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Turning Sewage Plants Into Friendly Neighbors

By ALLAN R. GOLD

In sewage treatment, smell comes with the territory. But unlike the city's experience at the North River sewage plant in Harlem, odors can be controlled.

Engineers say doing so requires a well-designed plant, good control of the treatment process and a more intangible element: strong morale among plant workers.

When these factors come together, odors "can be drastically reduced," said Richard L. Newman, the state's regional water engineer.

Experts say the North River plant, which borders the Hudson River between 137th Street and 145th Street, could be suffering from one or a combination of weaknesses in design, process and morale. In April, North River began to treat sewage in a more advanced way, removing 85 percent of pollutants instead of 60 percent or less. Despite city assurances to the contrary, it appears that this step has only worsened the odor problem. Reports of Growing Odors

Last weekend people who live near the North River plant reported the worst odors ever, and city and state officials for the first time admitted that they were unsure what was causing the odors and how they could be controlled. The city's Department of Environmental Protection has begun a 60-to-90-day review of the situation.

North River, the city's newest and most expensive plant, is not the first one here or elsewhere to generate foul odors.

"There's plenty of opportunity for odor emissions at any waste-water treatment plant," said Charles M. Murray, a sludge operations official at the Suburban Sanitary Commission in Washington. "I've never been to one that doesn't have an odor."

Besides North River, five of the city's 13 other plants prompt odor complaints, Mr. Newman said. These are Newtown Creek in Brooklyn, the city's biggest; Coney Island and Owl's Head in Brooklyn, and Bowery Bay and Jamaica in Queens. No Complaints at 2 Plants

But some, like the 26th Ward plant in Brooklyn and Tallman Island in Queens, generate no complaints even though they adjoin residential areas, Mr. Newman said.

Worker attitudes may play a role, he said. "If you have the right kind of esprit de corps, the plant is a good actor," Mr. Newman said.

Without that, workers may take short cuts, he acknowledged, like leaving open doors at the plant that allow odors to escape or failing to hook up odor-control systems. State inspectors have observed situations like these at North River, Mr. Newman said.

One possibility is that the North River operators lack experience in running the plant's secondary-treatment equipment. To get the best treatment with the least odor requires knowing what constitutes the right mix of sewage, air and bacteria.

Albert F. Appleton, the city's Environmental Protection Commissioner, said that once glitches were worked out, the city would be able to tell whether the plant's problems were more than just operational. Design Questions Raised

But questions have already been raised about the plant's design because of the persistence of the odor problem.

Jim Joyce, an odor-control specialist with James M. Montgomery, an engineering firm based in Pasadena, Calif., said a typical sewage plant emits the worst smells at two points: where the waste water enters and where sludge, a byproduct of treatment, is handled at the end. At North River, though, odor-control systems have been installed to deal with the problems at both points.

In a brochure about the North River plant, the city boasts that the odor-control systems are the most complete of any sewage plant in the United States.

Foul air collected from various parts of the plant moves through a two-step filtering process. First, it passes through a chlorine-based scrubbing system. Then the air enters a carbon filter before it is discharged through stacks on the plant roof.

But community residents sometimes wonder when the machinery is running.

"We can never get a straight answer about whether all the odor-control equipment is functioning 24 hours a day," said Peggy Shepard, co-

founder of West Harlem Environmental Action, a citizens group that has followed the plant's odor problems.

If properly functioning odor-control systems are not the answer, then design becomes a bigger issue. The city is already looking for a way to stop solids from rising to the top of tanks in the secondary treatment process, rather than settling, as they should. At the top of the tanks, solids can create a terrible smell.

A greater problem, predating the changeover to secondary treatment, could be that North River is an enclosed plant, one of the few in the nation. Mr. Joyce and Mr. Murray suggested that odors might be concentrating in the plant, eventually drifting outdoors through the structure's arches. In open-air plants, odors may be more easily dispersed by winds.

If this is the problem, the city may have to build costly containers around the treatment tanks and filter the gases that are created.

In response to the worsening odors, State Senator Franz S. Leichter and City Councilman Stanley E. Michels yesterday called for suspending secondary treatment until the smells can be addressed. They advocate a plant shutdown if the odor problem is not resolved in 60 days, and a moratorium on new sewer hookups.

Carol Ash, regional director for the State Department of Environmental Conservation, said yesterday that suspending secondary treatment was "not a possibility" because it would hurt water quality in the Hudson River.

She would not comment about the proposals to shut the plant down or invoke a moratorium, except to say the state would consider Senator Leichter's suggestions "very seriously."