

Investigation of a measure for combined sewer system overflow water

Whole term

1999.6-2000.3

(Purpose)

River flowing through Toyohashi city is a typical municipal river. Although water level increases at the time of rainfall, a little amount of water prevails during fine weather conditions. Trashes left on the surface are transported by the overflow into the river during the rainy periods. The trashes were seen deposited on the surface after the water level in the river had decreased, leaving the river scene worse. Furthermore, Uchihari River is situated close to the residential areas and the local residents complain for the improvement of the river scene, odor emission etc. Based on the above, the purpose was to improve the scene of the river where overflow is discharged. Filtration screen was installed at overflow weir of storm outfall room(NO.A, No.B)where overflow was discharged to Uchihari River. In this investigation, improvement effects (removal of trash) after installation of filtration screen in storm outfall room were examined in full-scale unit.

(Results)

The effect of trash removal after the installation of the filtration screen was checked by collecting the trash with nets before and after installation.

(1) Investigation of collected trash

Although many big size trashes, such as plastic bags and plants, were collected before screen installation, only small size trashes, such as papers, were collected after screen installation. The ratio of trash weight per flow volume before and after the screen installation was found to be 100:40, and removal effect increased by 60% after the installation of screen. This result satisfied the trash removal effect in "Manual on filtration screen facility design" which this institute published in 1998 fiscal year.

(2) Summary

The percentage of rainfall that produced overflow at storm outfall room was about 76% of annual rainfall, and the percentages of the precipitation that the whole quantity of overflow passes through screens in NO.A and B were 63% and 80% respectively. In this measurement, the removal effect of the screen for cases that overflow passed over the screen was about 60%, but if the whole overflow passes through it about 90% of trash removal effect is expected. Therefore, it is assumed that the improvement in the scene of the river by installing filtration screens in the overflow weir of storm outfall room would be large.

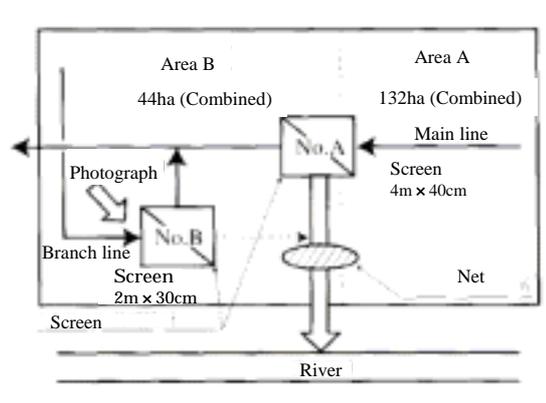
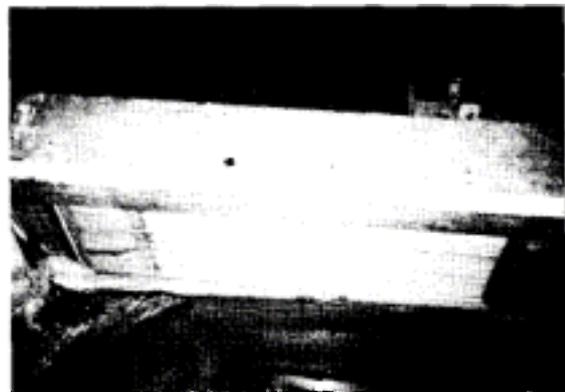


Fig. - 1 Discharged area



Pic. - 1 The installation of filtration screen

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Key words

Combined improvement, Filtration screen