Research on extracting and conveying highly concentrated sludge		
Whole term	1998. 4 ~ 1999.3	

(Purpose)

Because the treatment efficiency of sludge depends on its water content, various efforts are attempted to obtain high concentrated sludge.

However, the current sludge treatment facility has been estimated and designed for the concentration of 4 TS-%. Thus, it is difficult to extract and convey high concentrated sludge in the present facility.

This research was to investigate and to discuss the technology and the design method for highly concentrated sludge. The themes of the research were (1) Decision of the targeted concentration of the sludge
(2) Similar technologies
(3) Method of extracting highly concentrated sludge
(4) Means of conveying highly concentrated sludge.

(Results)

1) Maximum concentration for extraction: 8 TS-%, Maximum concentration for conveyance: 10 TS-%
2) Though there is no record of the extraction of high concentrated sludge from the gravity sludge thickener, a slit pipe is effective. Also, when a slit pipe is used, the length of the arrangement, the way of installing accessories and the method of maintaining blockade etc. should be concerned.
3) Pumping technologies for the extraction of high concentrated sludge, of which the sludge concentration is 8 % as TS, are centrifugal vortex pump, rotary pump and etc. In case of the pump, an economical study should be followed.
4) Pumping technologies for conveying high concentrated sludge, of which the sludge concentration is 10 % as TS, are centrifugal vortex pump, rotary pump and etc.
5) The minimum pipe size should be more than 300 mm because piping for the conveyance of high concentrated sludge has to secure a velocity of 1.0m/s

Keywords	High concentrated sludge, Extracting and conveying technology, Slit pipe technology, Centrifugal vortex pump, Way of pipe connection