**Section 370.720 Sludge and Scum Removal**

a) Scum Removal

Full surface mechanical scum collection and removal facilities, including baffling, shall be provided for all settling tanks, except for Imhoff tanks. The unusual characteristics of scum which may adversely affect pumping, piping, sludge handling and disposal, should be recognized in design. Provisions may be made for the discharge of scum with the sludge; however, other special provisions for disposal may be necessary. Refer to Section 370.710(g).

b) Sludge Removal

Mechanical sludge collection and withdrawal facilities shall be designed to assure an effective and controlled rate of removal of the sludge. Suction withdrawal is encouraged.

1) Sludge Hopper

The minimum slope of the side walls shall be 1.7 vertical to 1 horizontal. Hopper wall surfaces should be made smooth with rounded corners to aid in sludge removal. Hopper bottoms shall have a maximum dimension of 2 feet. Extra depth sludge hoppers for sludge thickening are not acceptable.

2) Cross-Collectors

Cross-collectors serving one or more settling tanks may be useful in place of multiple sludge hoppers.

3) Sludge Removal Piping

Each hopper shall have an individually valved sludge withdrawal line at least 6 inches in diameter. The static head available for withdrawal of sludge shall be 30 inches or greater, as necessary to maintain a 3 feet per second velocity in the withdrawal pipe. Clearance between the end of the withdrawal line and the hopper walls shall be sufficient to prevent "bridging" of the sludge. Adequate provisions shall be made for rodding or back-flushing individual pipe runs. Piping shall also be provided to return waste sludge from secondary and tertiary processes to primary clarifiers where they are used. Refer to Section 370.820.

4) Sludge Removal Control

Sludge wells equipped with telescoping valves or swing pipes are recommended for primary sludge and fixed film sludges where periodic withdrawal is proposed. Air lift type of sludge removal will not be approved for removal of primary sludges.

(Source: Amended at 21 Ill. Reg. 12444, effective August 28, 1997)