

# Cleaning Leachate Collection Pipes Using High Pressure Jets

*Written by Ali Khatami, Ph.D., P.E.,  
SCS Engineers*

Chapter 62-701 of the Florida Administrative Code requires leachate collection pipes to be either cleaned using a high pressure jetting system or video-taped to demonstrate that the pipes are clear and flow of leachate takes place inside the pipes with no obstructions. Rule 62-701.500(8)(h) of the Florida Administrative Code sets the minimum frequency of the above activity every five years, but the rule does not clarify or require any specific conditions during which the jetting of the pipe should be carried out. It has been observed that some landfill operators perform jetting of the pipes while the pipe may be partially or fully submerged in leachate above the liner. Jetting under water may drastically reduce effectiveness of the pressurized jet, and the cleaning that is intended by the rule may not occur. This becomes even more important when the jetting is anticipated to remove some, if not entirely all, of the biological growth taking place on the pipe walls and in the perforation openings. Since video-taping after jetting the pipe is not required, the landfill operator would not know whether the jetting was fully effective to clean the pipe. In the case of repeating this process several times over a period of 20 years or so, the leachate collection pipe could potentially be adversely impacted by severe biological growth and buildup of gunk in the pipe perforation openings to a point that liquid can no longer enter the pipe.

Another shortcoming of the above rule is that the rule does not specifically require the riser pipes

within which submersible pumps are located to be cleaned using pressurized jet systems or be video-taped. Therefore, due to the cost of cleaning, some landfill operators may not clean the riser pipes as part of the five-year cleaning activity or delay such cleanings for an extended period of time. The delay or lack of cleaning can have serious implications for flow of leachate into the riser with the direct consequence of not being able to remove leachate from the sump.

Aside from the requirement of the above rule, pressurized jet cleaning procedures do not necessarily push solids separated from the pipe wall out of the pipe inlet opening through which the cleaning nozzle entered the pipe. As a result, the solids end up flowing out of the pipe and into the gravel bedding on the outside of the pipe. This can potentially clog the void within the gravel pack around the pipe or in the sump. Clogging the sump gravel can mean reduced flow capacity from the leachate collection pipe to the riser pipe and the submersible pumps.

In light of the above issues, the following suggestions are provided for consideration by landfill operators to ensure that the life of the leachate collection pipes are extended as much as possible and the riser pipes are maintained in operating conditions:

- Prior to inserting the pressured jet cleaning nozzle inside the pipe, remove leachate from the leachate collection pipe and the sump as much as possible.
- Clean the leachate collection pipes and riser pipes during the same event.
- Have a vacuum truck available to

remove liquids that reach the lowest point of the leachate collection pipe or riser pipes during jetting.

- Perform video-taping after jetting every 10 years at the minimum (or shorter time intervals) to ensure that perforations in the leachate collection pipe and riser pipes are cleaned properly.
- Repeat jetting if there are indications that additional cleaning is needed, because leaving the pipe uncleaned will create an even more severe condition inside the pipe five years later.

Implementation of these recommendations clearly has additional cost implications, but the benefits of following these recommendations definitely overrides the complications that the landfill operator may have to address some number of years down the road.