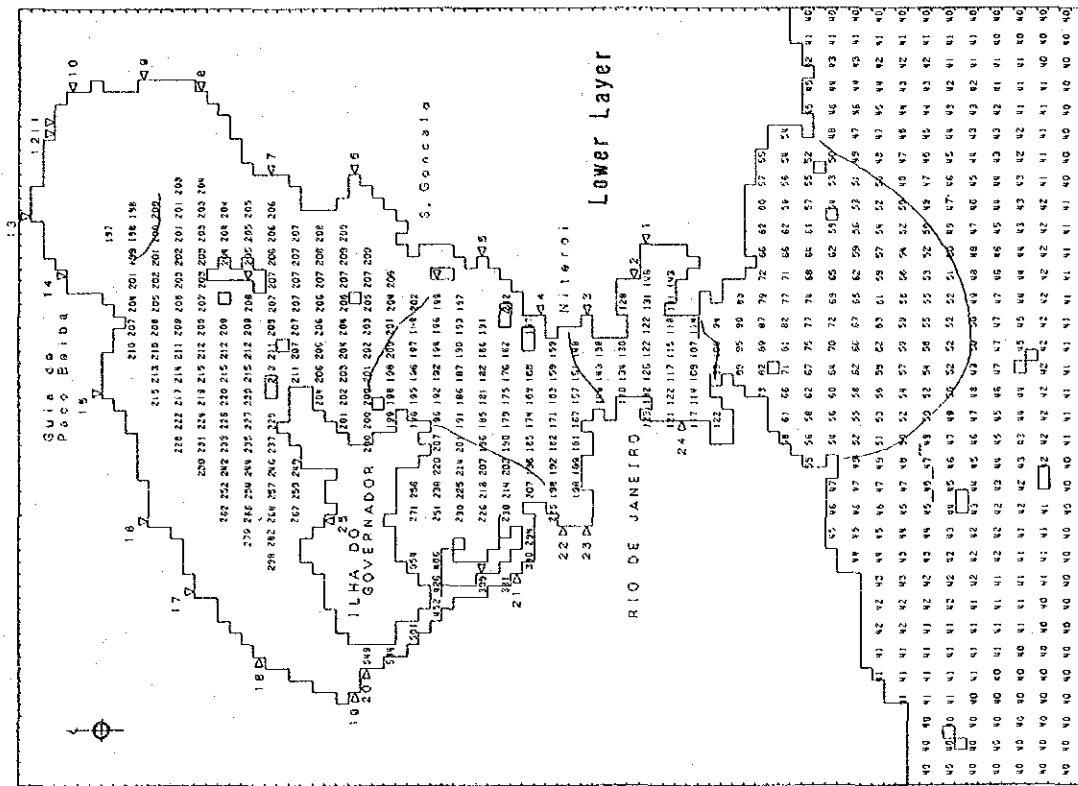


Fig. 5. 3-15(2) Calculated Water Quality in Case 6-1 (Deepening the channels in 2010)

(T-P)

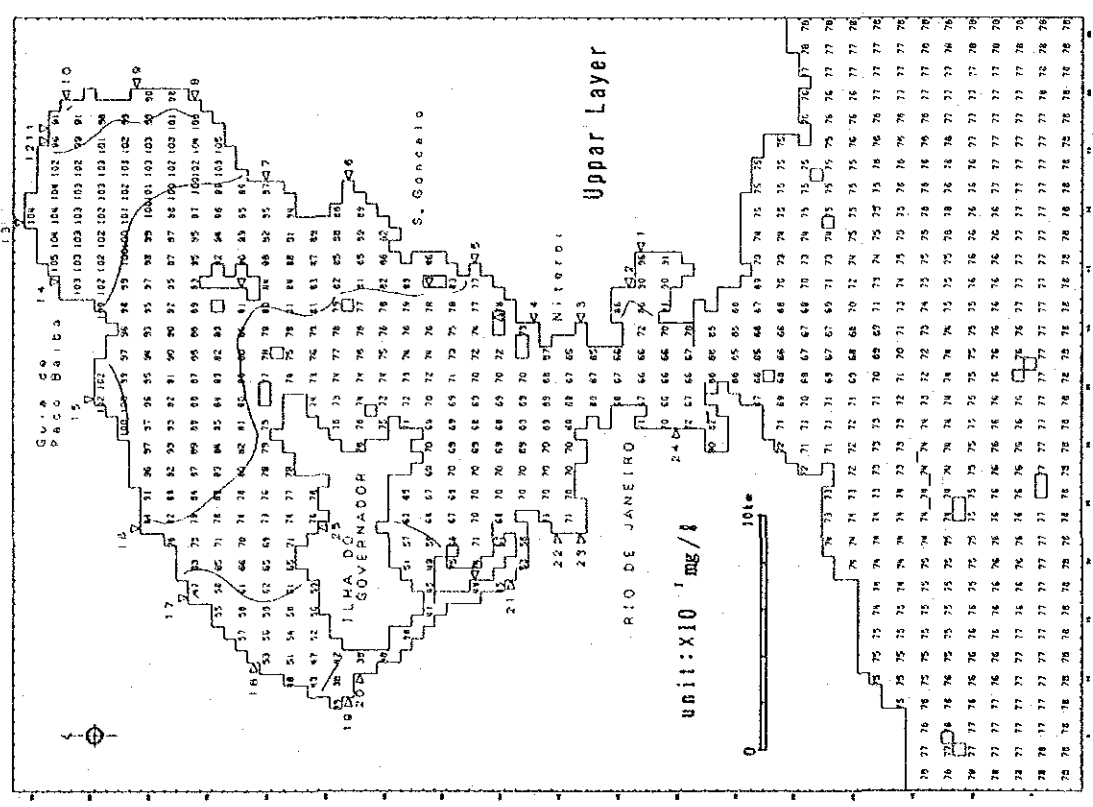
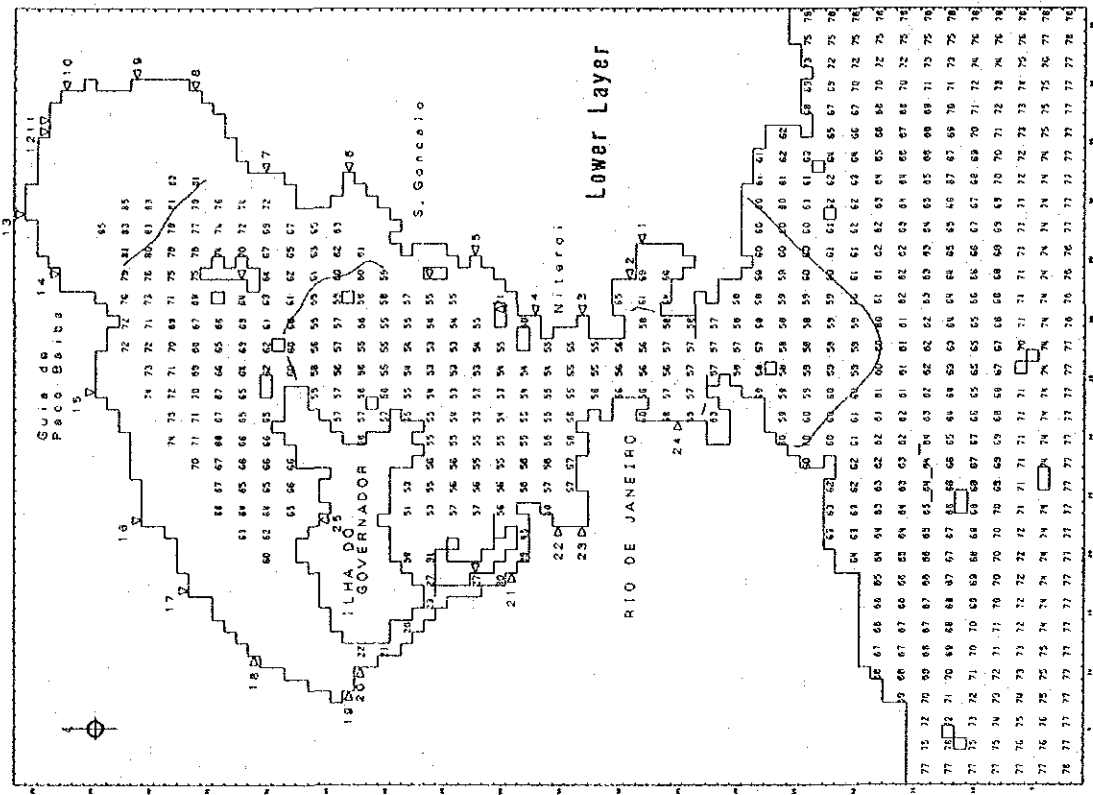


Fig. 5.3-15(3) Calculated Water Quality in Case 6-1 (Deepening the channels in 2010) (DO)

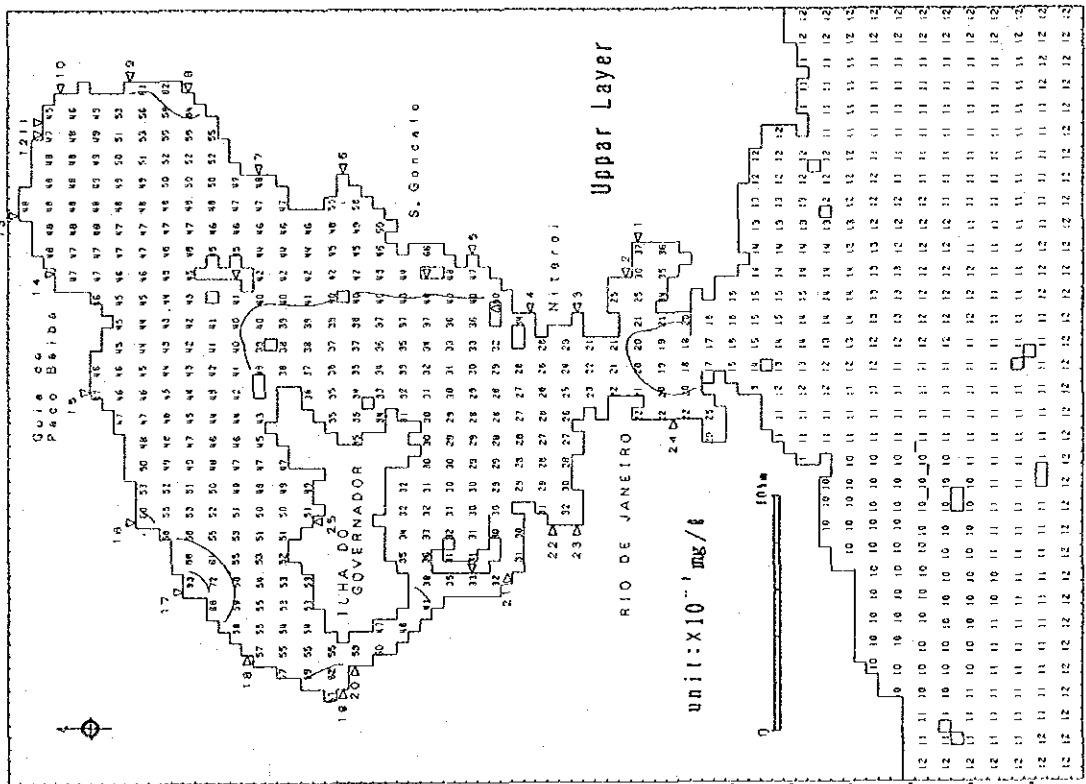
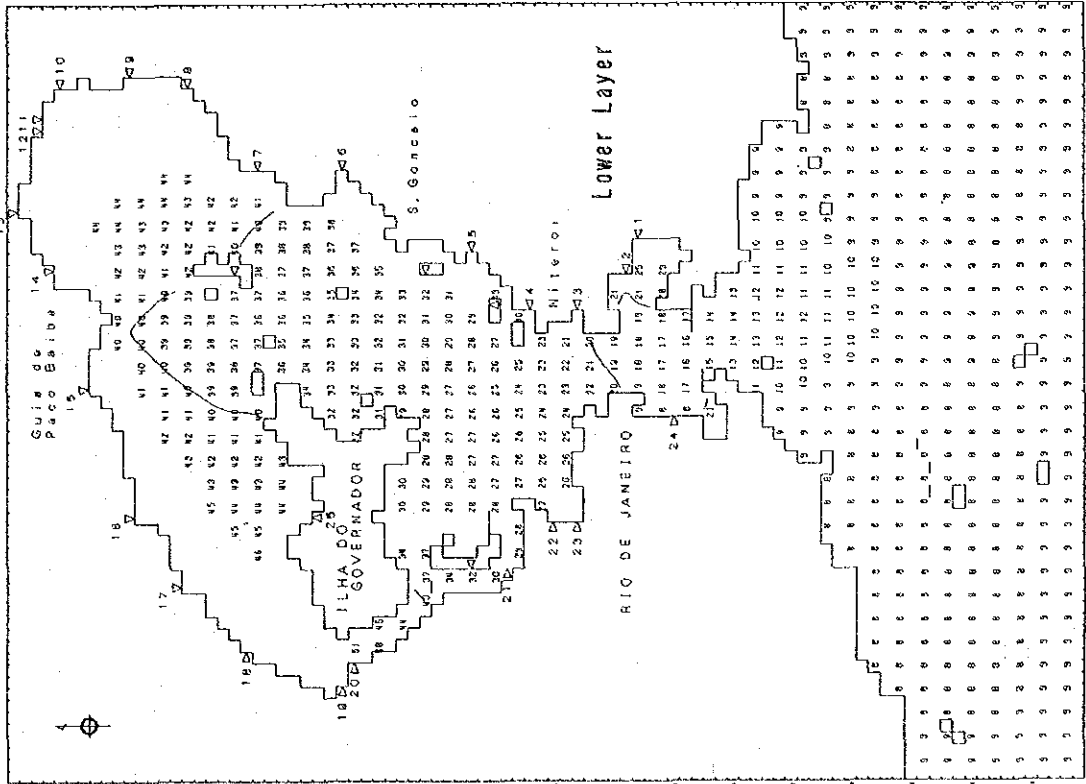


Fig. 5.3-16(1) Calculated Water Quality in Case 6-2 (Deepening and Widening the channels in 2010) (BOD)

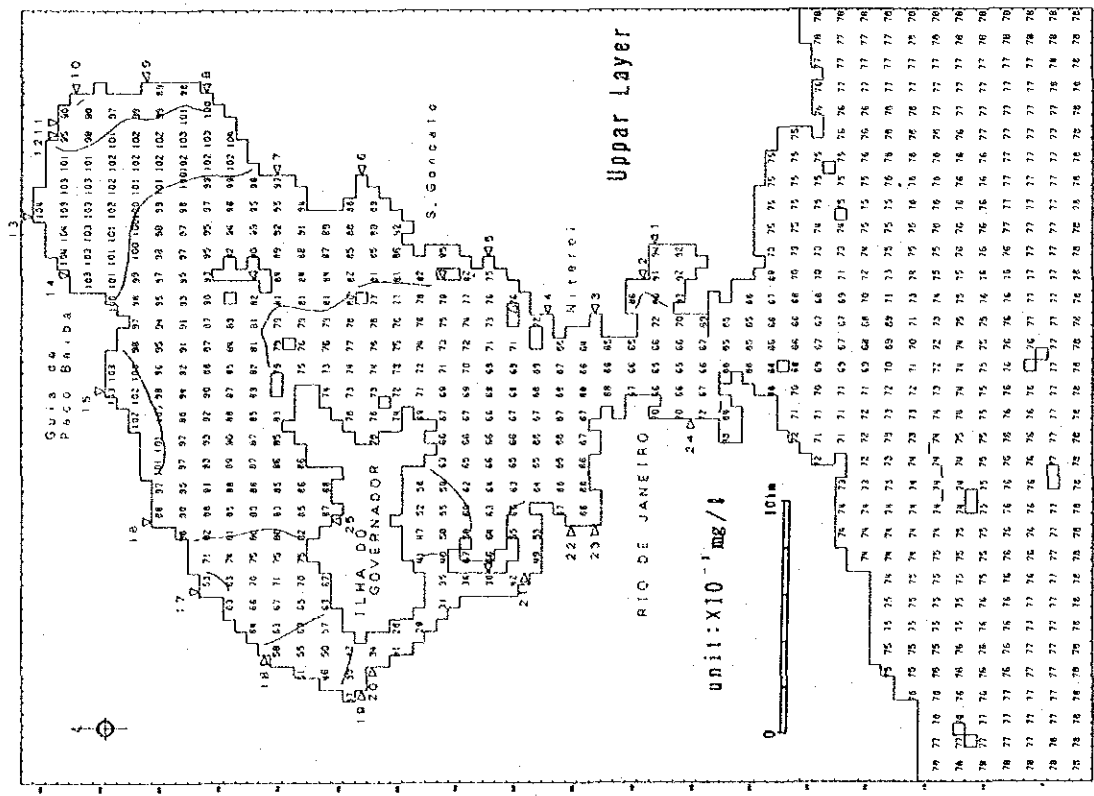
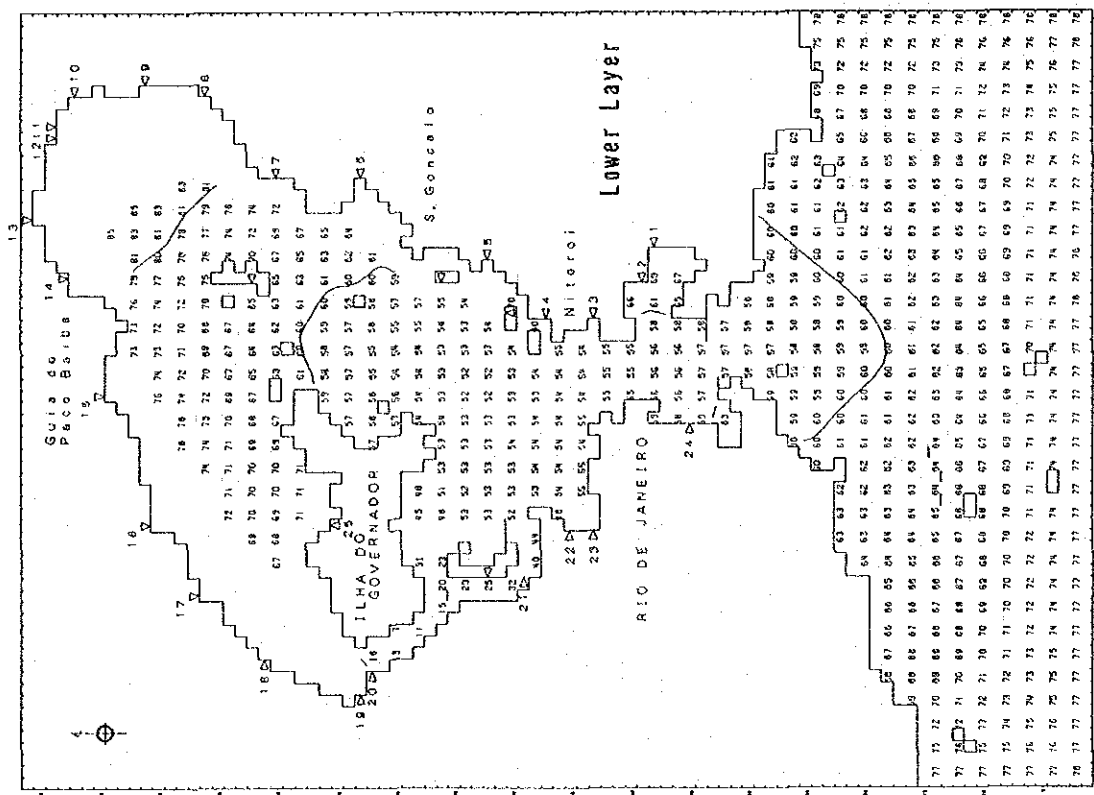


Fig. 5. 3-16(2) Calculated Water Quality in Case 6-2 (Deepening and Widening the channels in 2010) (DO)

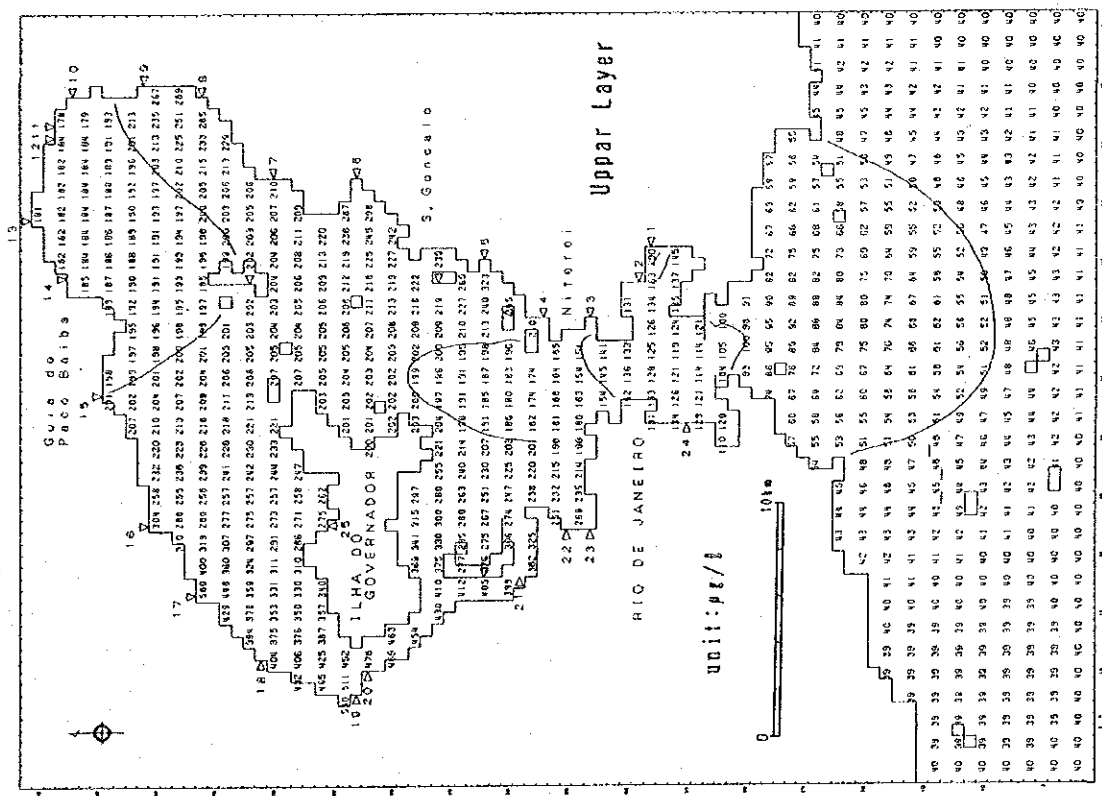
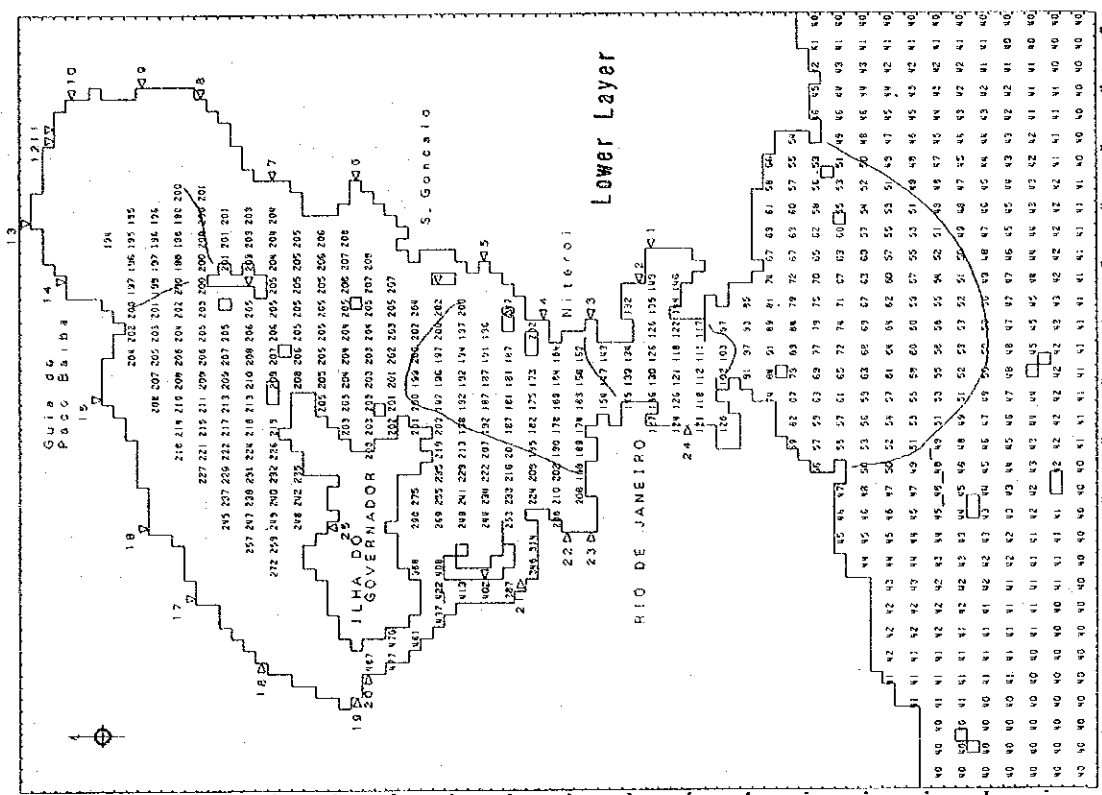


Fig. 5. 3-16(3) Calculated Water Quality in Case 6-2 (Deepening and Widening the channels in 2010)

(T-P)

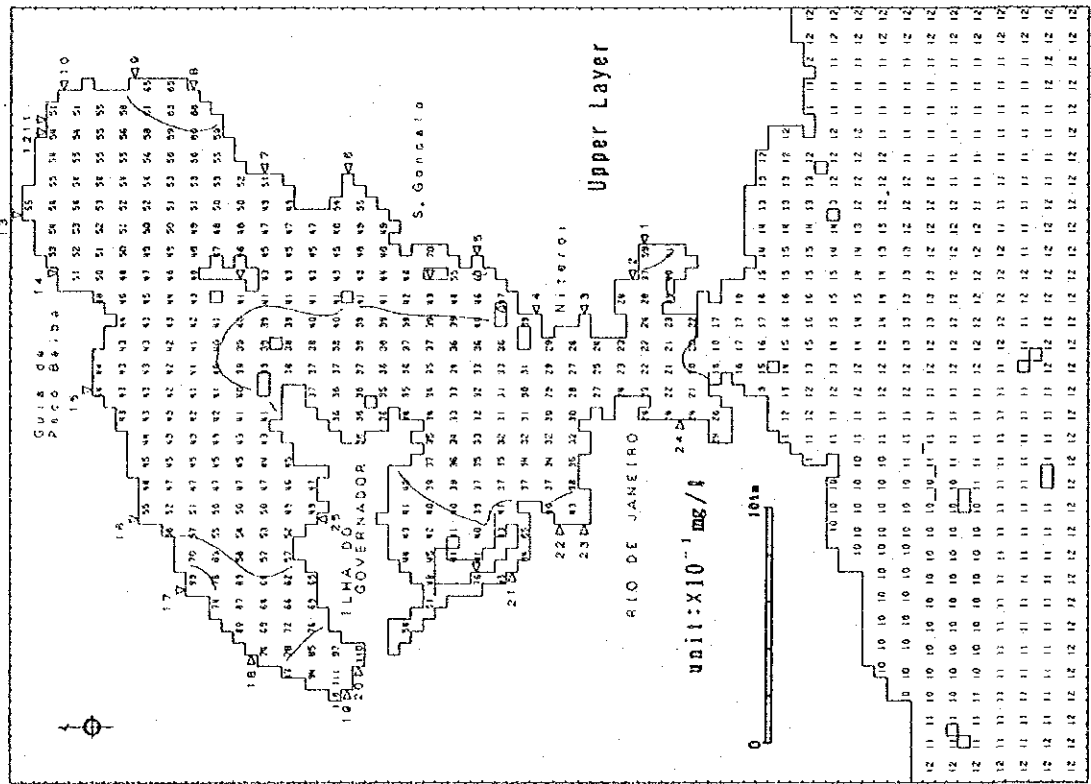
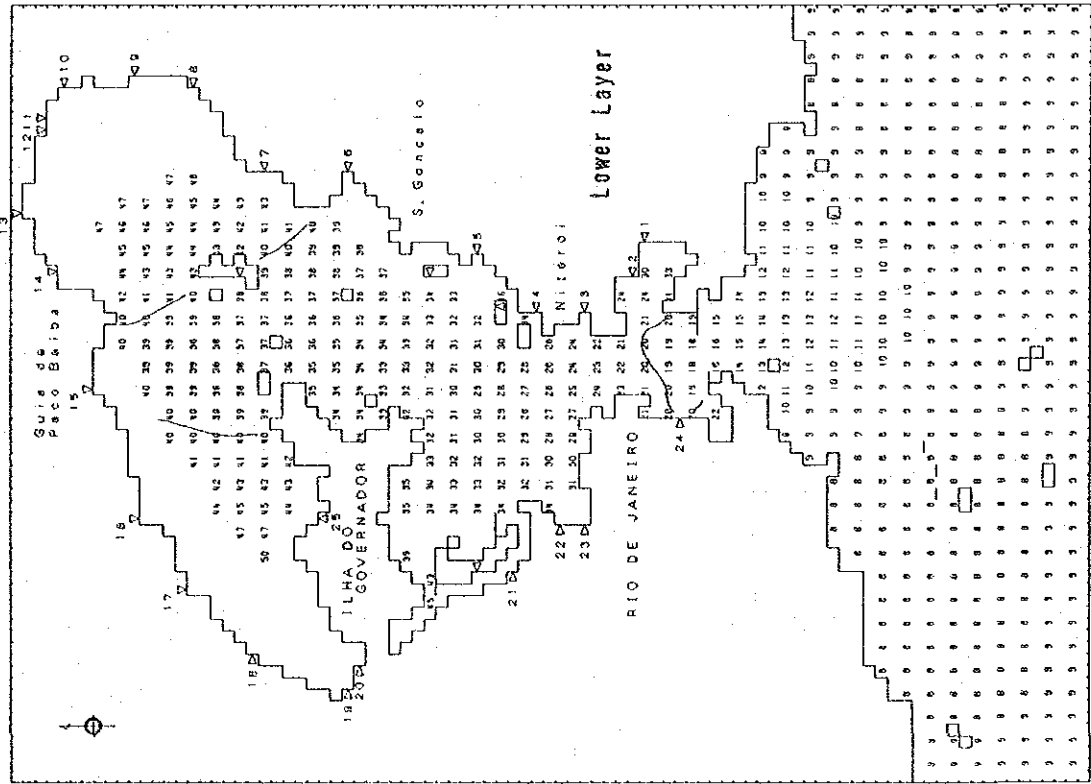


Fig. 5.3-17(1) Calculated Water Quality in Case 6-3 (BOD)  
 (Filling up the channel sidelong the Governador)

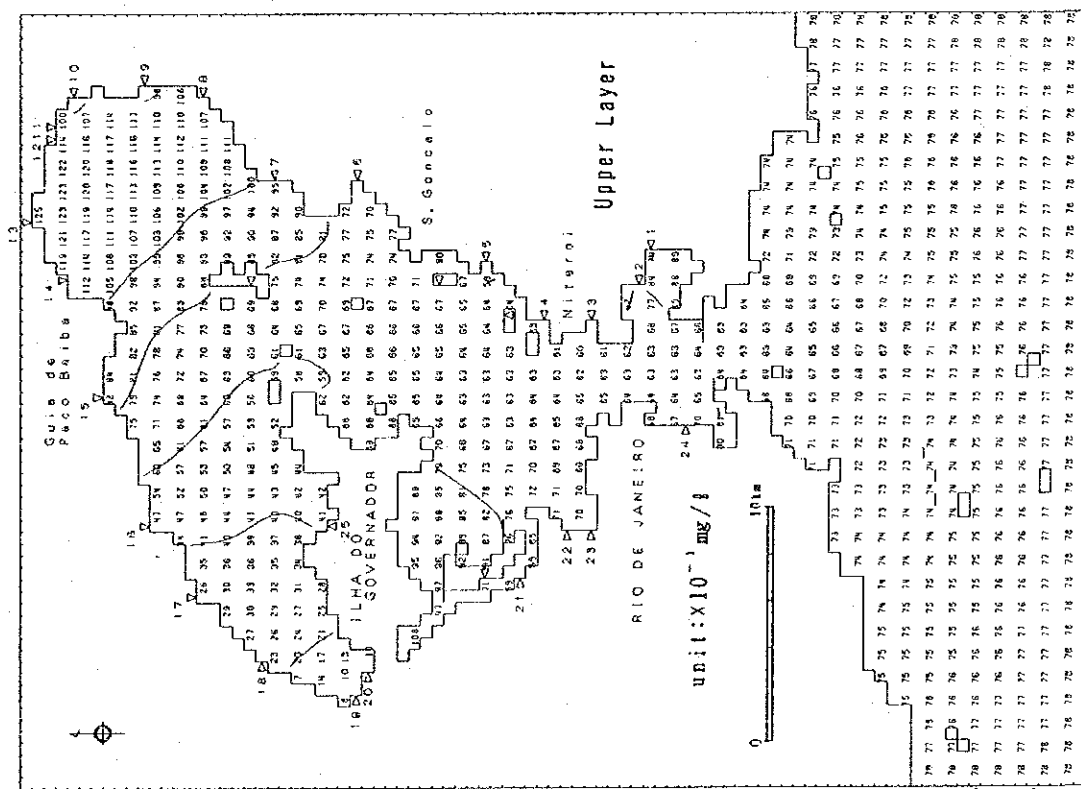
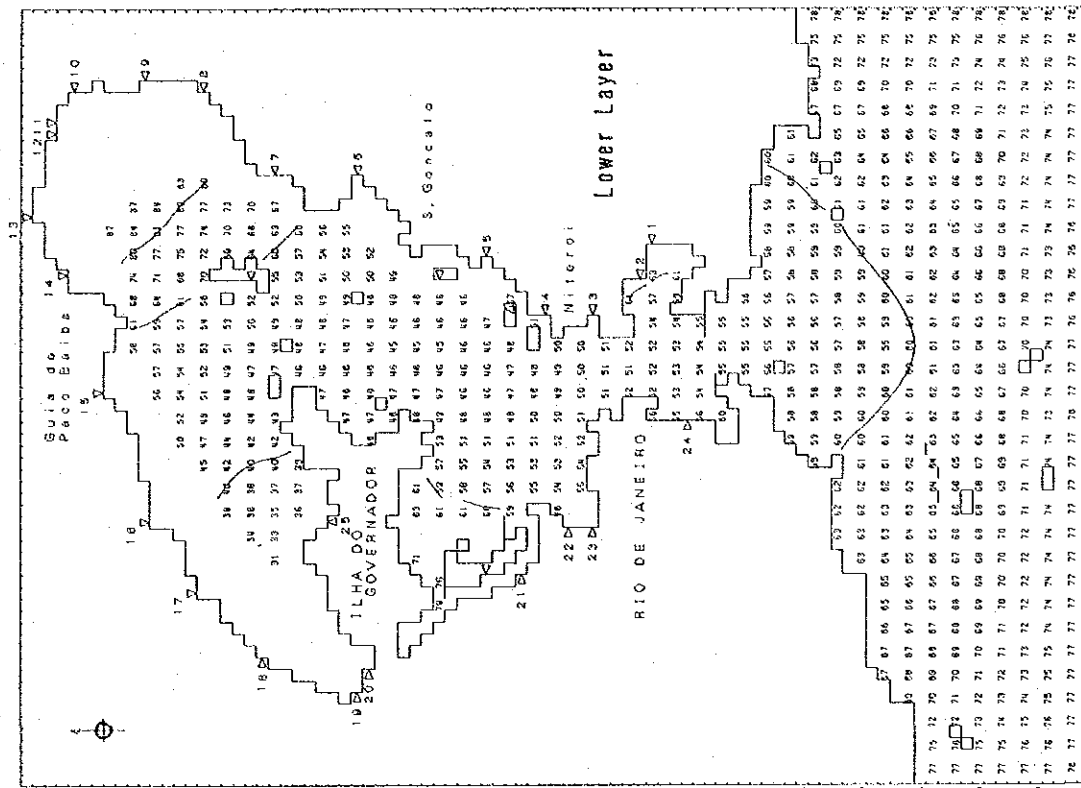


Fig. 5.3-17(2) Calculated Water Quality in Case 6-3 (DO)  
(Filling up the channel sidelong the Governador)



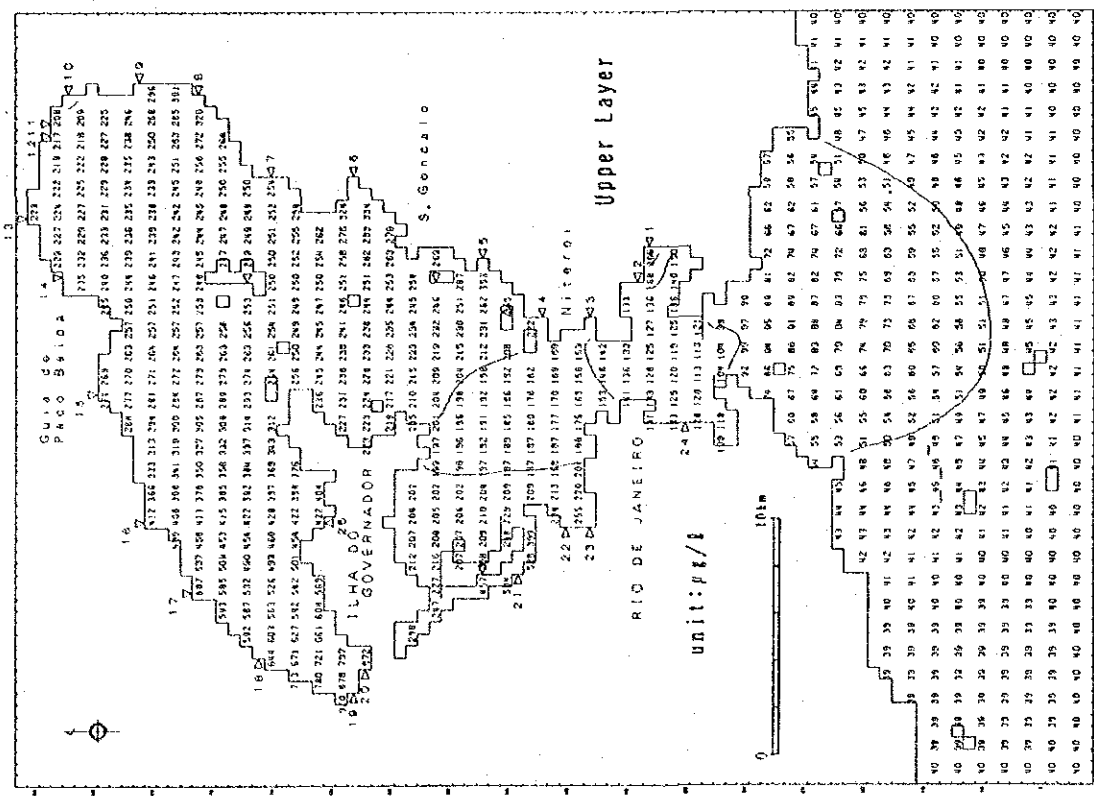
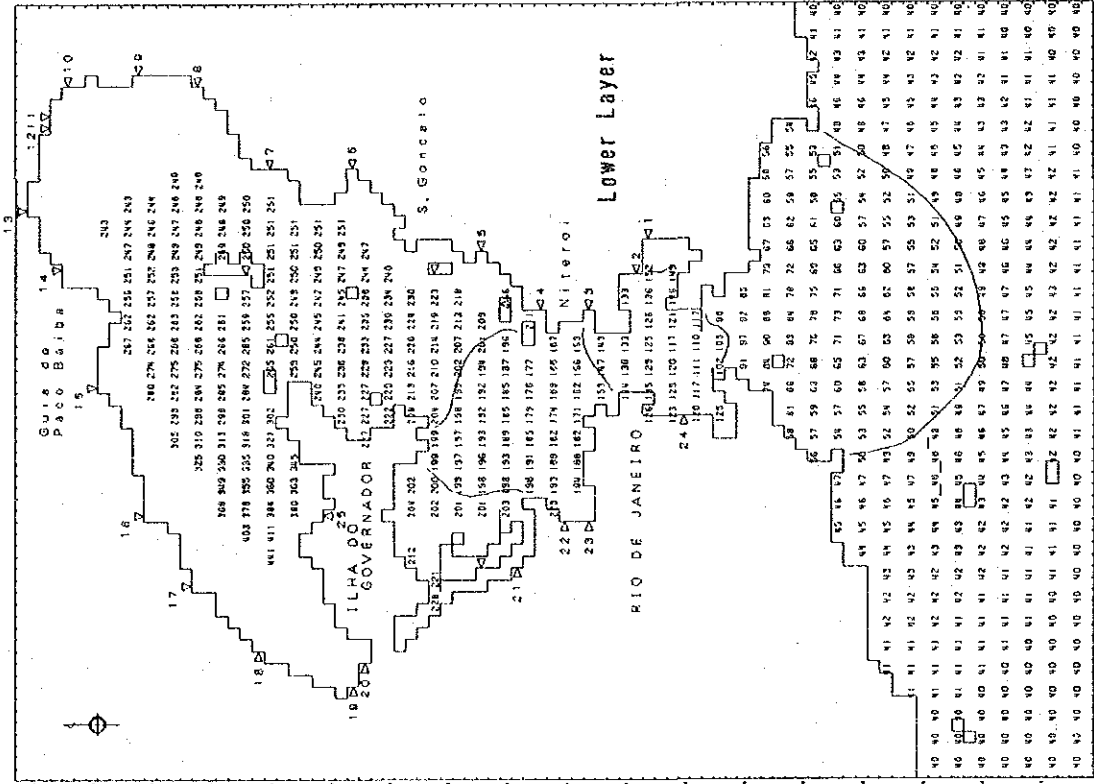


Fig.5.3-17(3) Calculated Water Quality in Case 6-3 (T-P)  
 (Filling up the channel sidelong the Governador)

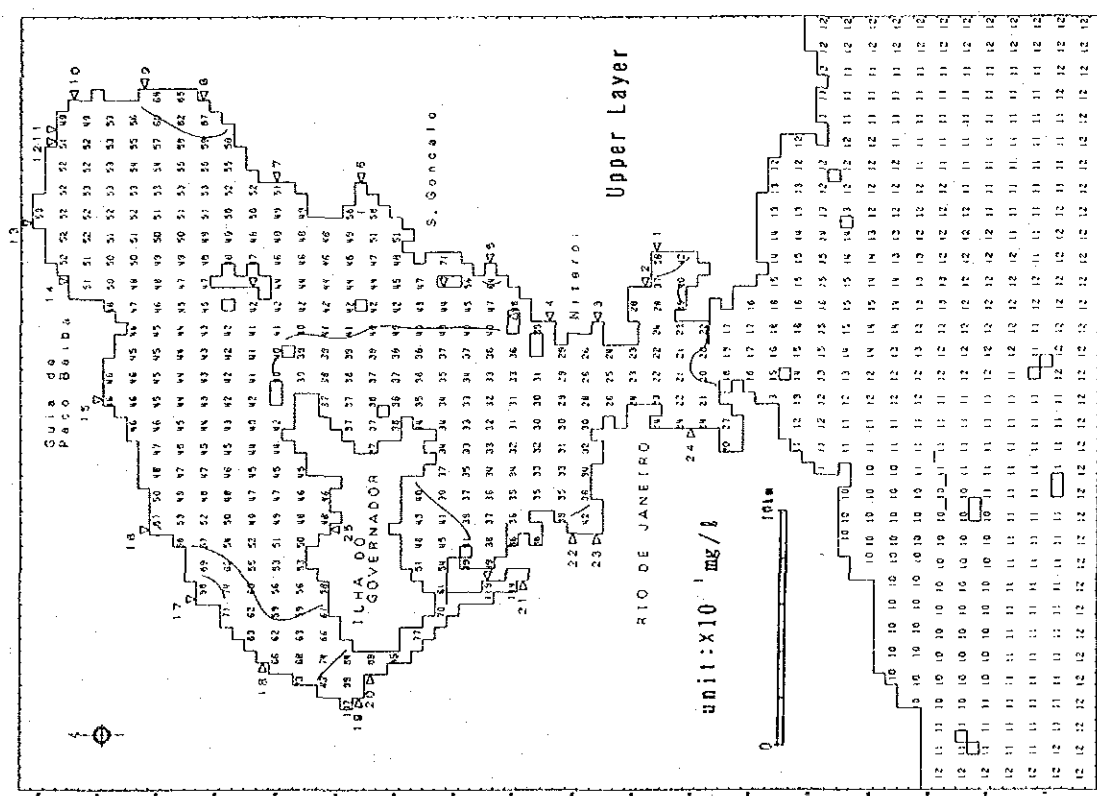
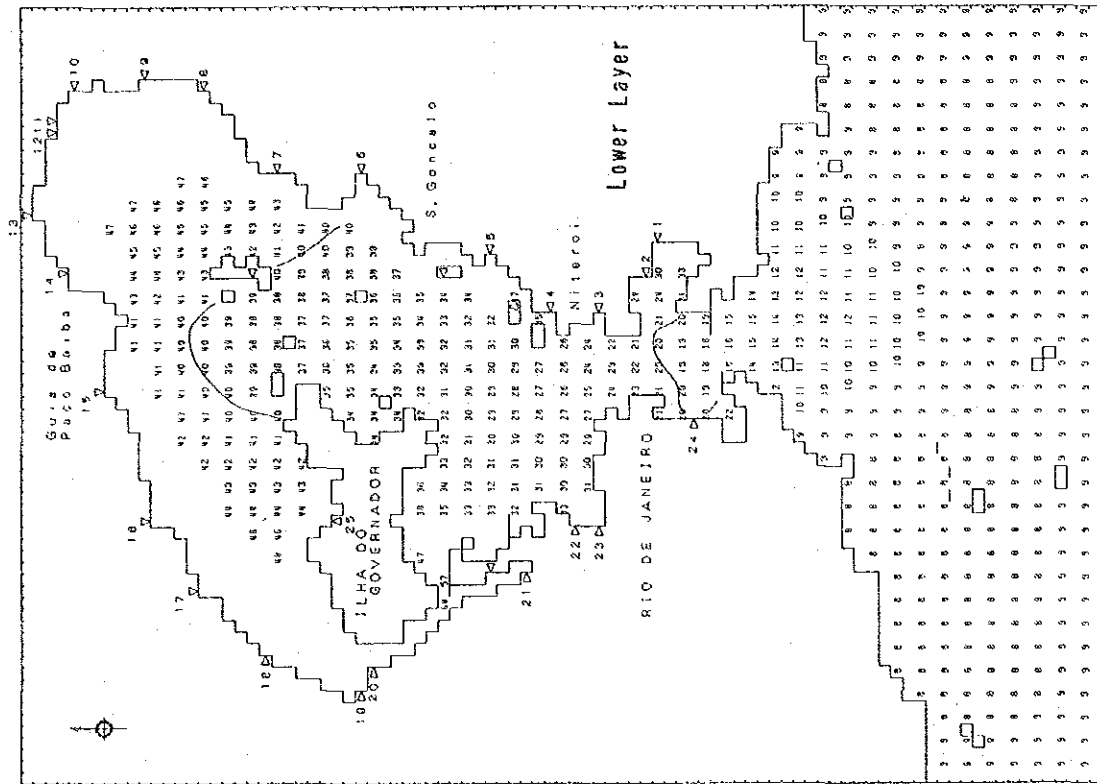


Fig. 5.3-18(1) Calculated Water Quality in Case 6-4 (BOD)  
 (Filling up the channel sidelong the Fundo)

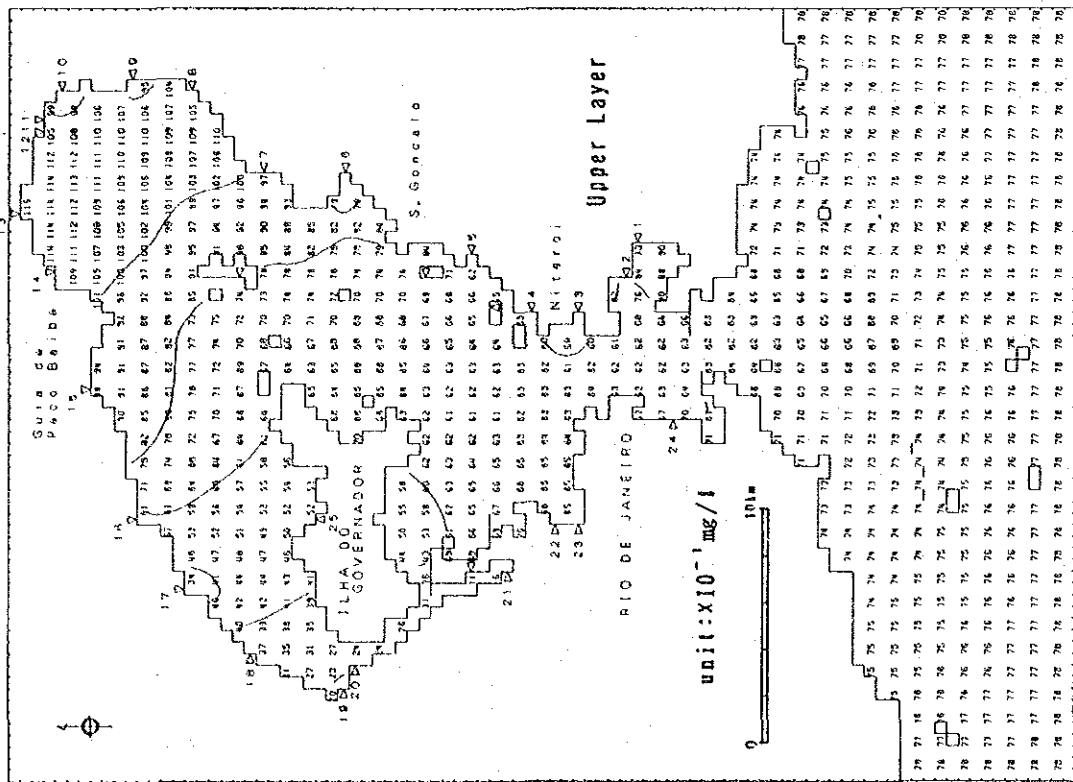
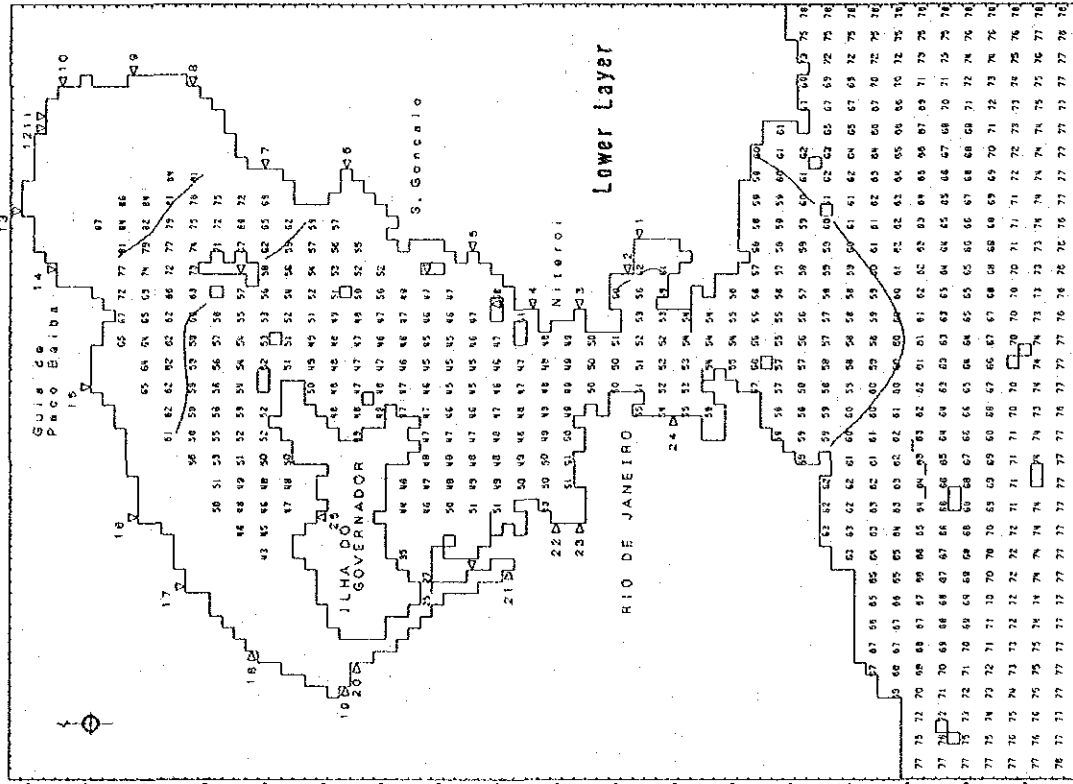


Fig. 5.3-18(2) Calculated Water Quality in Case 6-4 (DO)  
(Filling up the channel sidelong the Fundo)

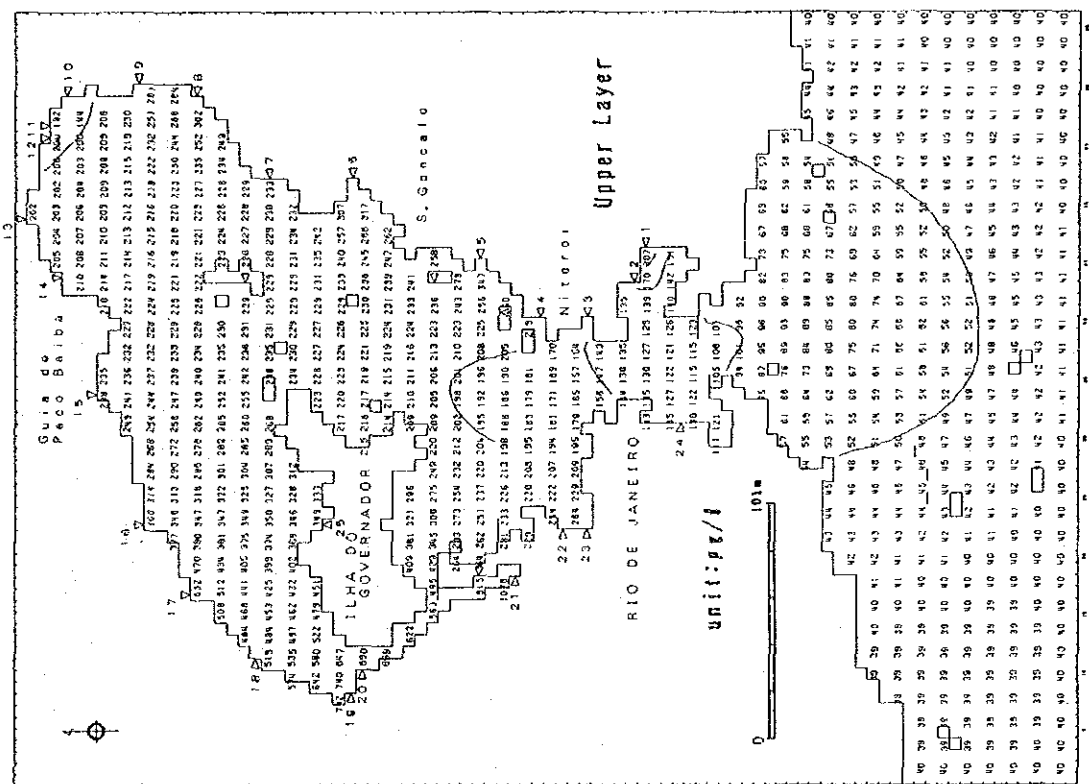
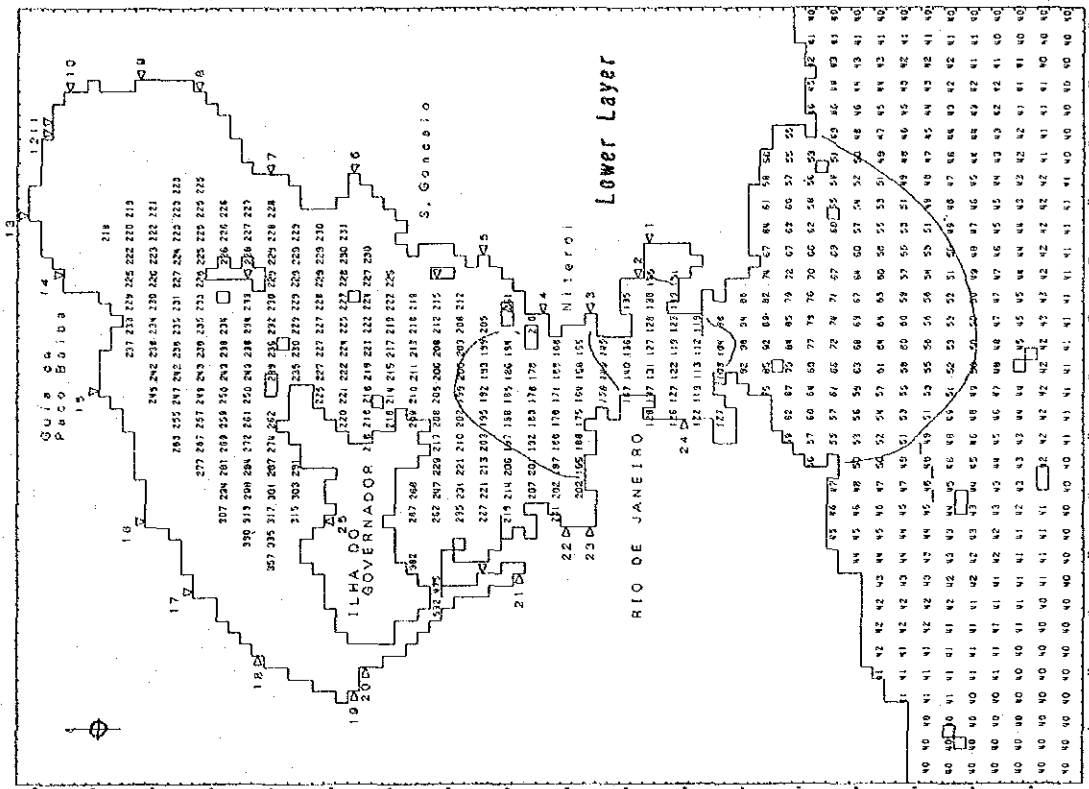


Fig.5.3-18(3) Calculated Water Quality in Case 6-4 (T-P)  
(Filling up the channel sidelong the Fundo)

## 5.4 Evaluation of Calculation Results

### 5.4.1 IDB/OECF Program on the Year of 2000

The inflowing loads of BOD, O-P and  $PO_4$ -P and river discharges from each basin are summarized in Fig.5.4-1 for each case.

Fig.5.4-2 and Fig.5.4-3 show the change of the mean water quality in each water area for BOD, T-P and DO on the present, the year of 2000 without measures and IDB/OECF program in 2000 (Case 1-1).

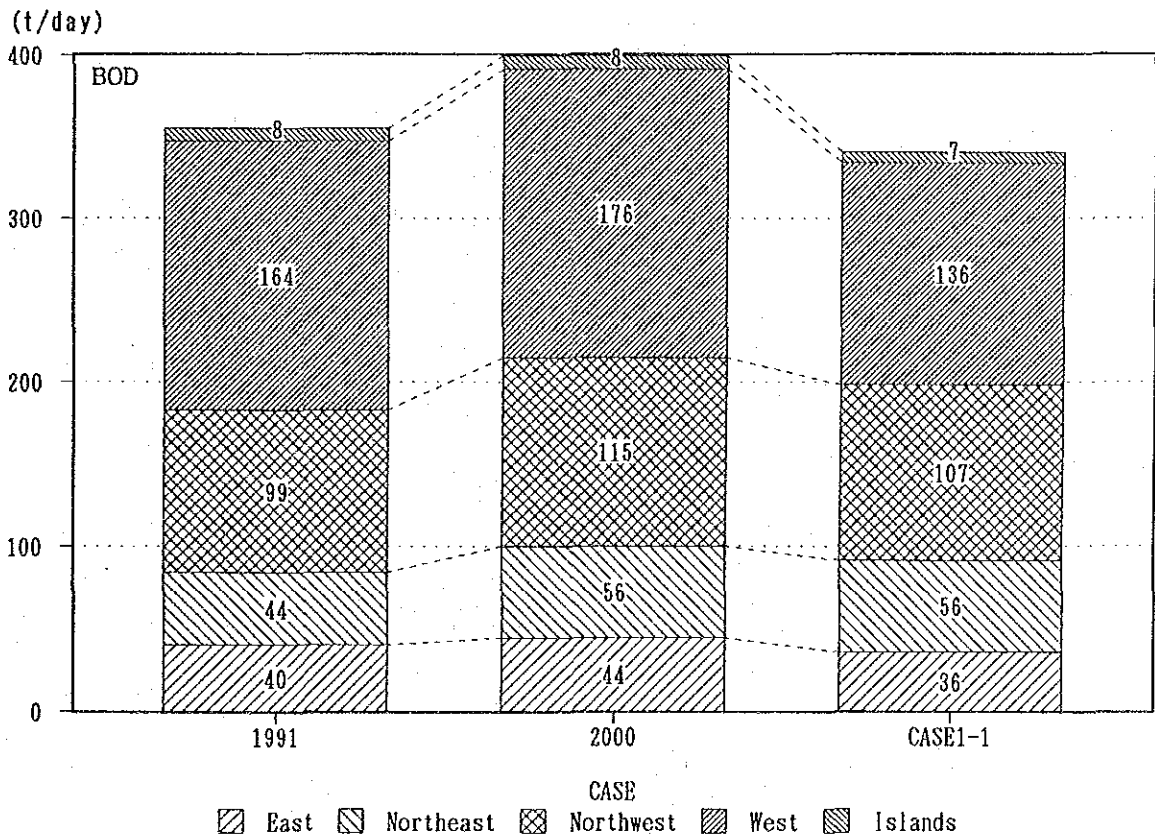
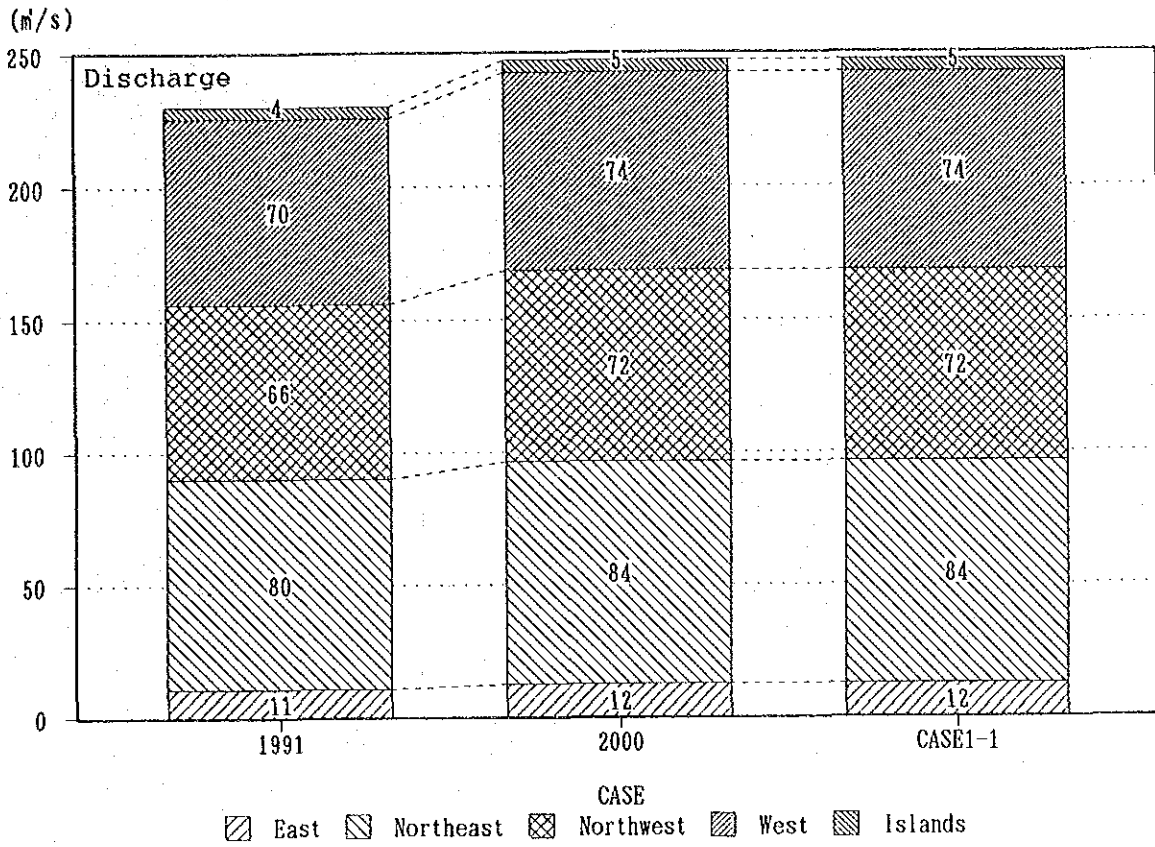


Fig. 5.4-1(1) External Load from Sub-Basin Groups

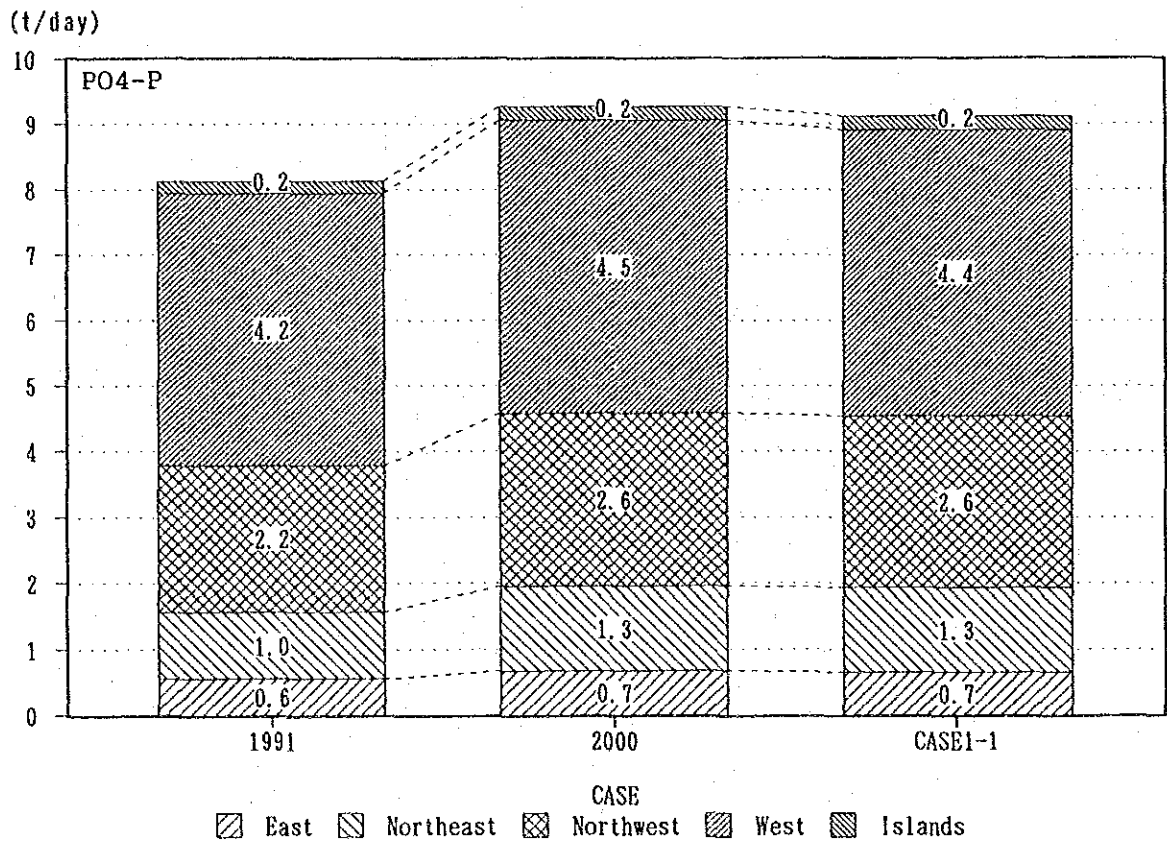
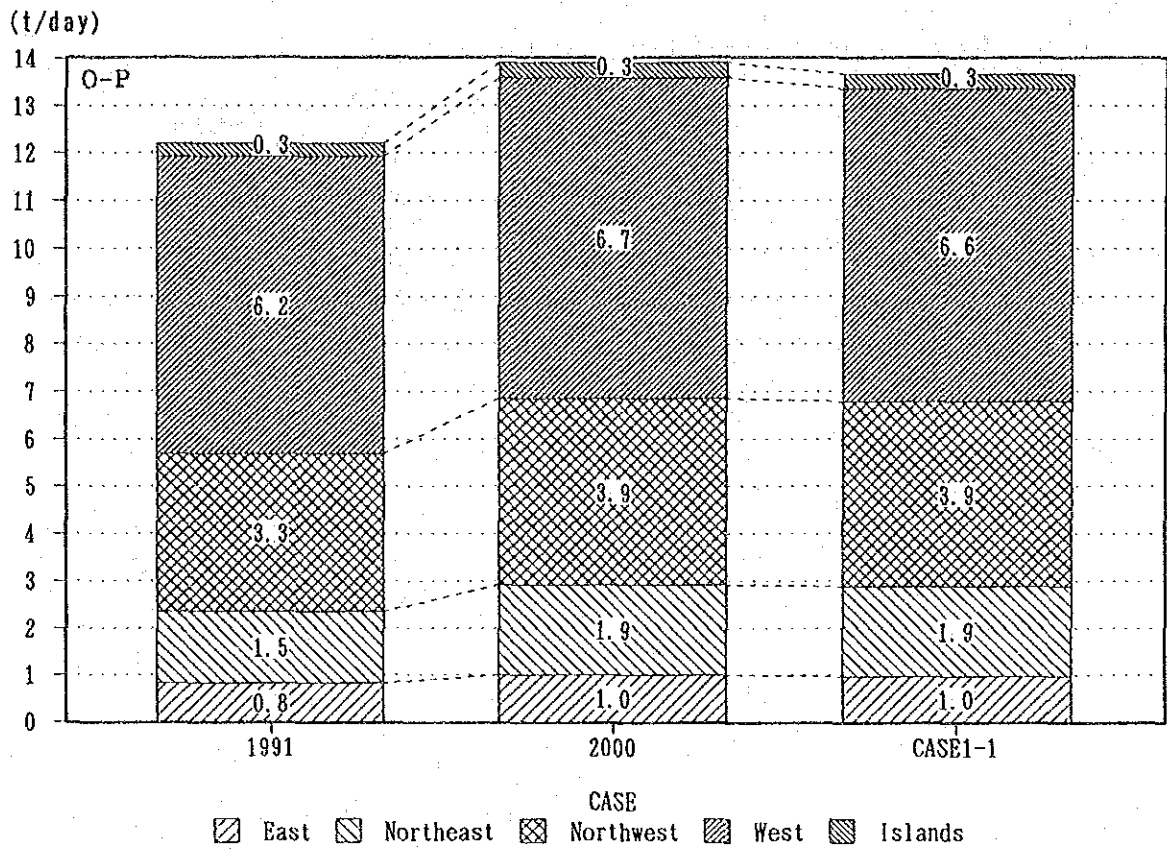


Fig. 5.4-1(2) External Load from Sub-Basin Groups

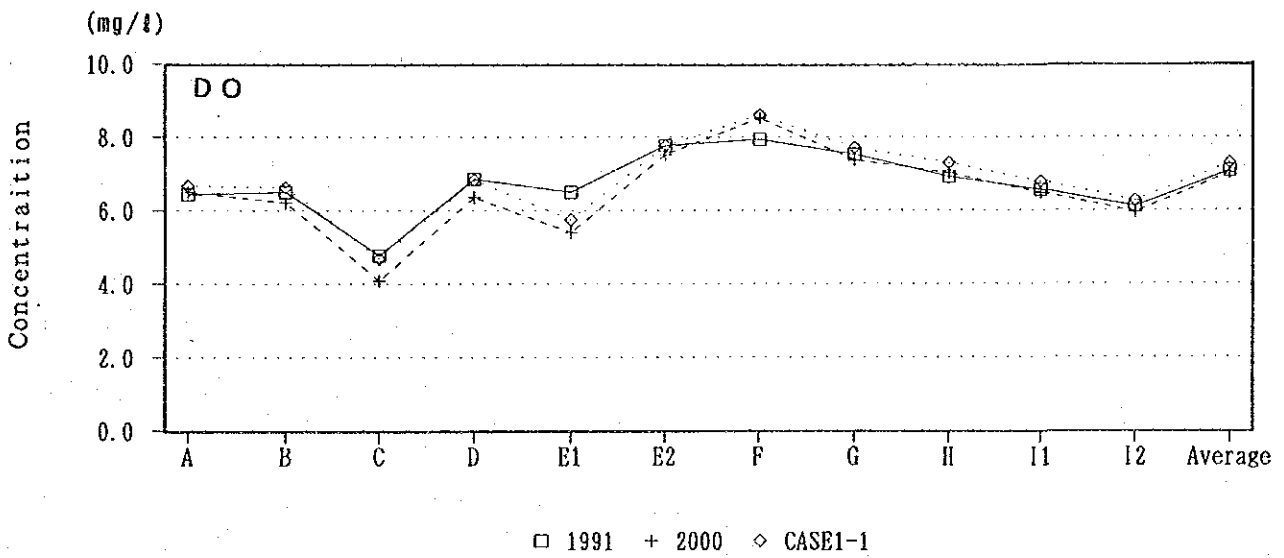
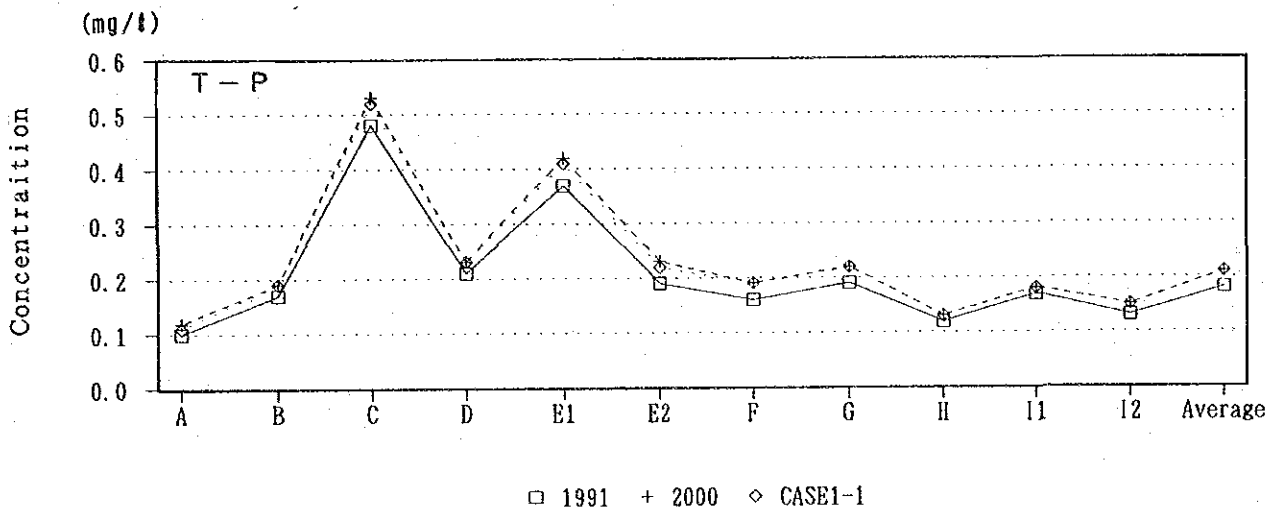
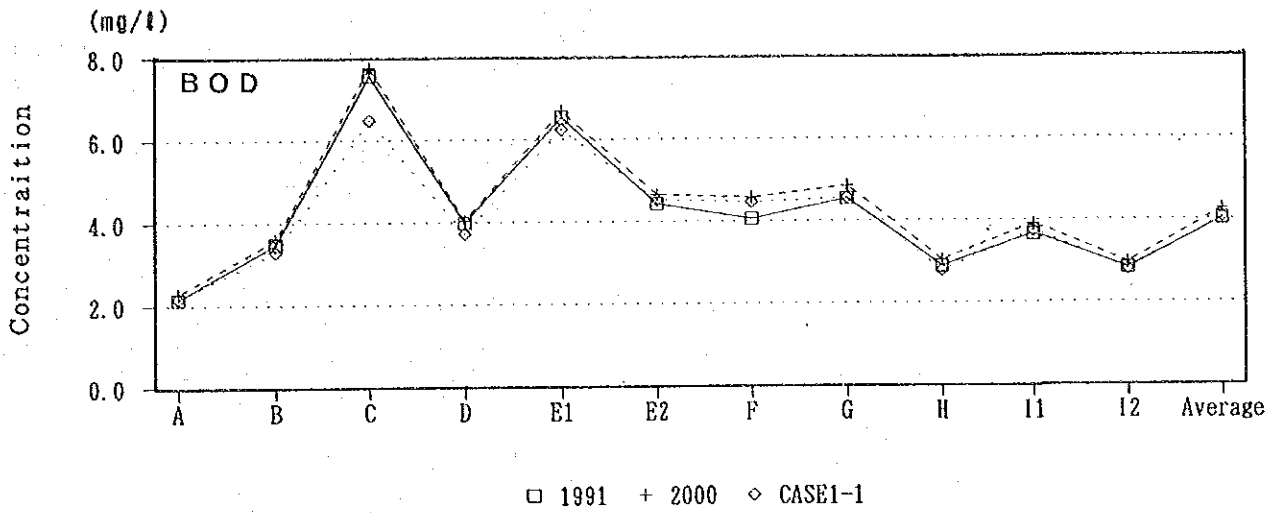


Fig. 5.4-2 Water Quality Change in each block



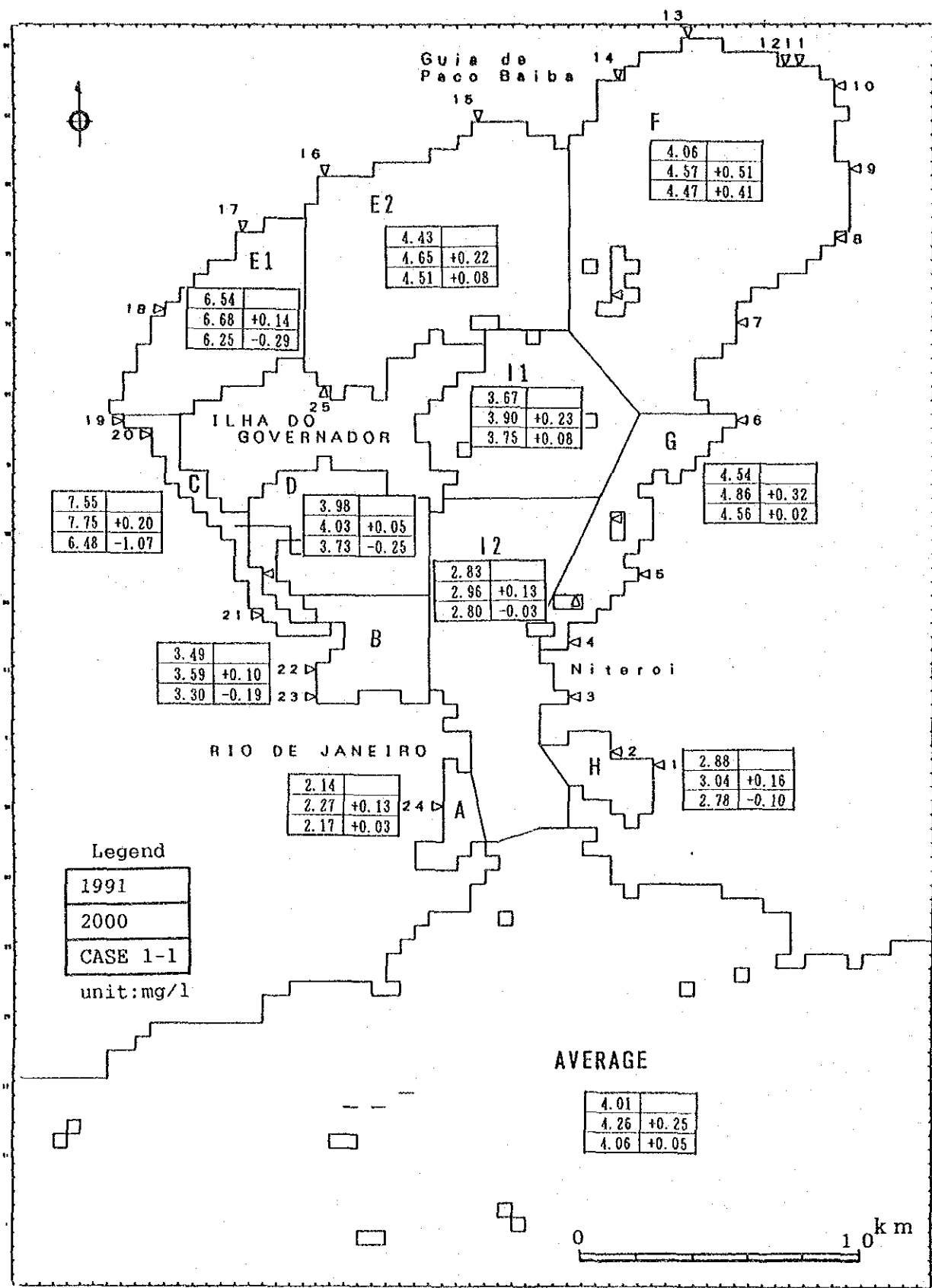


Fig. 5.4-3(1) BOD Concentration and Variation in each Block

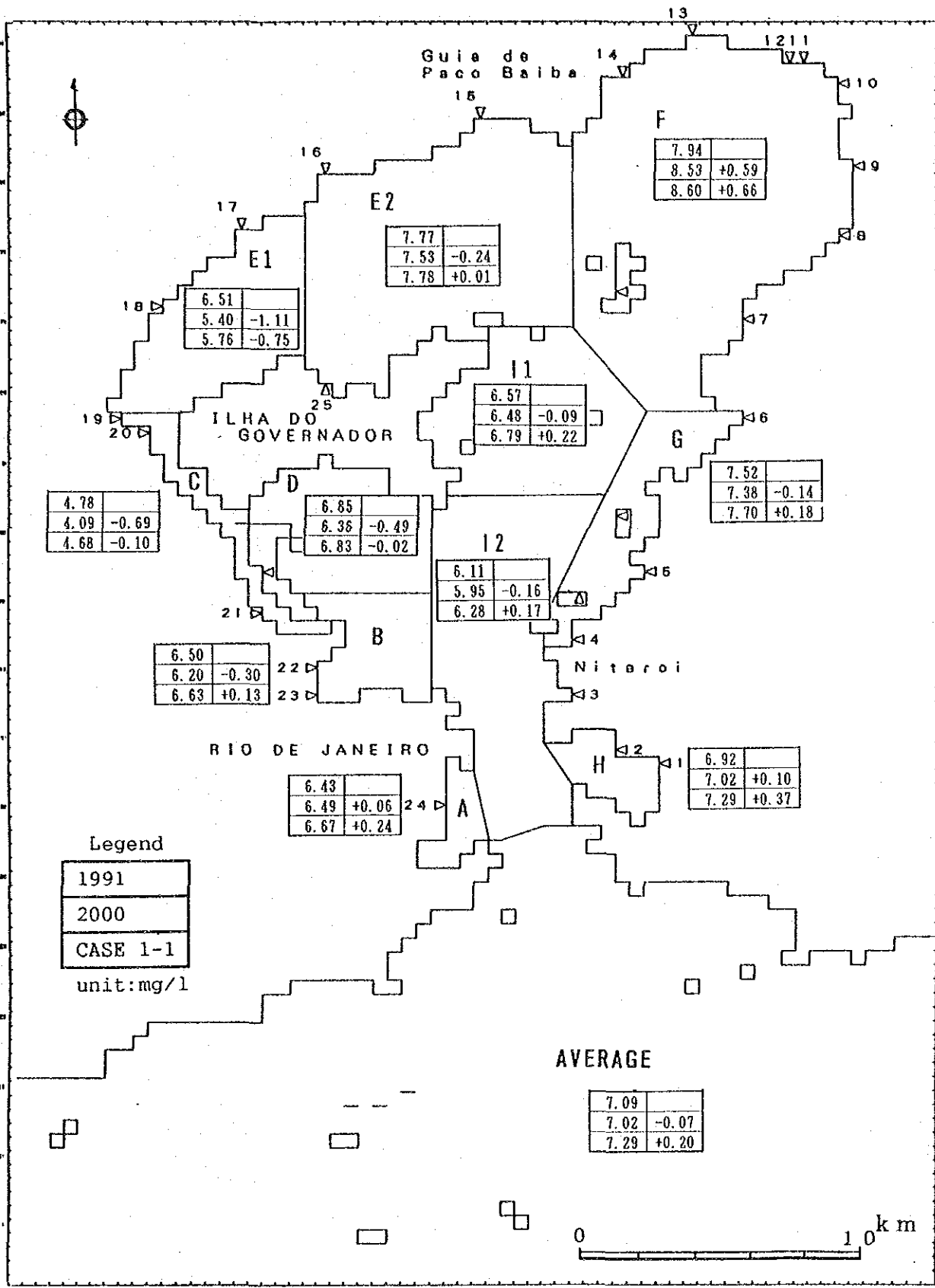


Fig. 5.4-3(2) DO Concentration and Variation in each Block

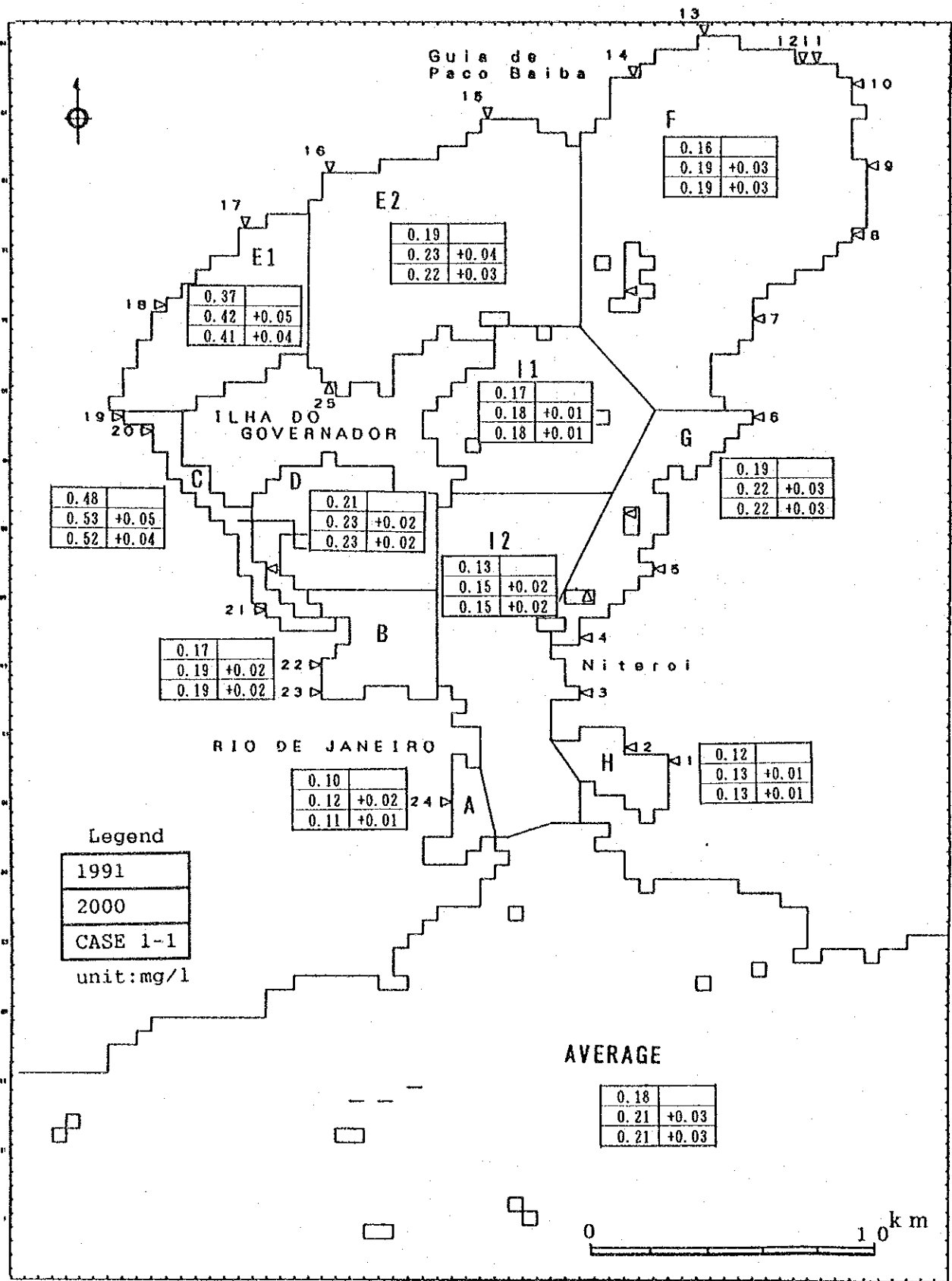


Fig. 5.4-3(3) T-P Concentration and Variation in each Block

#### 5.4.2 IDB/OECF Program on the Year of 2010

The inflowing loads of BOD, O-P and  $PO_4$ -P and river discharges from each basin are summarized in Fig.5.4-4 for each case.

Fig.5.4-5 and Fig.5.4-6 show the change of the mean water quality in each water area for BOD, T-P and DO on the present, the year of 2010 without measures (scenario 2), IDB/OECF program in 2010 (Case 1-2) and Case 2.

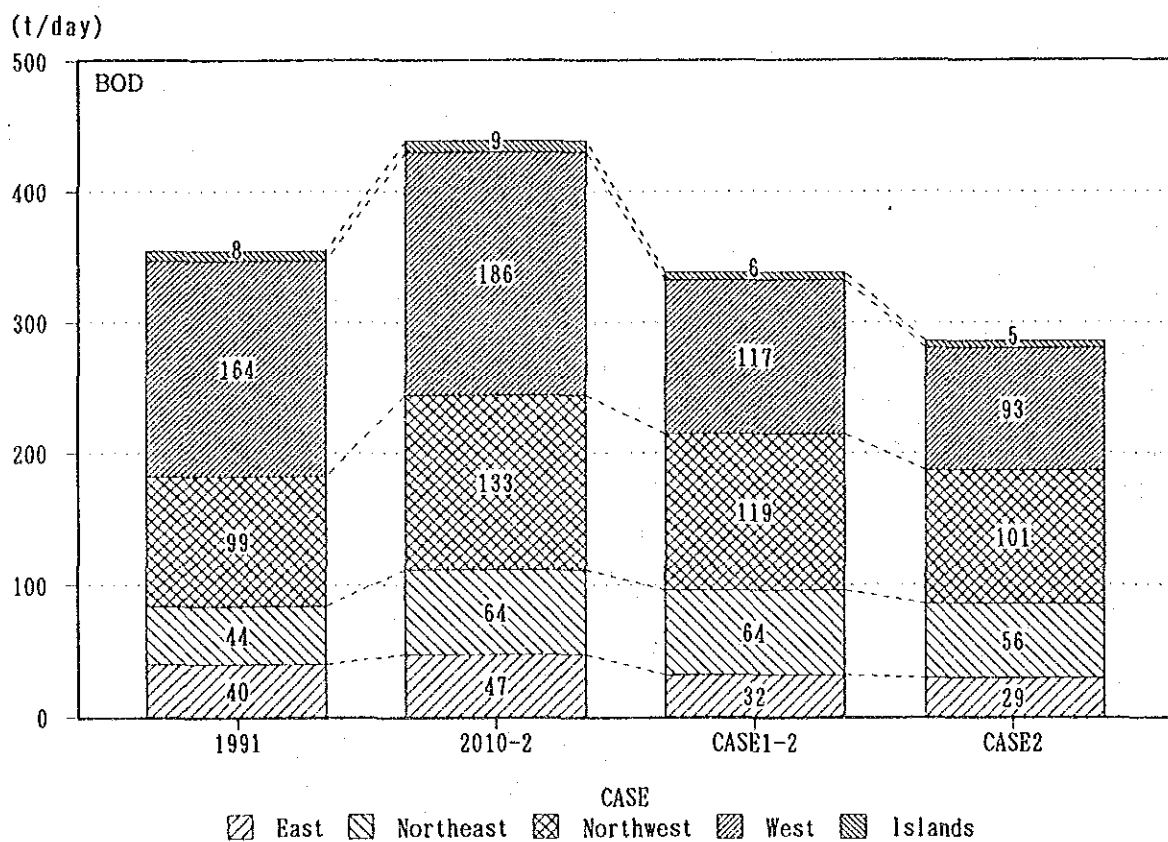
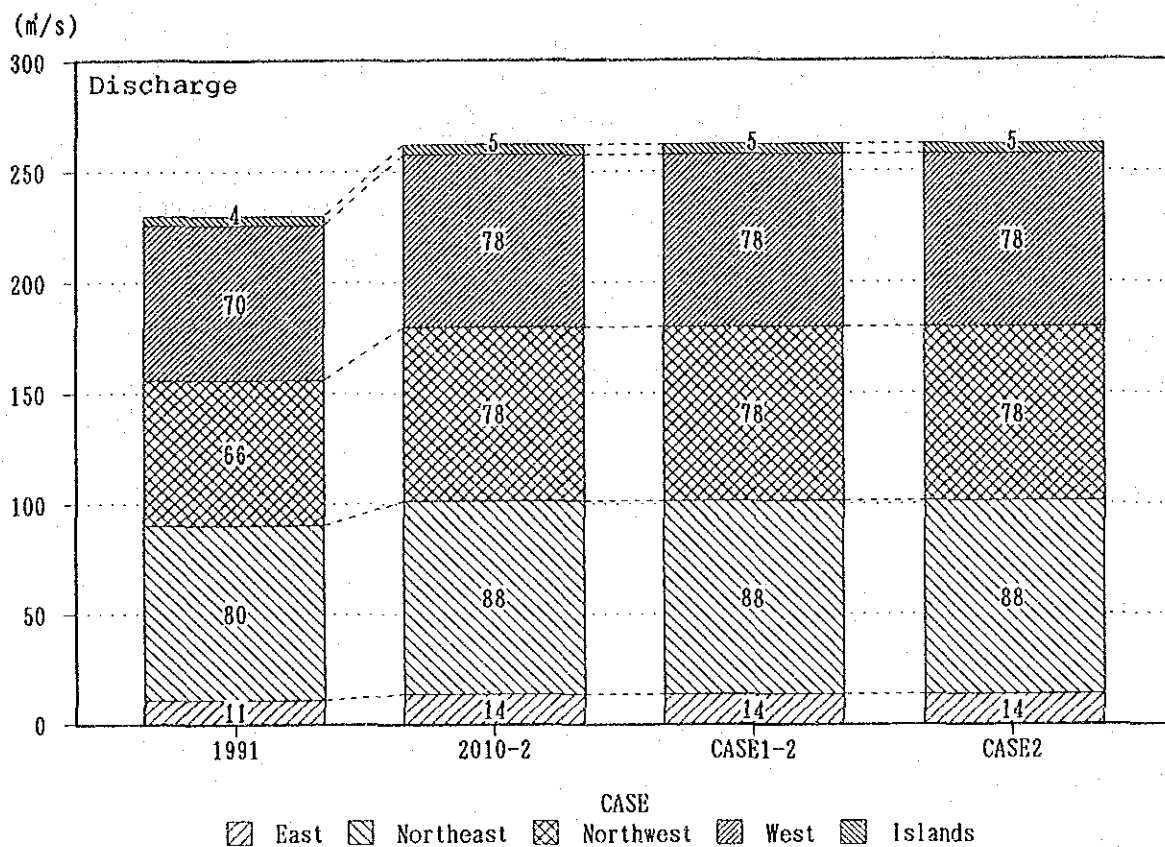
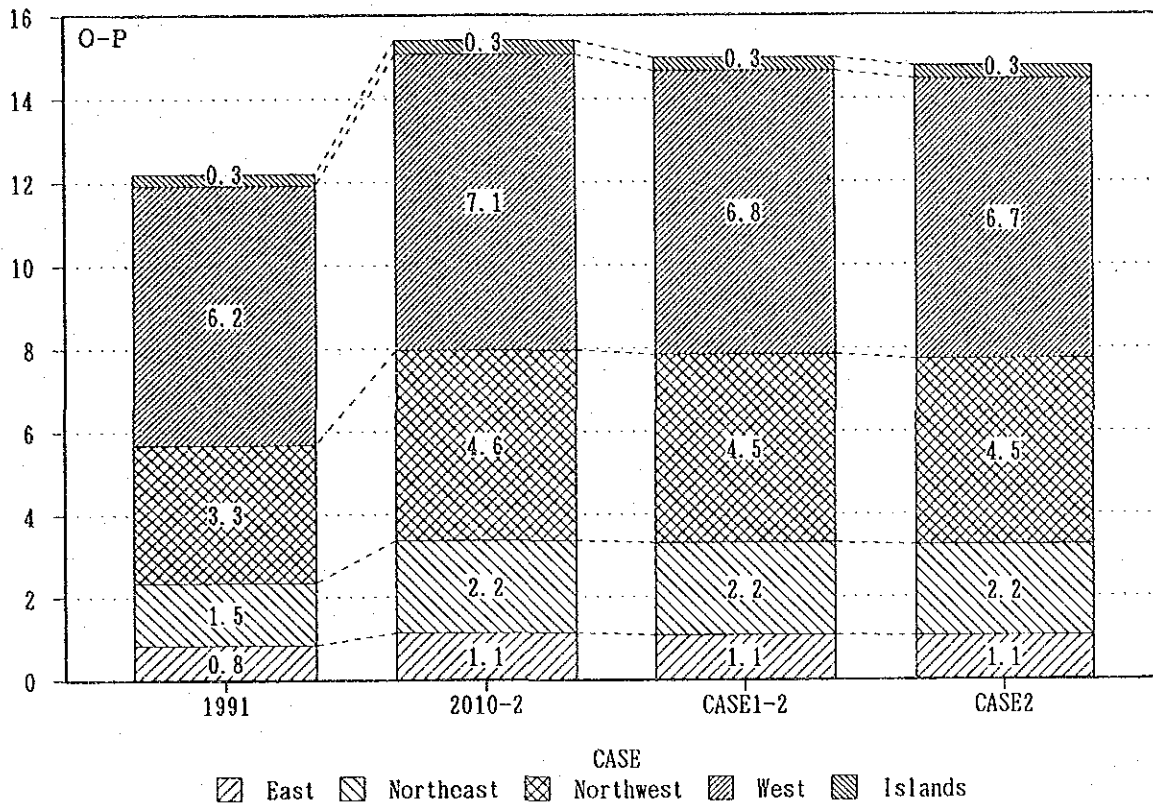


Fig. 5.4-4(1) External Load from Sub-Basin Groups 5-88

(t/day)



(t/day)

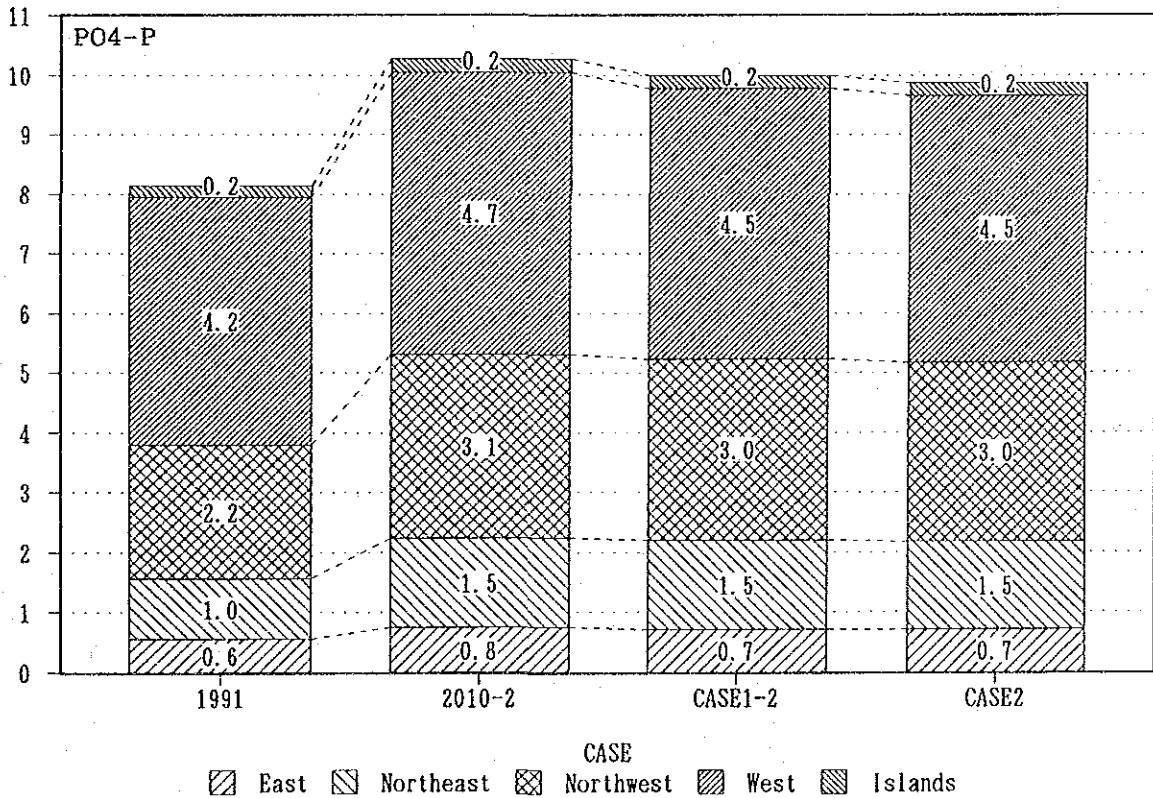


Fig. 5.4-4(2) External Load from Sub-Basin Groups

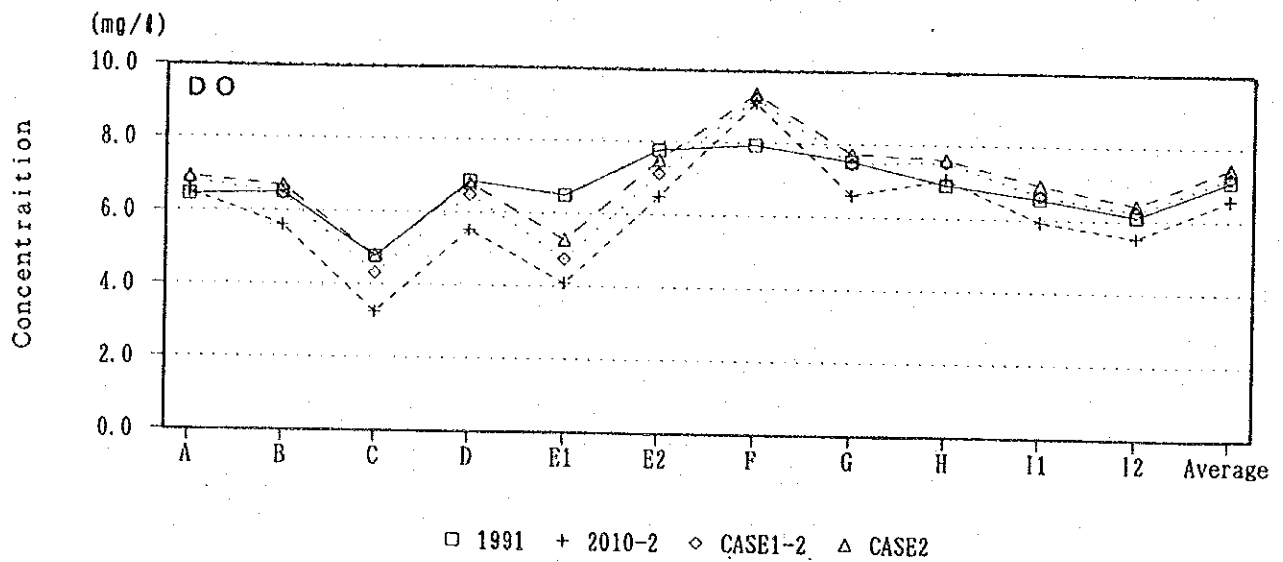
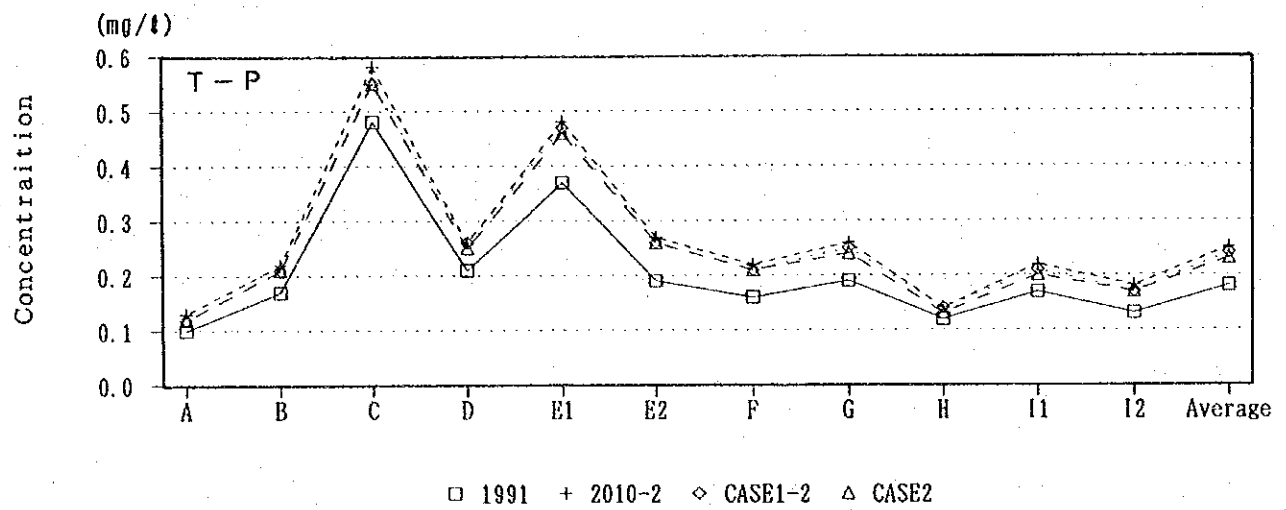
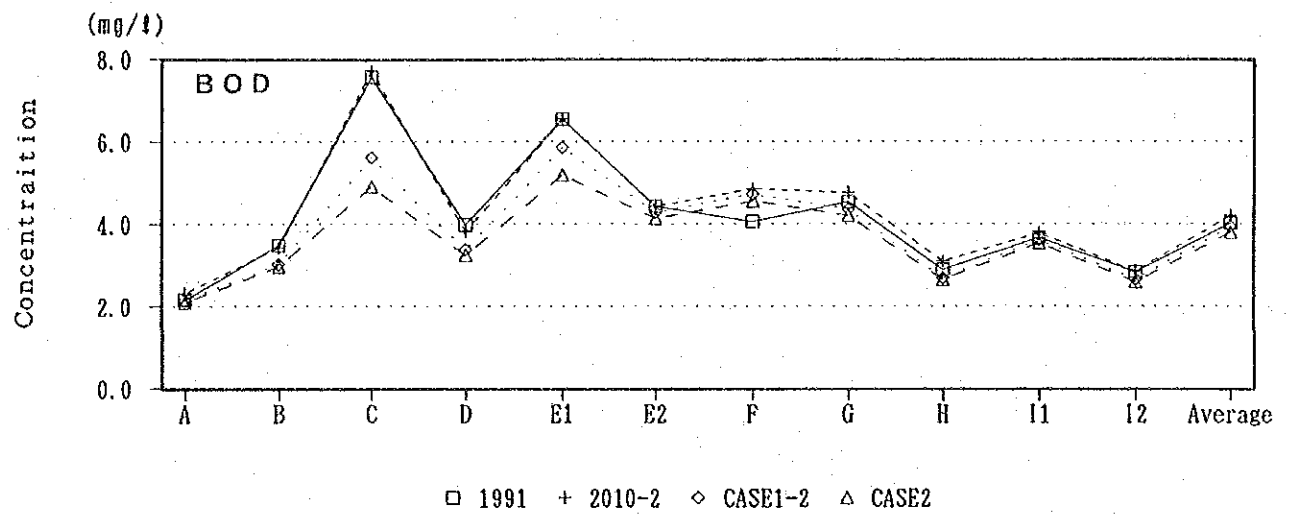


Fig. 5.4-5 Water Quality Change in each block

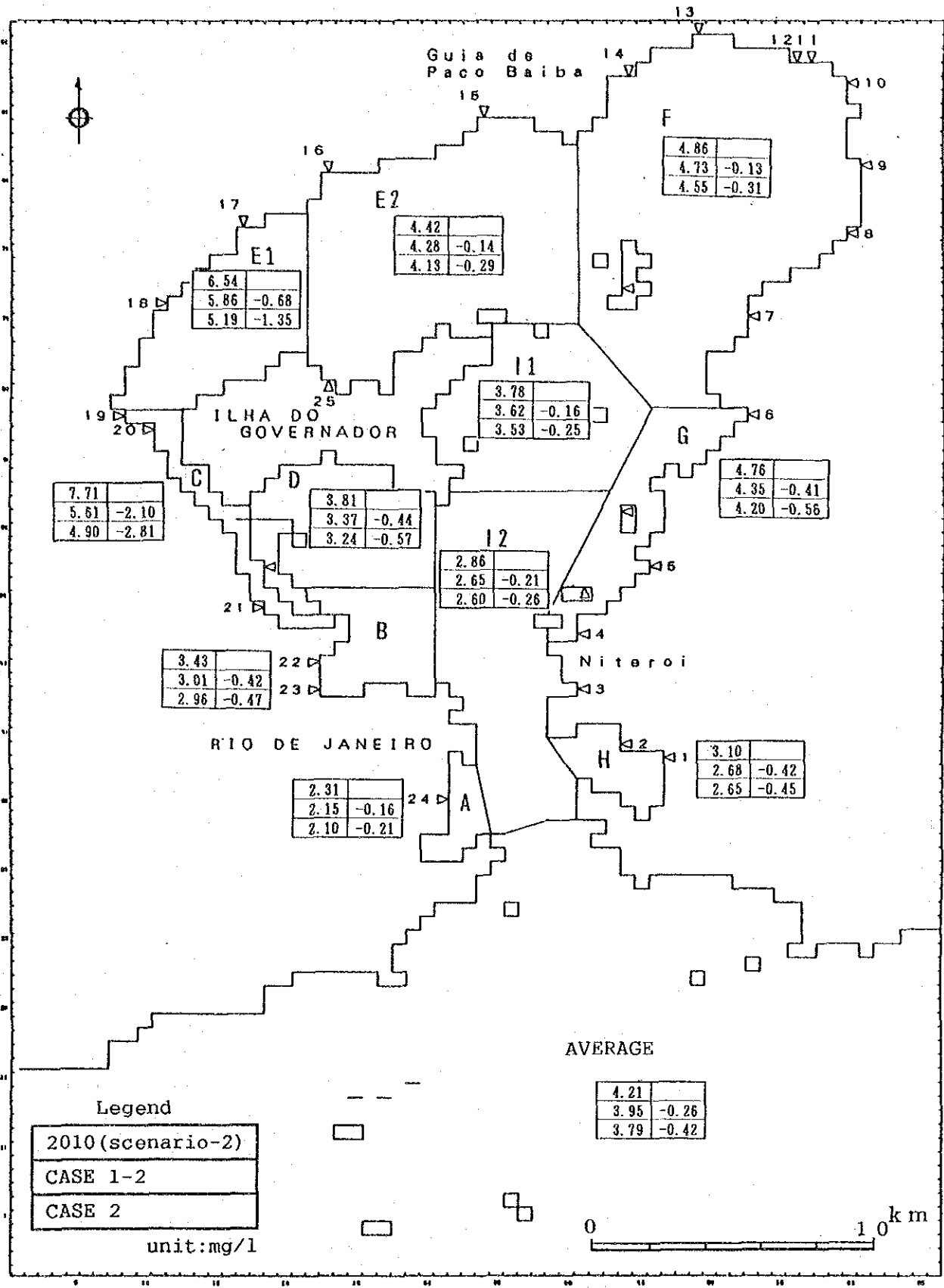


Fig. 5.4-6(1) BOD Concentration and Variation in each Block



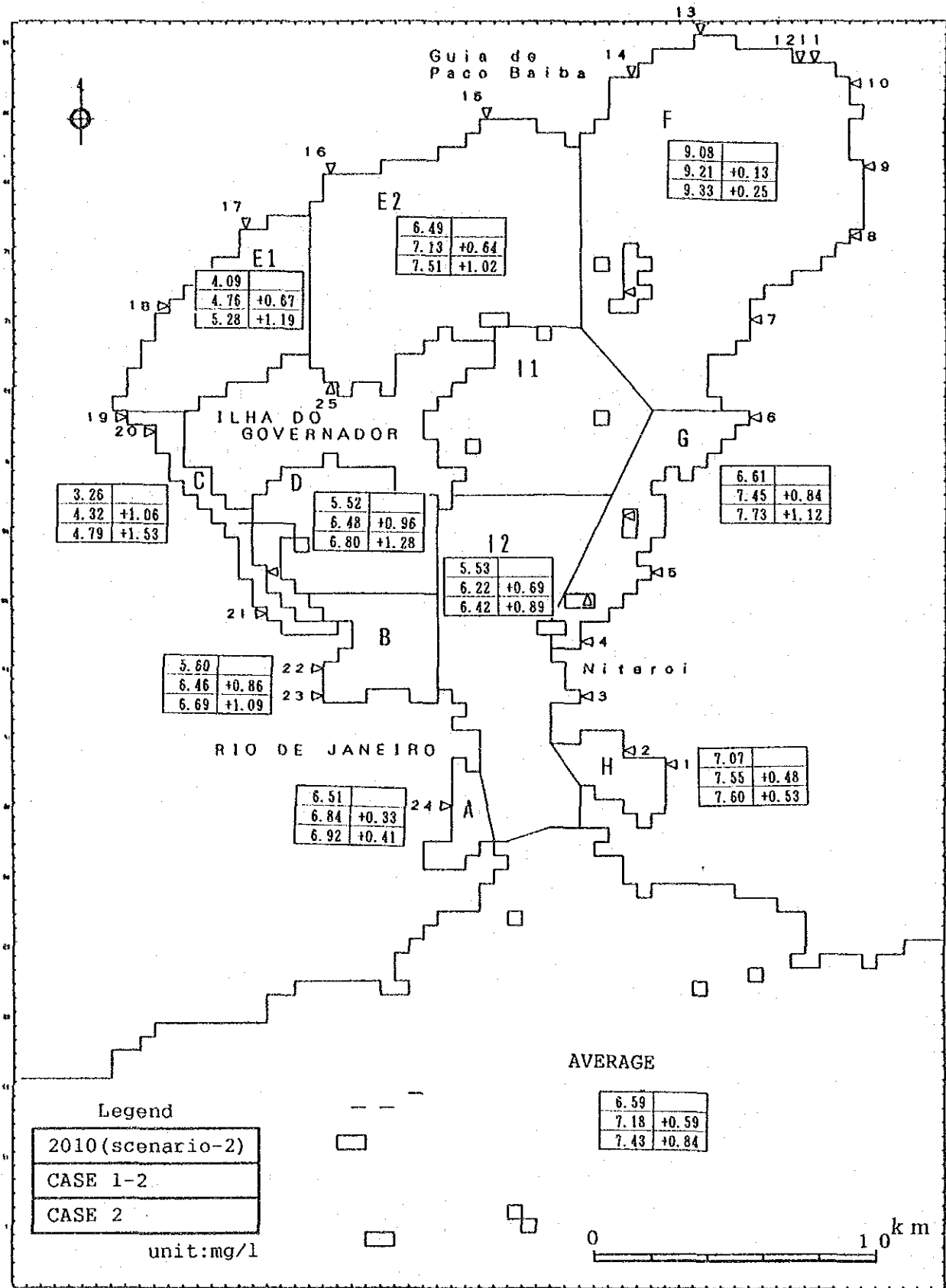


Fig. 5.4-6(2) DO Concentration and Variation in each Block

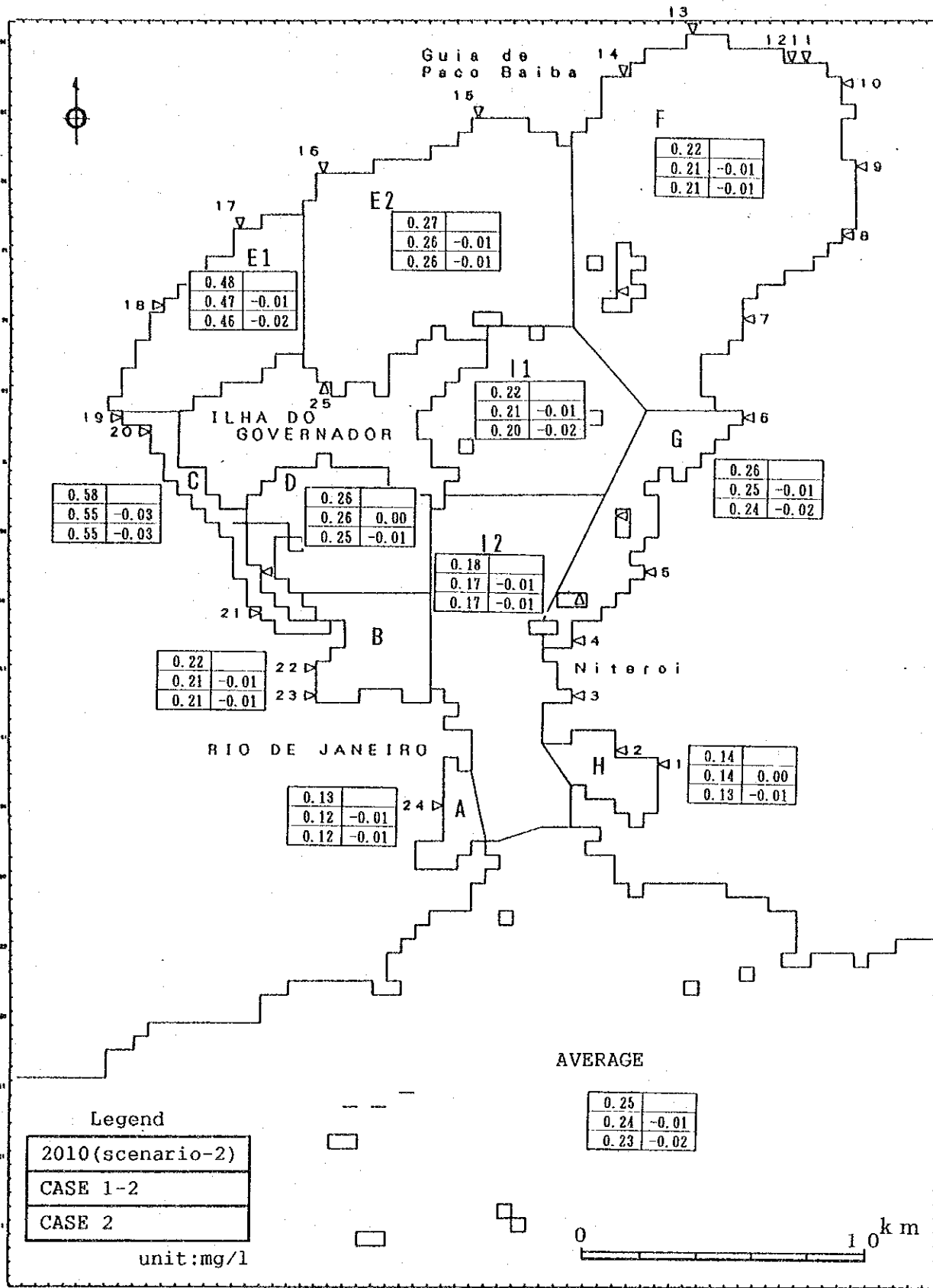


Fig. 5. 4-6(3) T-P Concentration and Variation in each Block

### 5.4.3 Ocean Outfall System

The inflowing loads of BOD, O-P and  $PO_4$ -P and river discharges from each basin are summarized in Fig.5.4-7 for each case.

Fig.5.4-8 and Fig.5.4-9 show the change of the mean water quality in each water area for BOD, T-P and DO on the year of 2010 without measures (scenario 2) and Case 3-1, Case 3-2, Case 3-3 and Case 3-4.

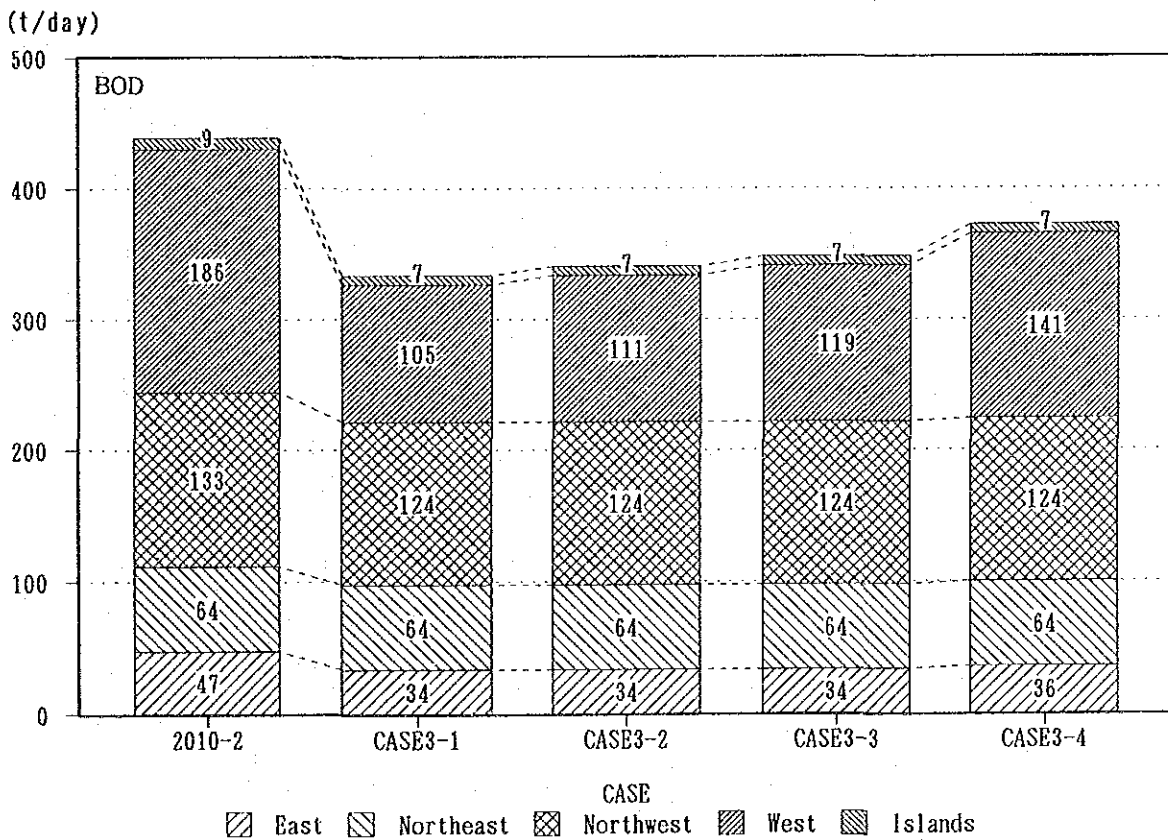
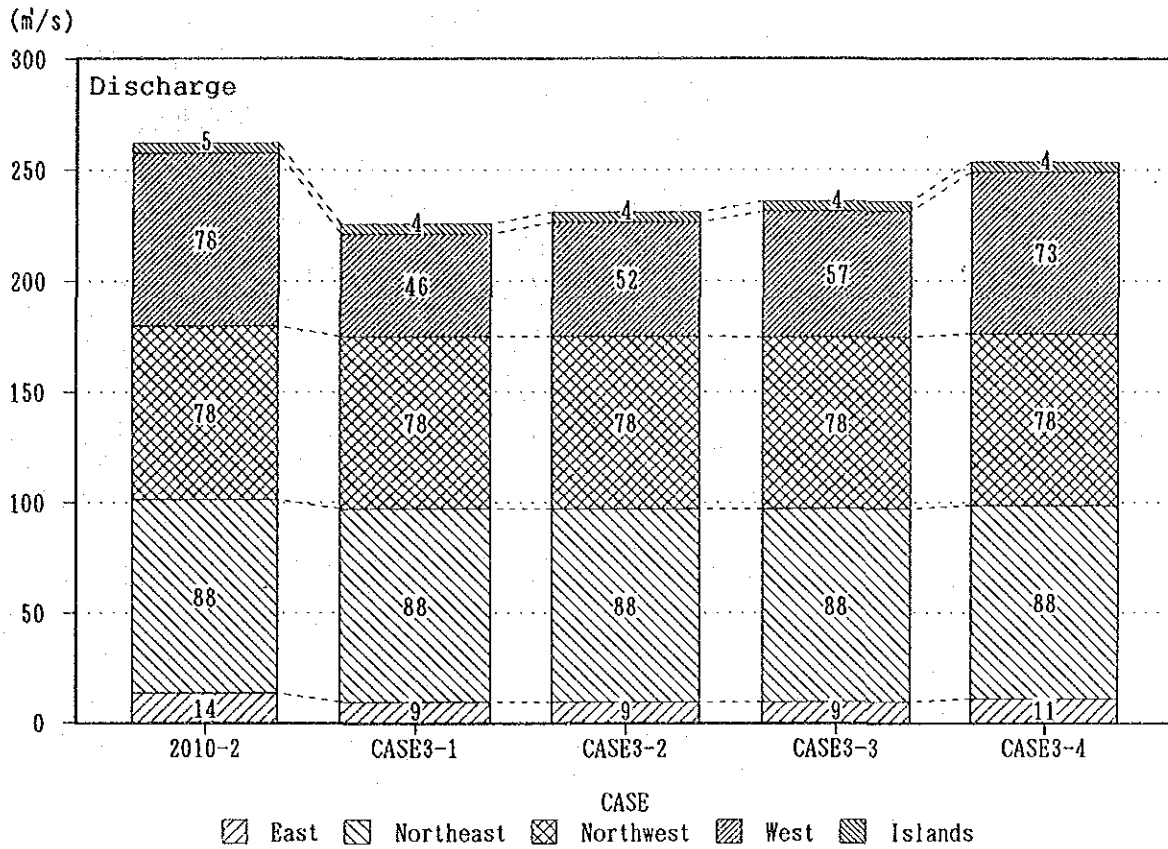


Fig. 5.4-7(1) External Load from Sub-Basin Groups

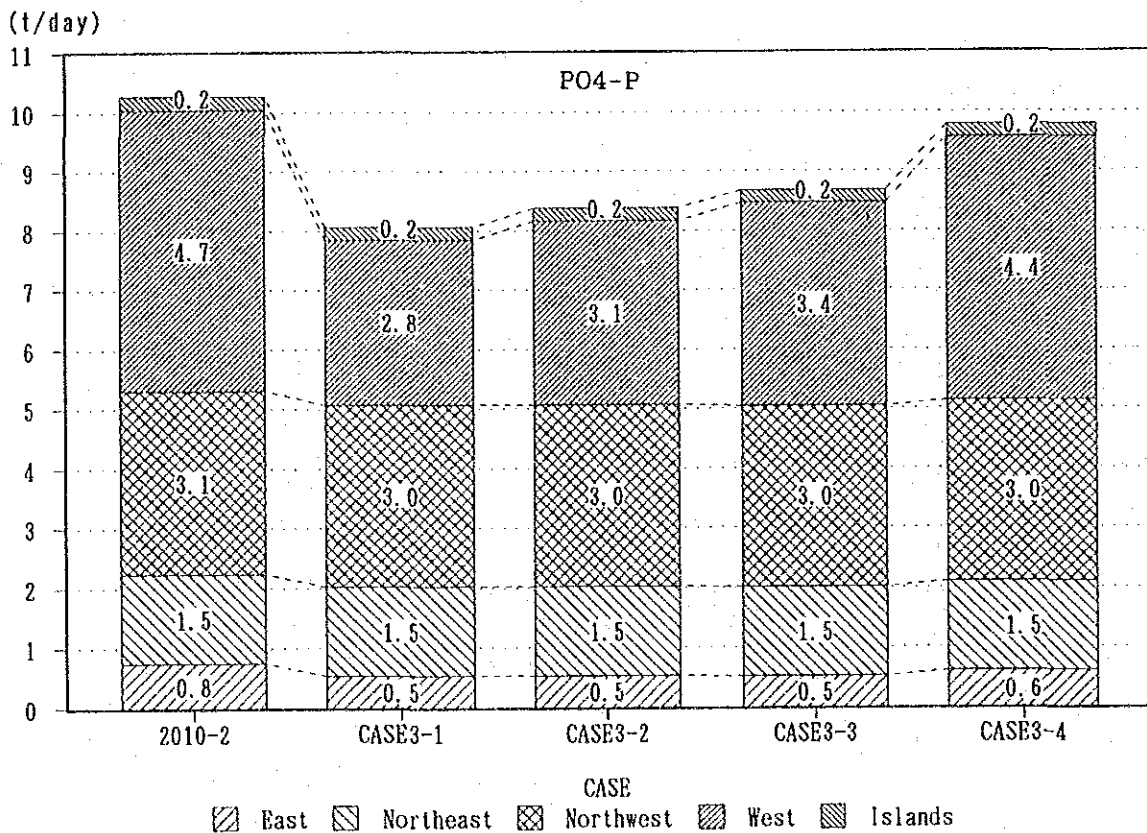
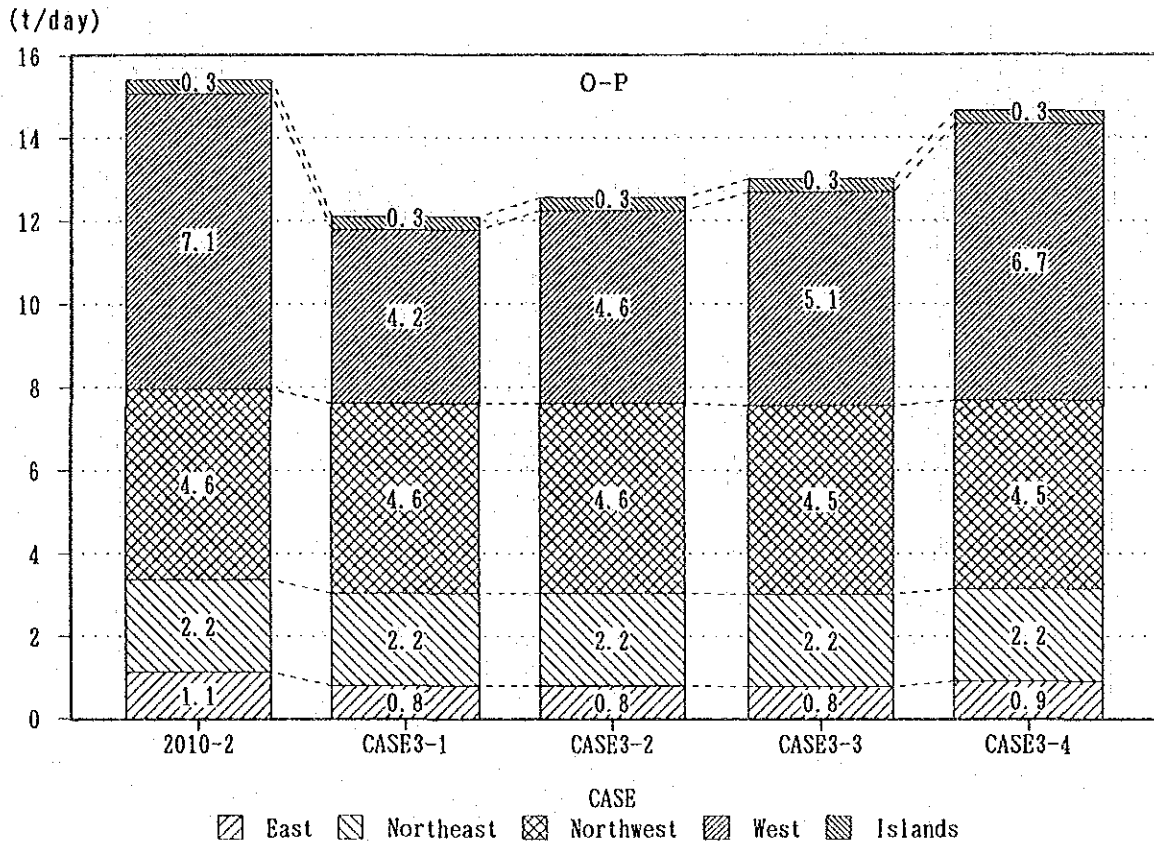


Fig. 5.4-7(2) External Load from Sub-Basin Groups

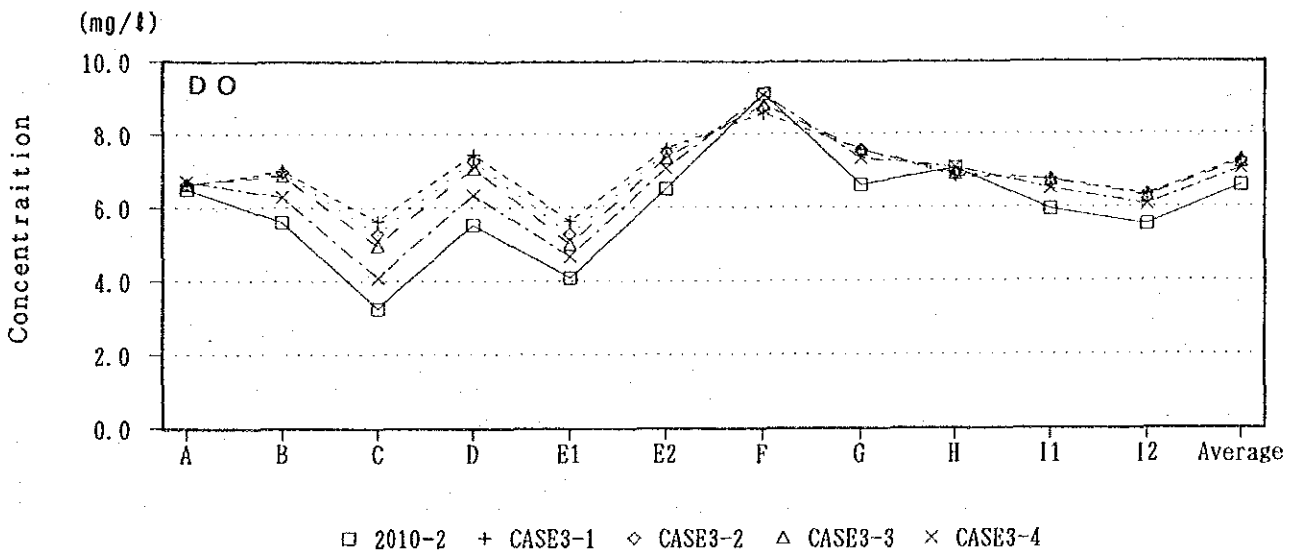
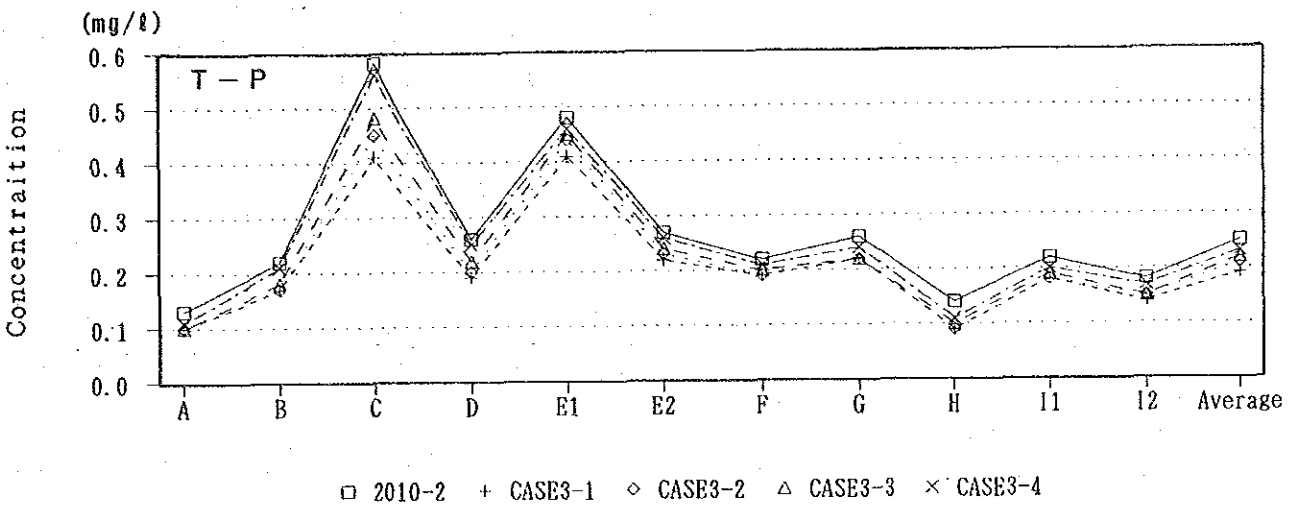
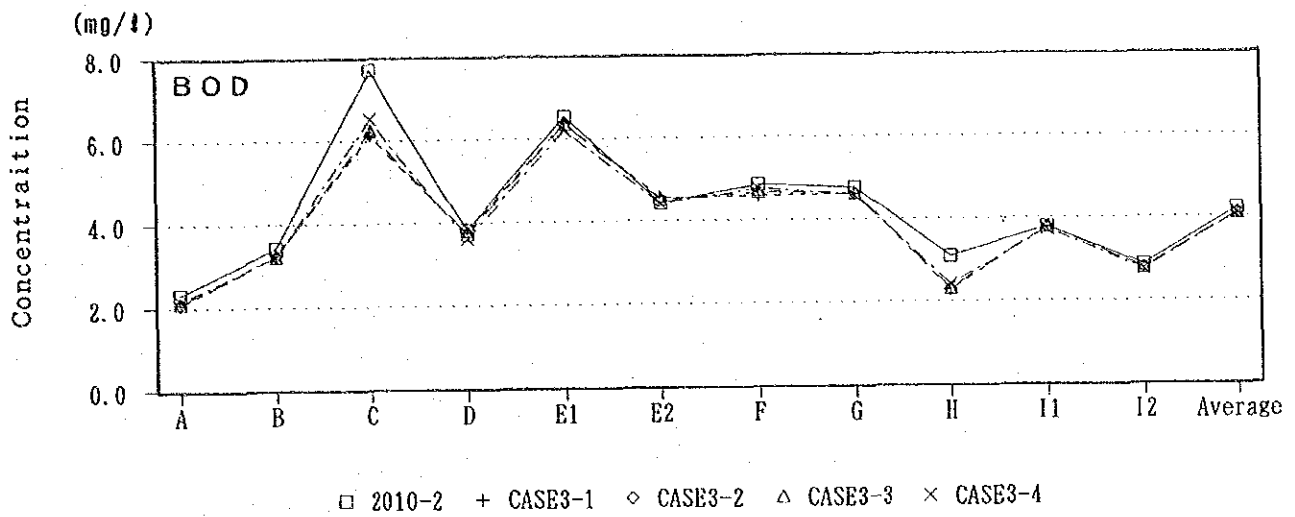


Fig. 5. 4-8 Water Quality Change in each block

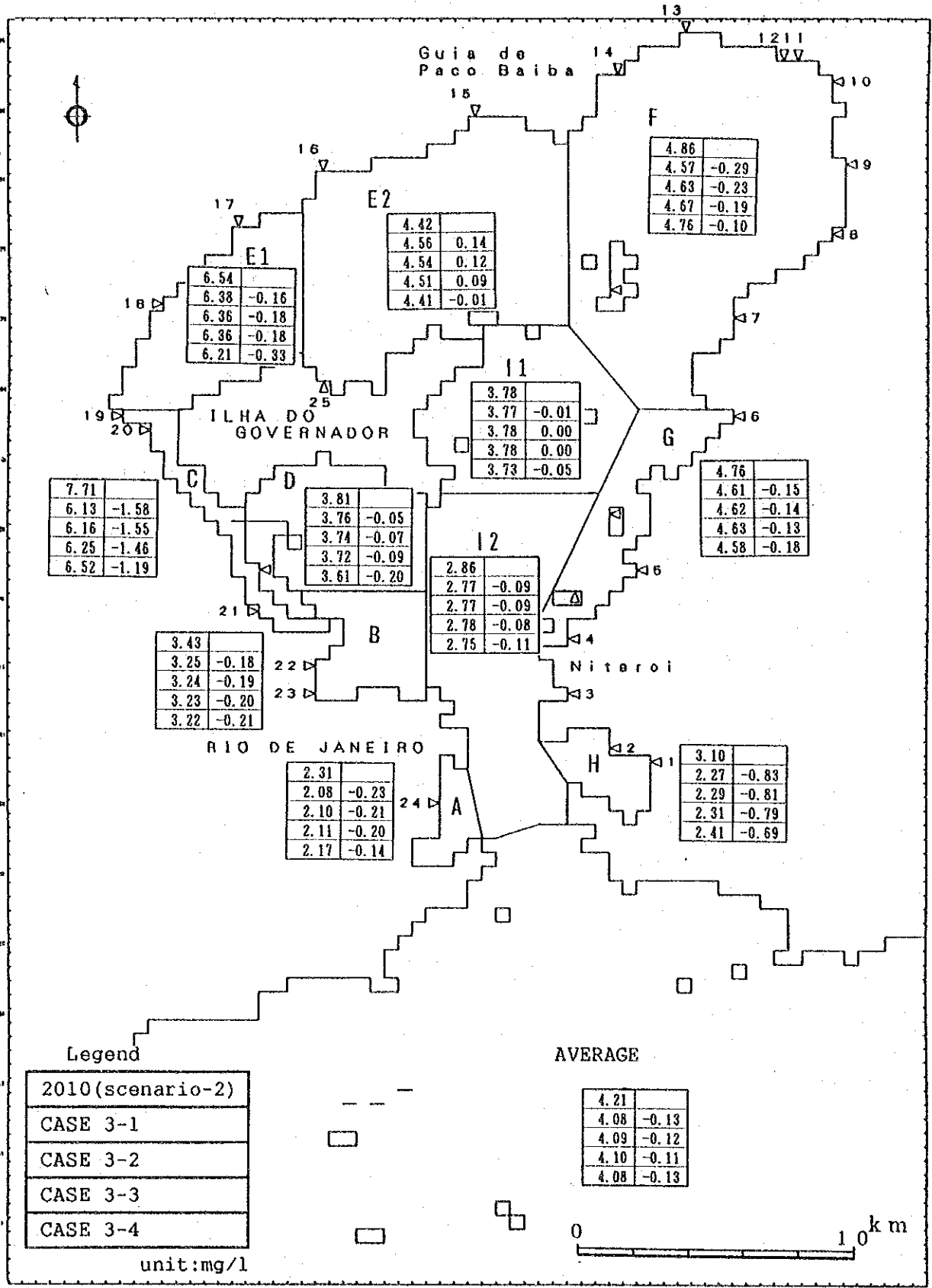


Fig. 5.4-9(1) BOD Concentration and Variation in each Block

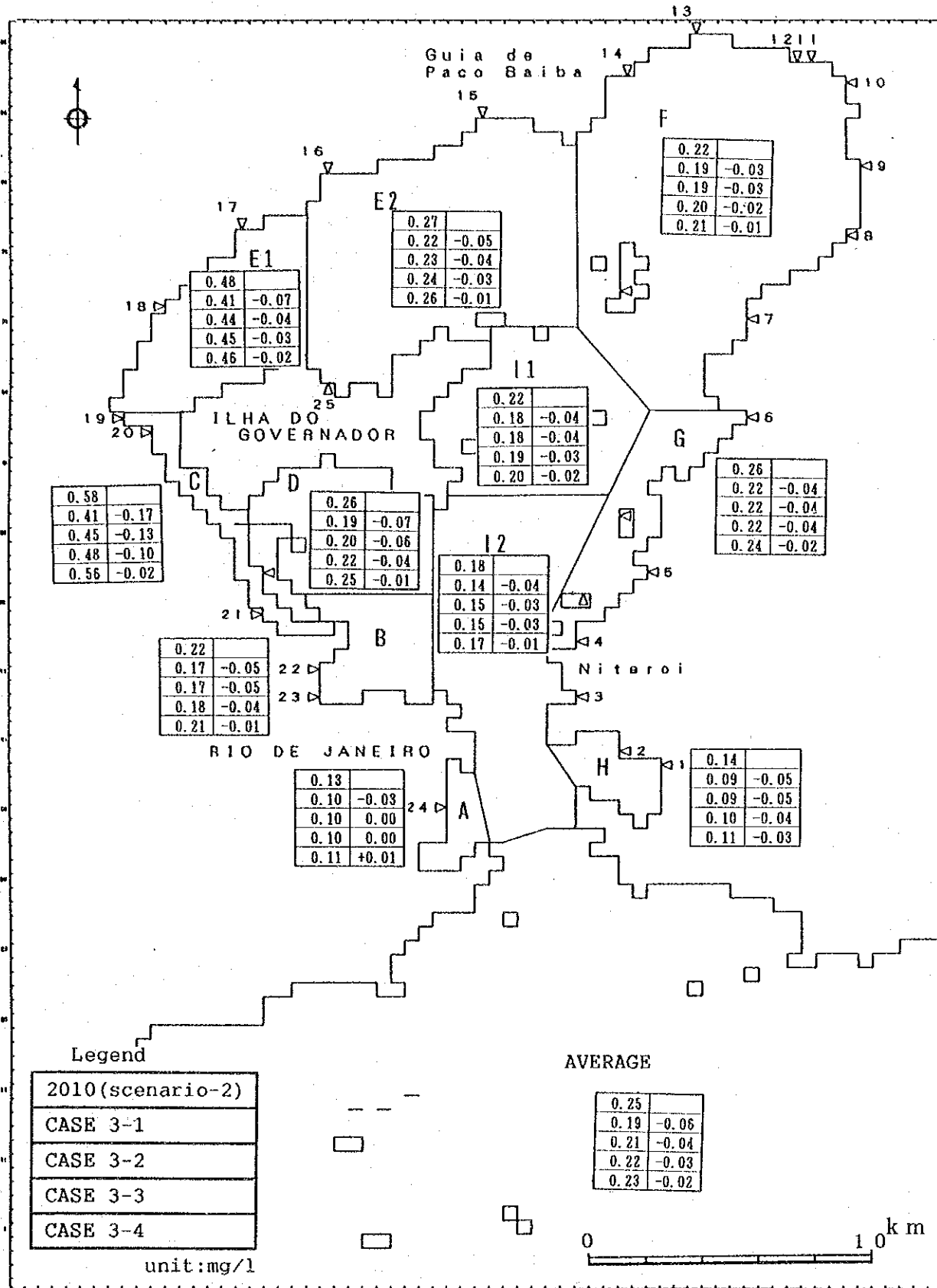


Fig. 5.4-9(2) T-P Concentration and Variation in each Block



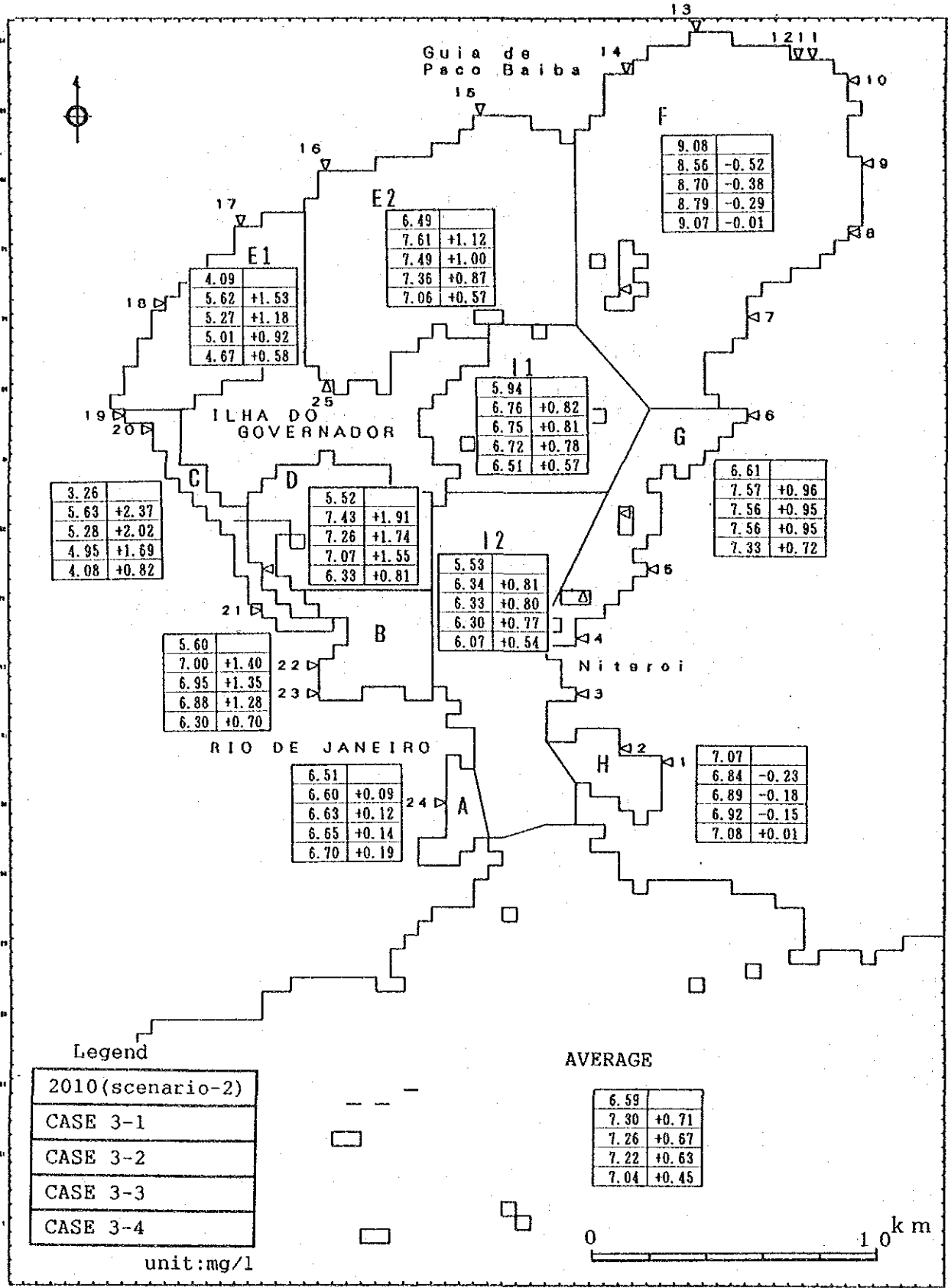


Fig. 5.4-9(3) DO Concentration and Variation in each Block

#### 5.4.4 High-Grade Sewage Treatment

Fig.5.4-10 and Fig.5.4-11 show the change of the mean water quality in each water area for BOD, T-P and DO on IDB/OECF program in 2010 (Case 1-2) and Case 4-1, Case 4-2 and Case 4-3.

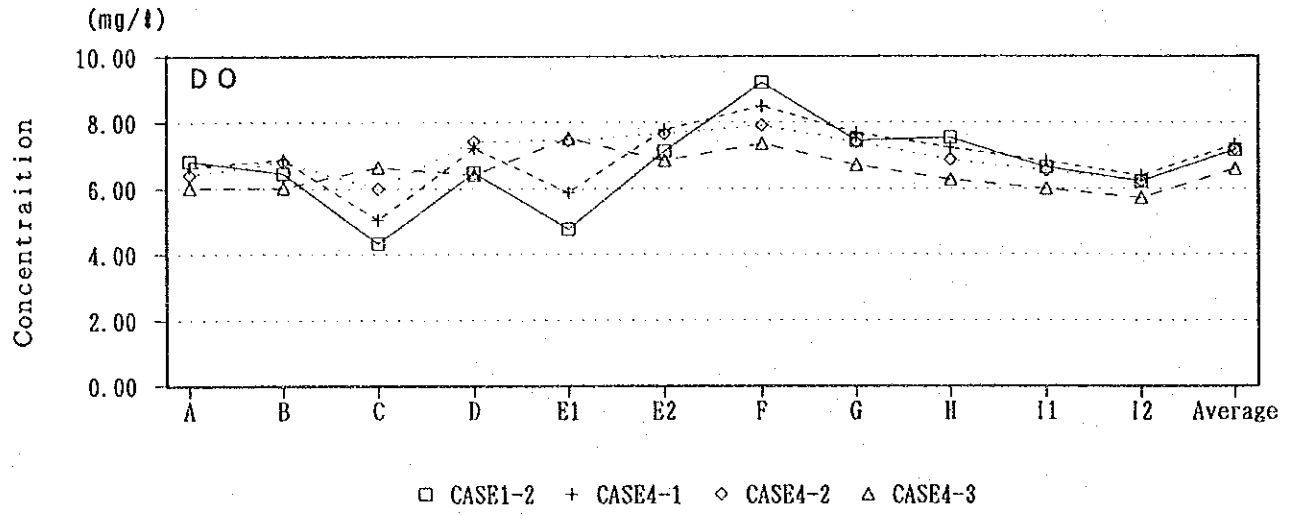
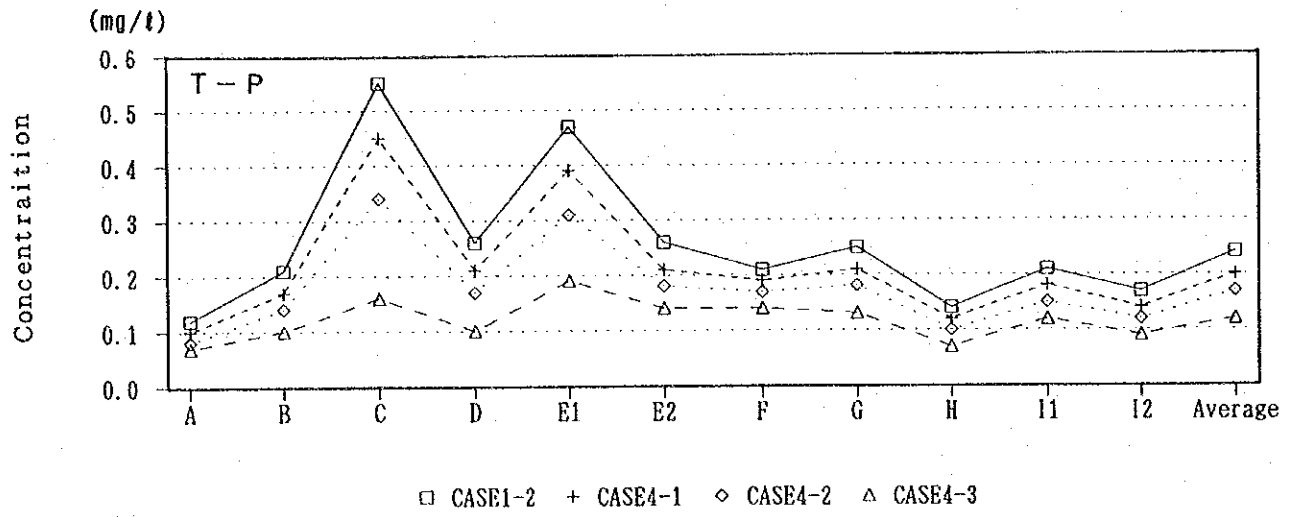
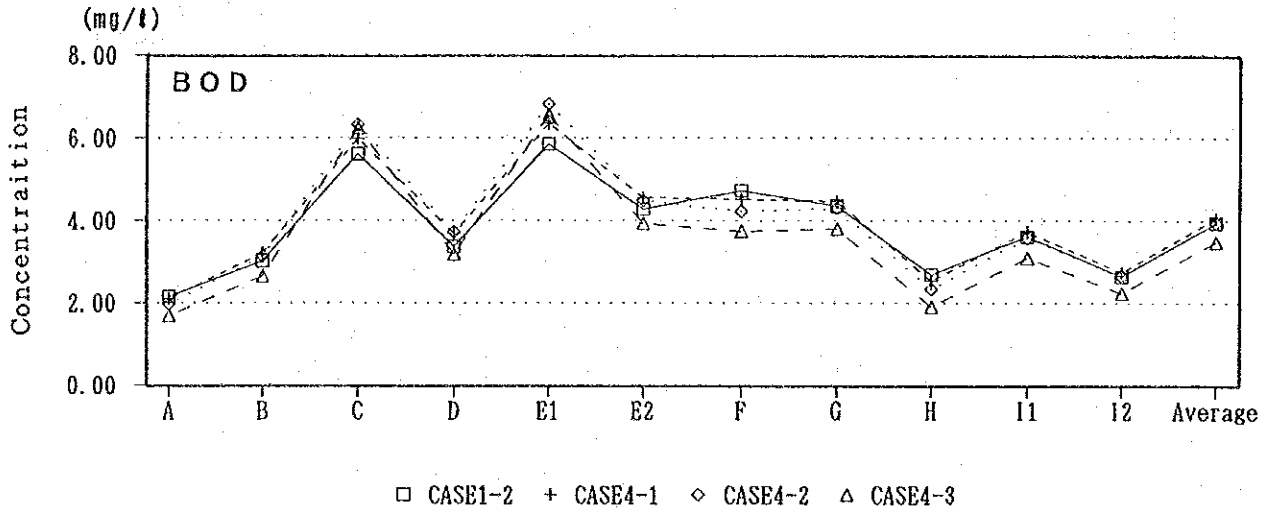


Fig. 5. 4-10 Water Quality Change in each block

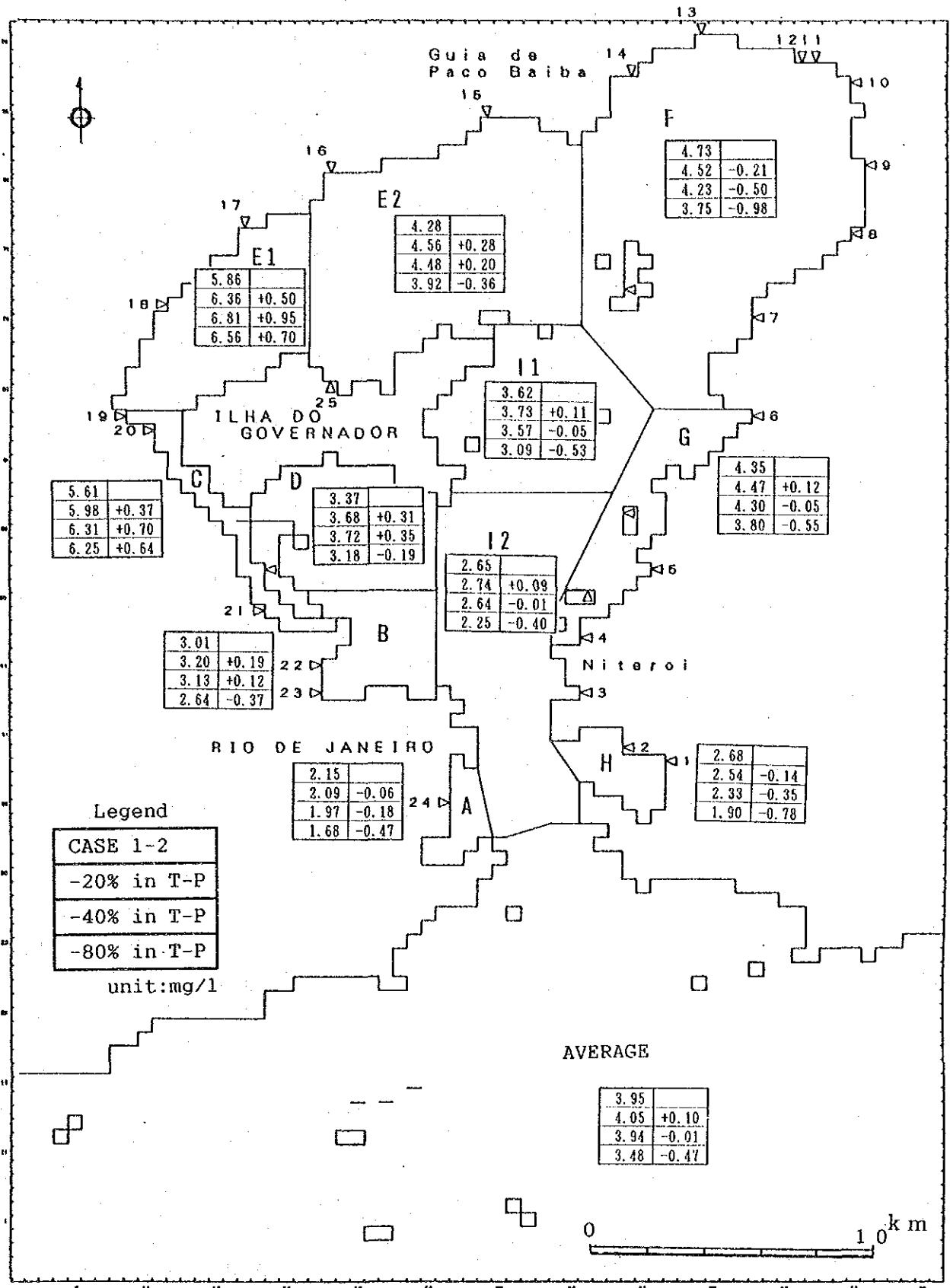


Fig. 5.4-11(1) BOD Concentration and Variation in each Block

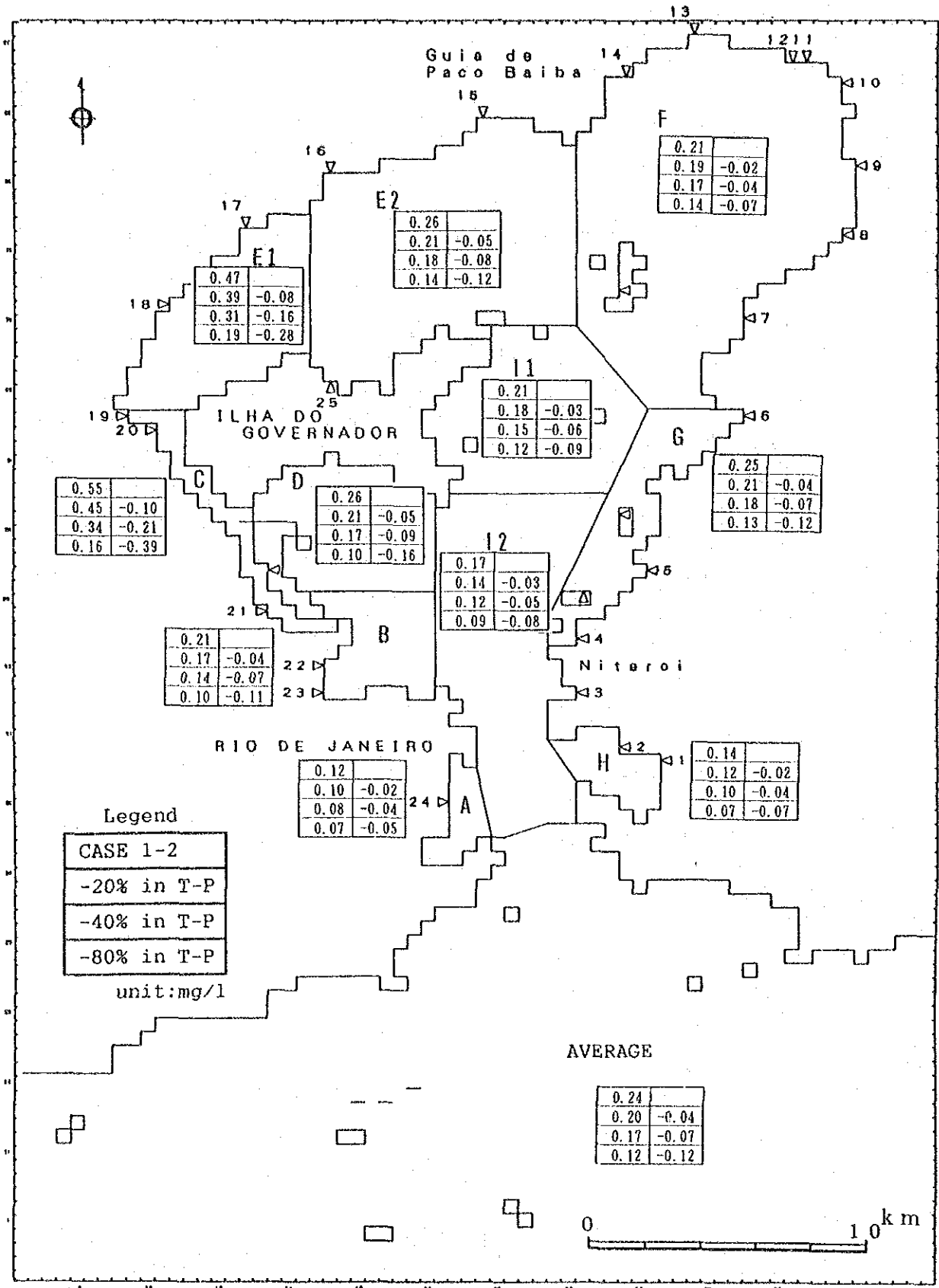


Fig. 5.4-11(2) T-P Concentration and Variation in each Block

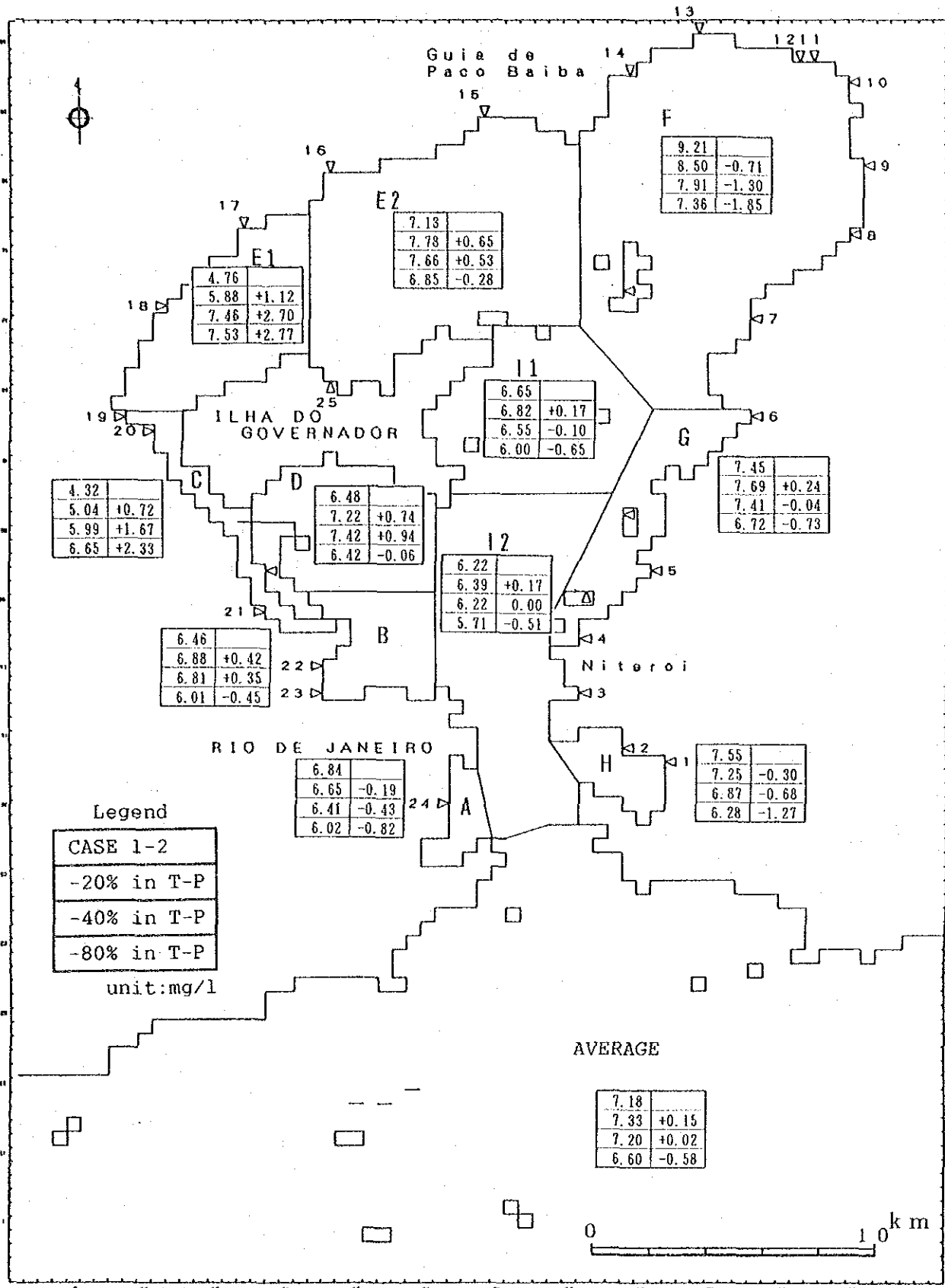


Fig. 5.4-11(3)

DO Concentration and Variation in each Block

#### 5.4.5 Dredging of Polluted Sediments

Fig.5.4-12 and Fig.5.4-13 show the change of the mean water quality in each water area for BOD, T-P and DO on IDB/OECF program in 2010 (Case 1-2) and Case 5-1, Case 5-2, Case 5-3 and Case 5-4.

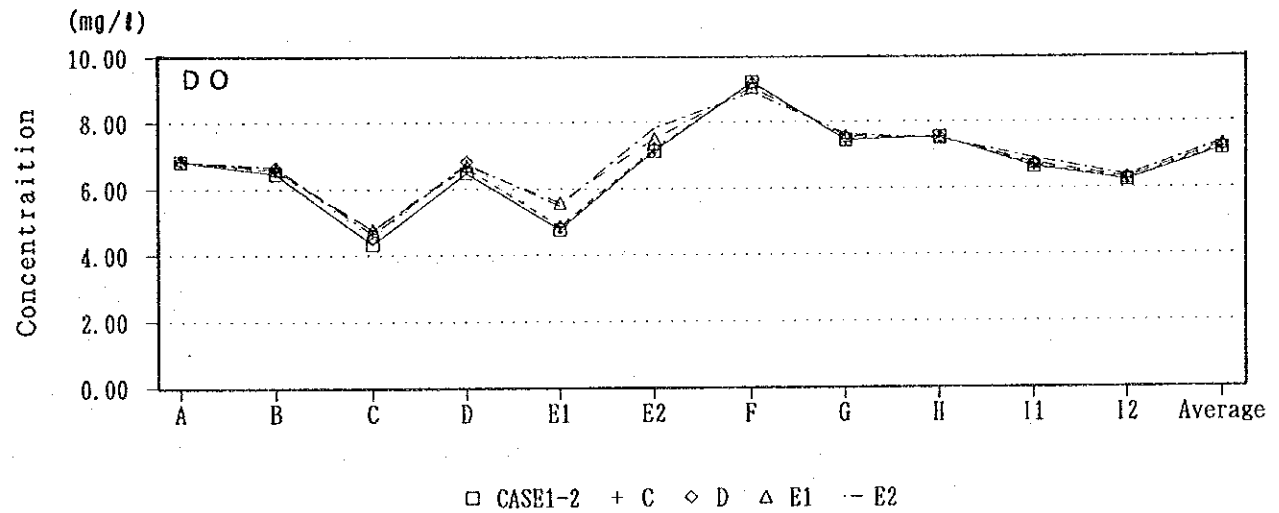
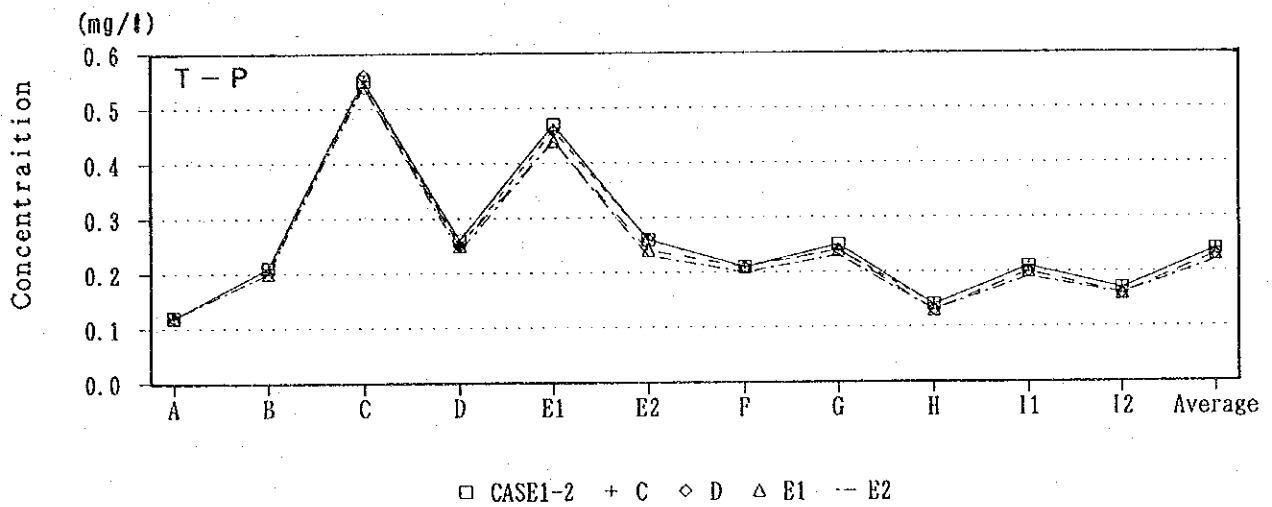
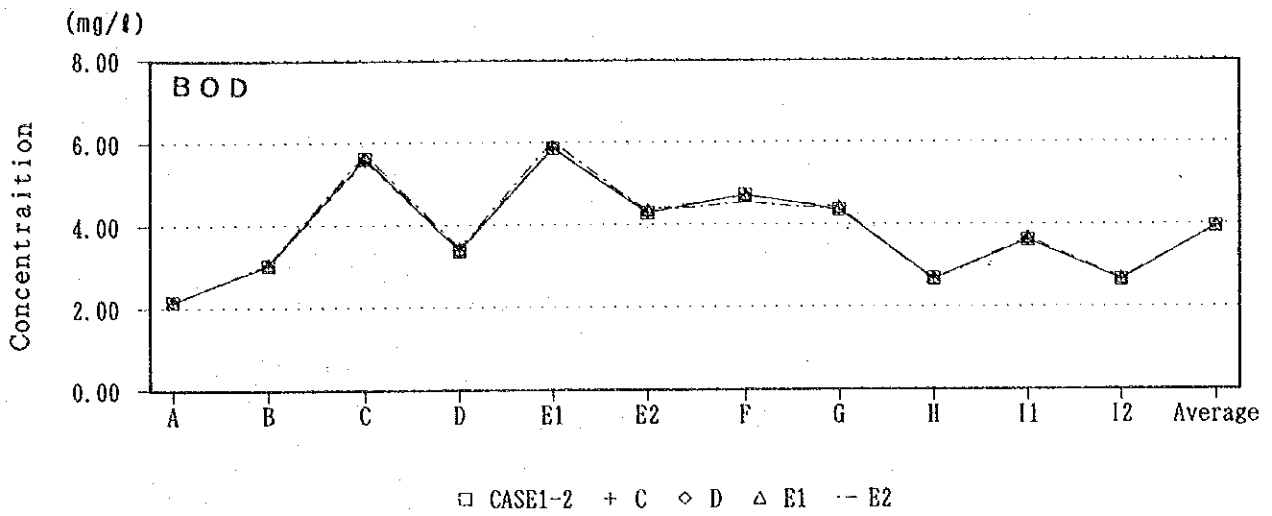


Fig. 5.4-12 Water Quality Change in each block



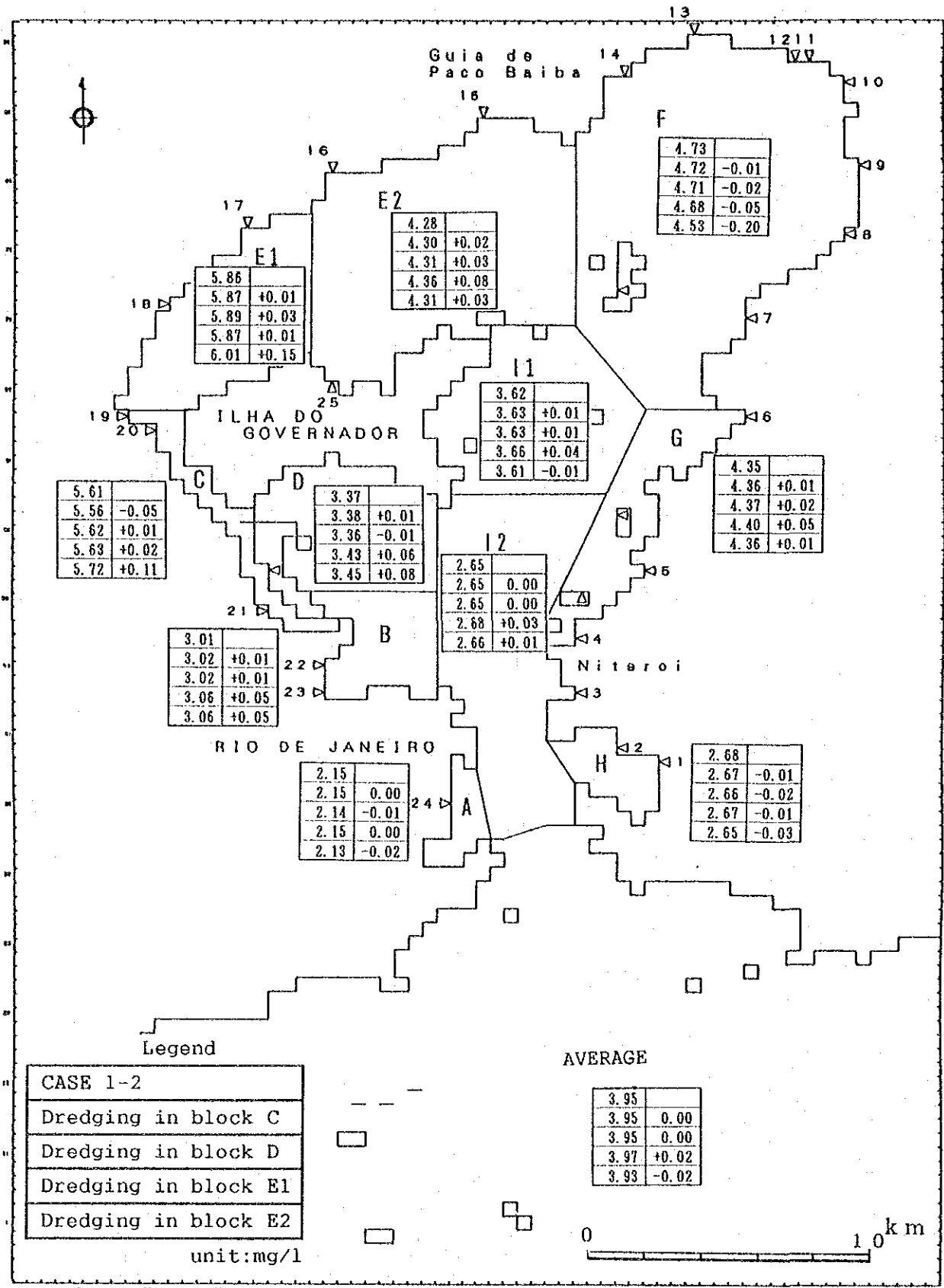


Fig. 5.4-13(1) BOD Concentration and Variation in each Block

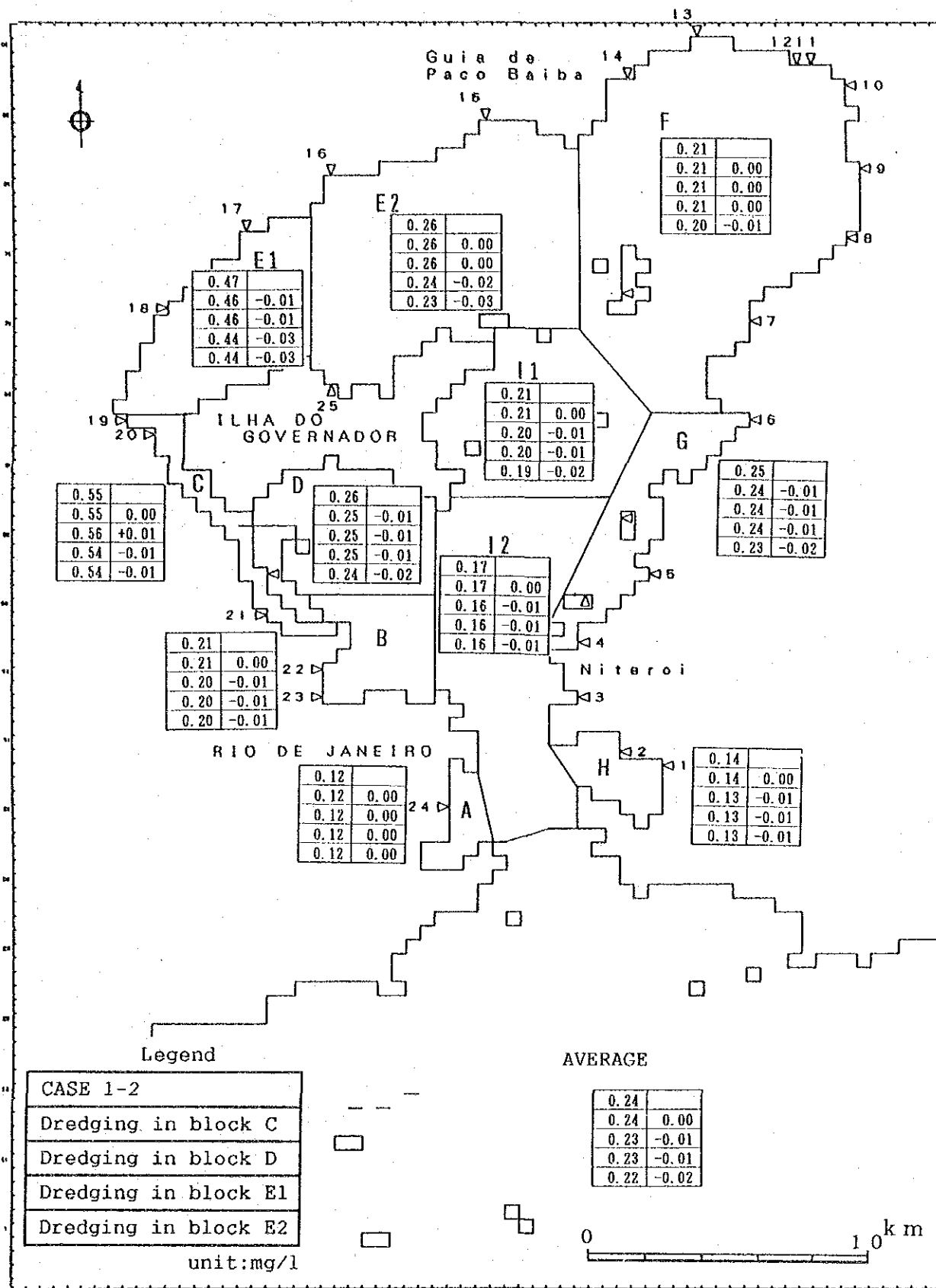


Fig. 5.4-13(2) T-P Concentration and Variation in each Block

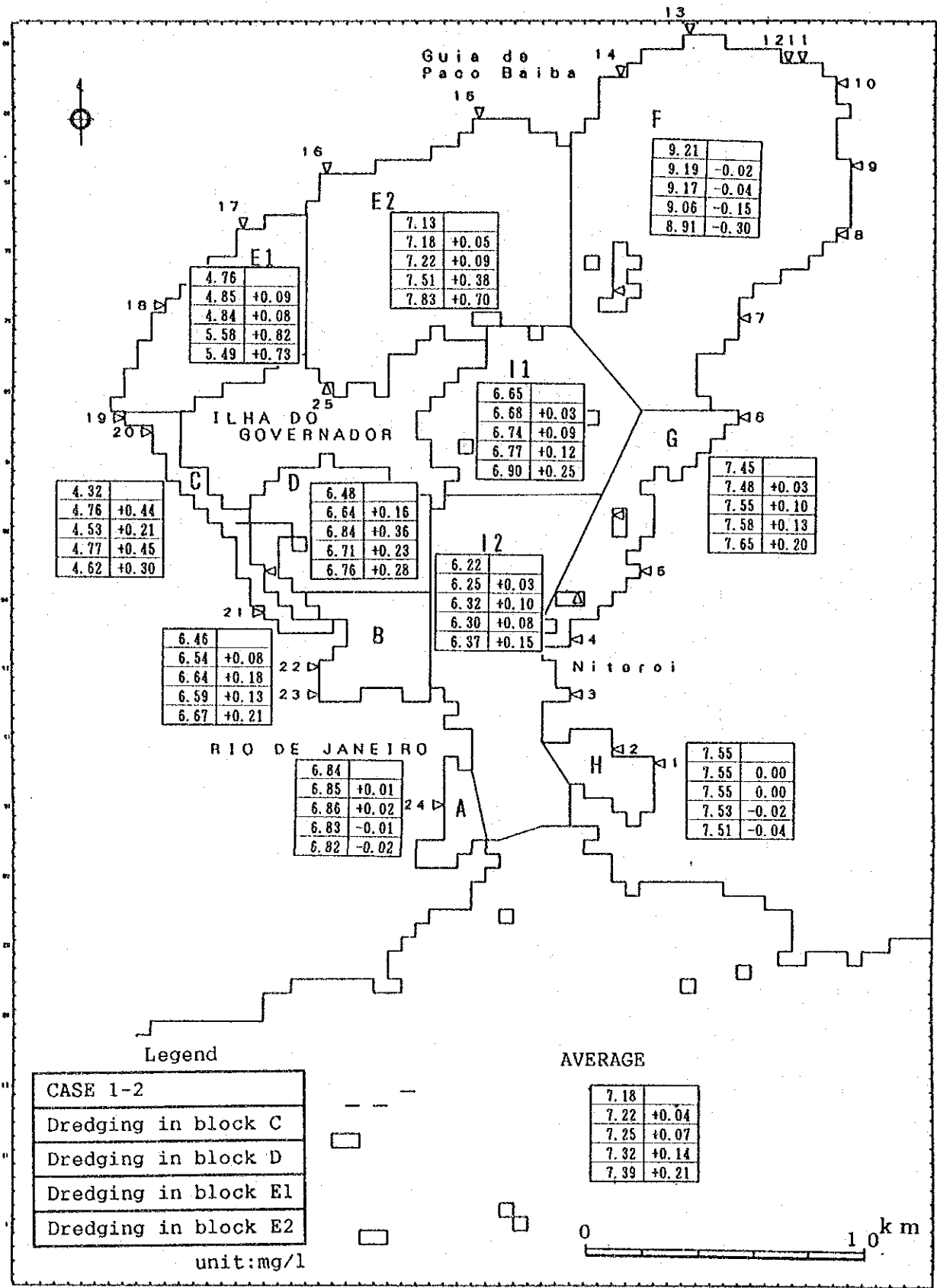


Fig. 5.4-13(3) DO Concentration and Variation in each Block

#### 5.4.6 Deepening and Widening Channels

Fig.5.4-14 and Fig.5.4-15 show the change of the mean water quality in each water area for BOD, T-P and DO on IDB/OECF program in 2010 (Case 1-2) and Case 6-1 (deepening channels) and Case 6-2 (deepening and widening channels).

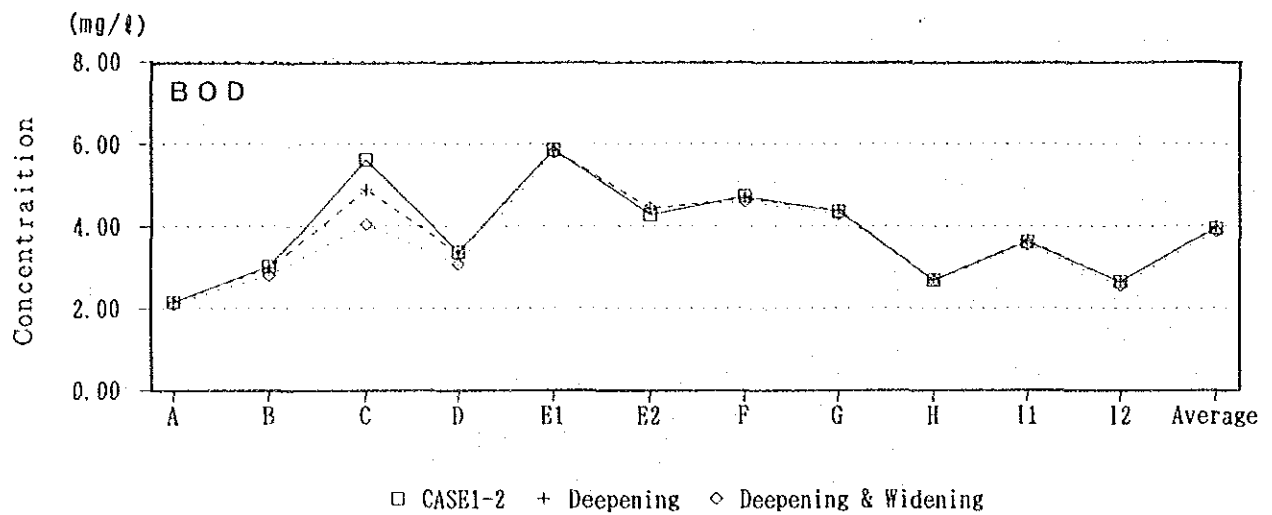
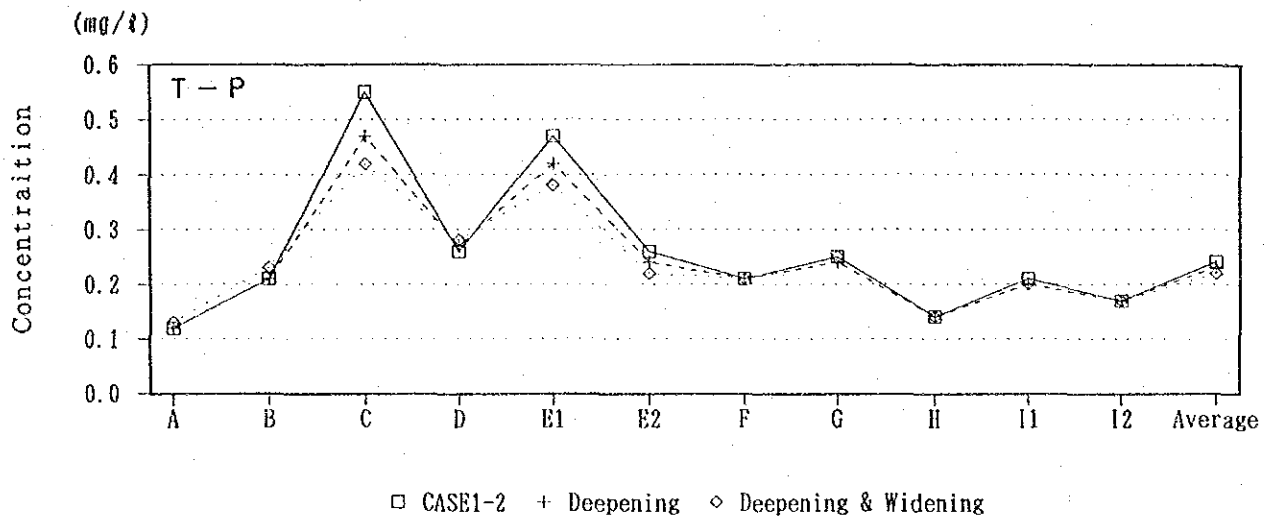
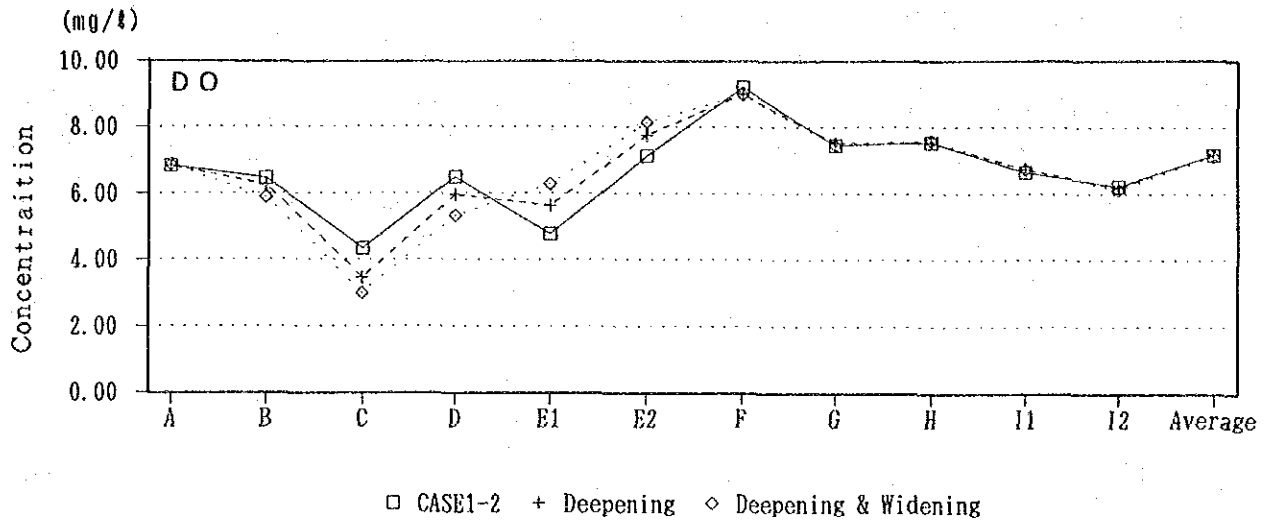


Fig. 5.4-14 Water Quality Change in each block

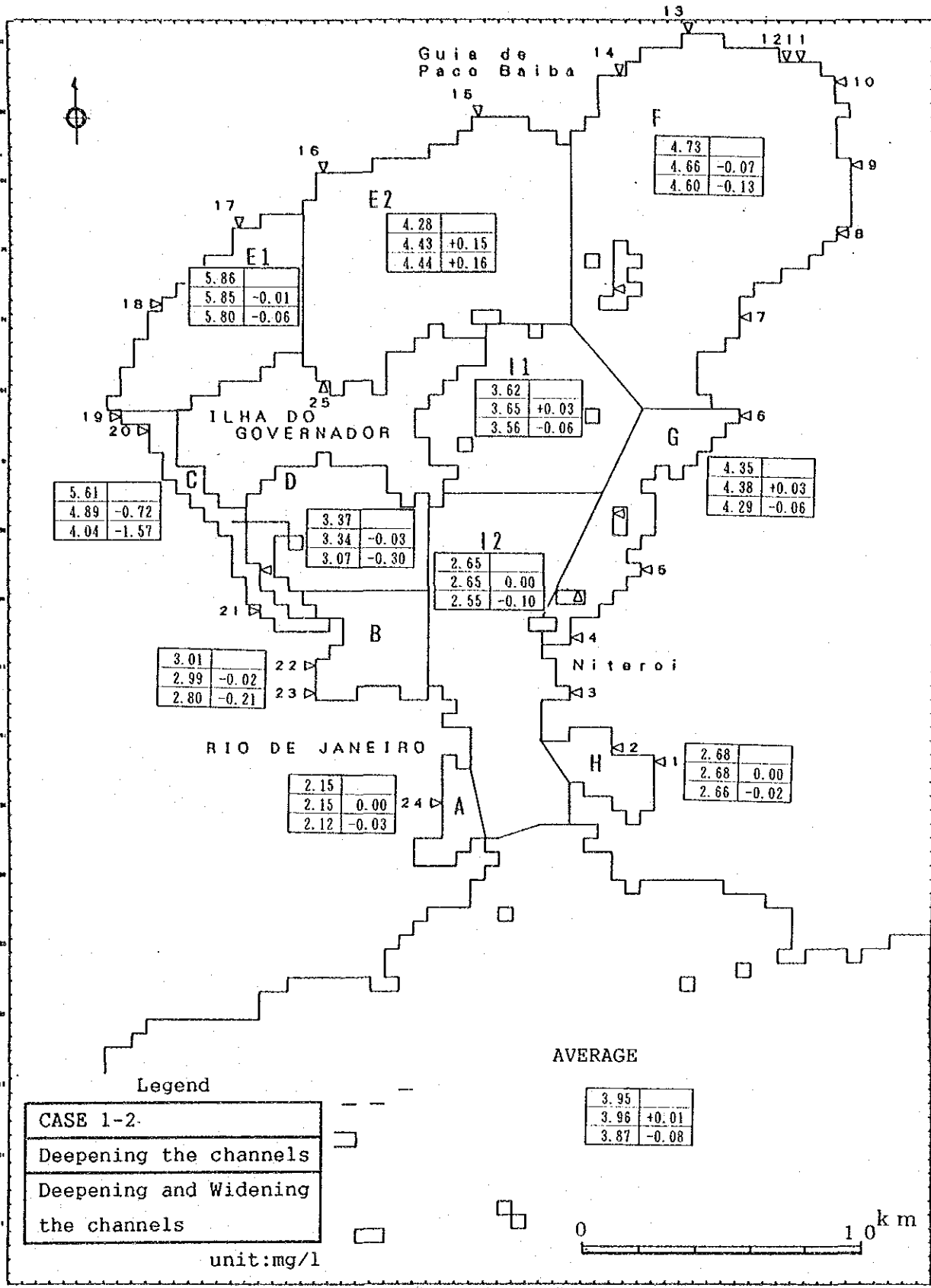


Fig. 5.4-15(1) BOD Concentration and Variation in each Block

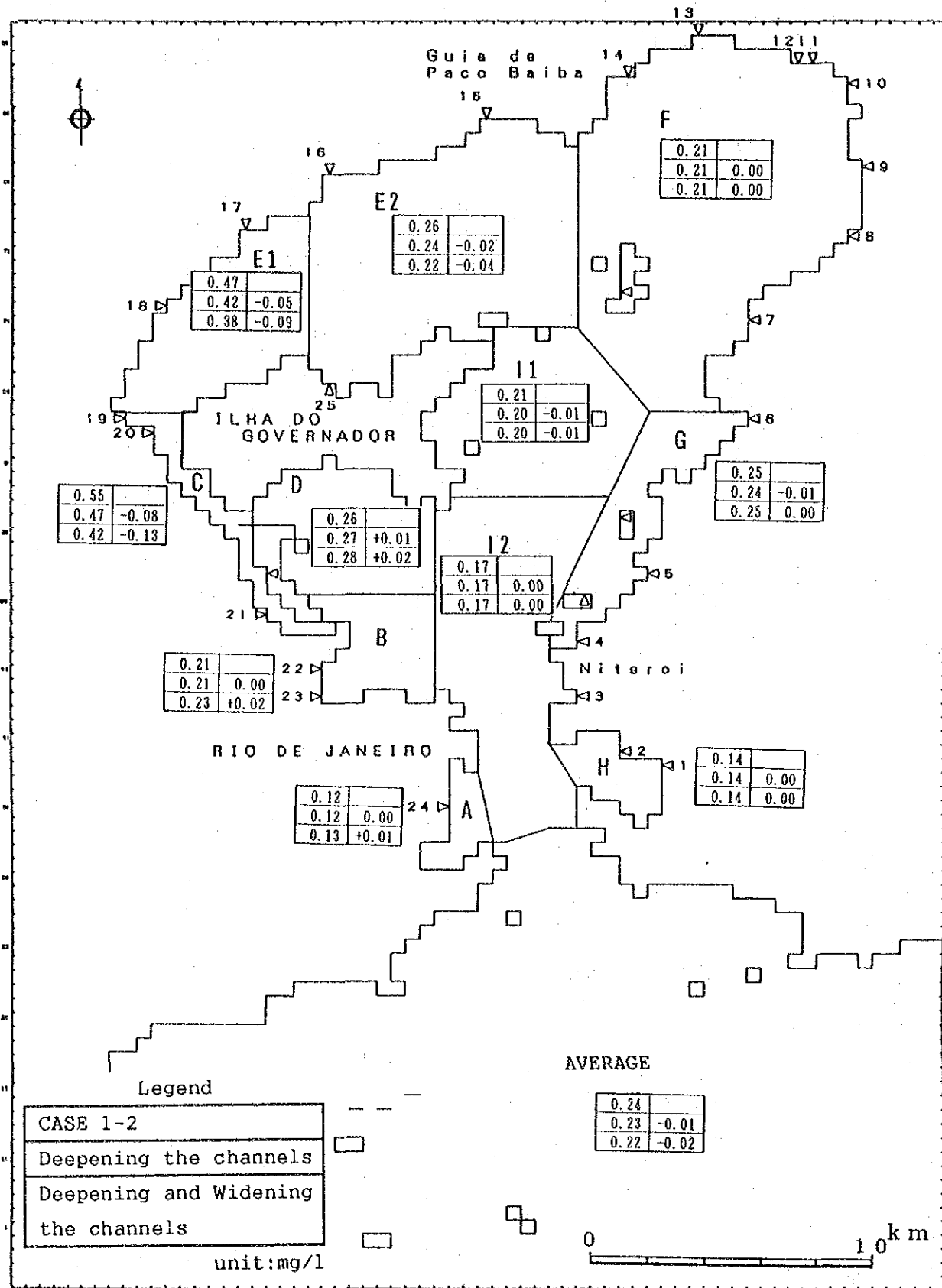


Fig. 5.4-15(2) T-P Concentration and Variation in each Block

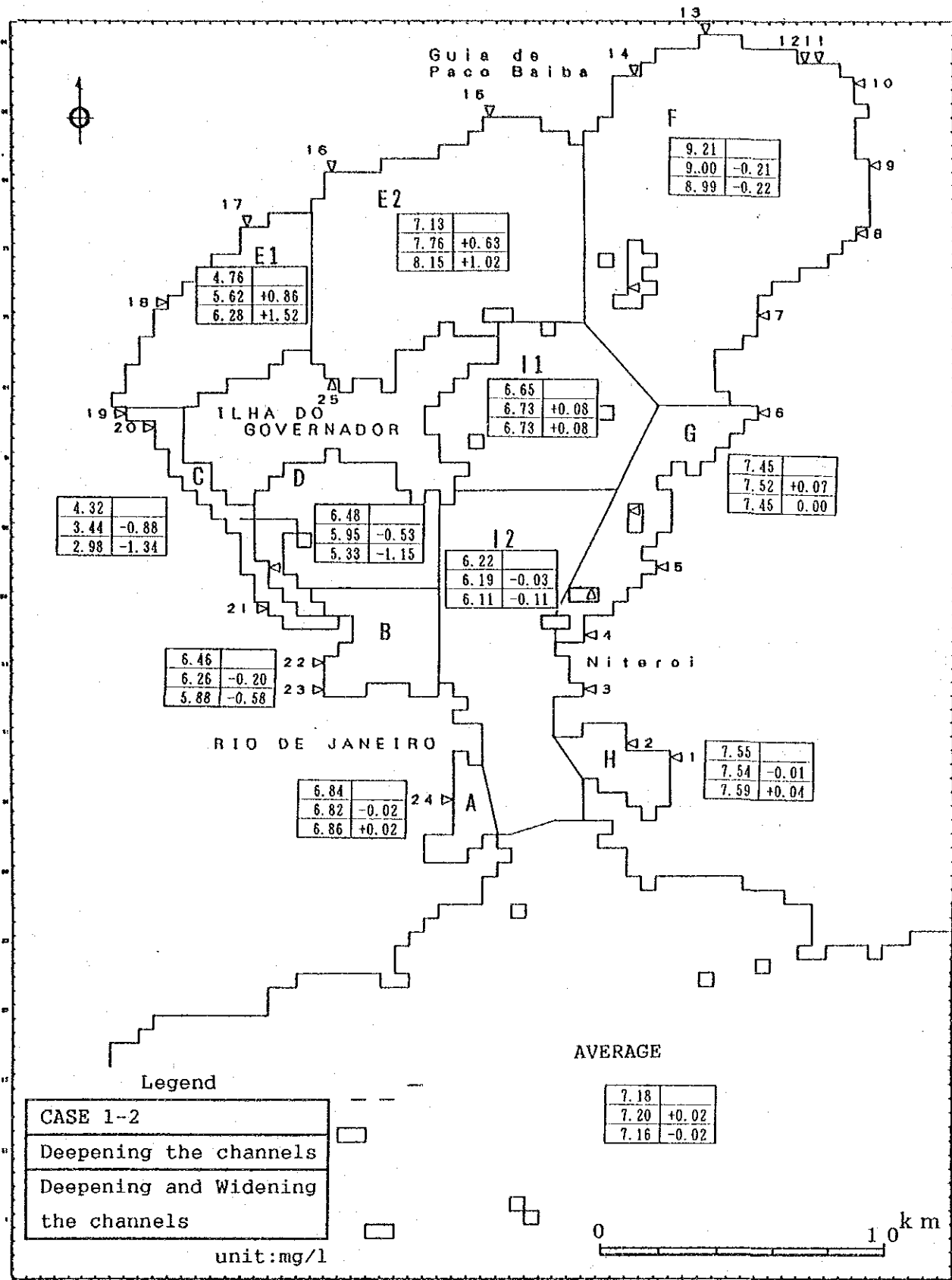


Fig. 5. 4-15(3) DO Concentration and Variation in each Block



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