All primary influent and effluent channels covered

Exhaust fan for activated sludge diffusion of odors

Carbon adsorber for odor control

Two sludge holding tanks are covered

JEFFERSONTOWN WASTEWATER TREATMENT PLANT
ODOR CONTROL PROJECT OVERVIEW
JEFFERSONTOWN ODOR CONTROL PROJECT SUMMARY

• Two Phase odor control project
• Total spent by MSD during 3 years is $600,000
• Last project successfully completed in October, 2003

Odor specialists with Webster Environmental Assoc. and CH2MIIll initially conducted a study and developed a Master Odor Control Plan for the facility
CHEMICAL FEED SYSTEMS INSTALLED AT PUMP STATIONS

- Lakelet Way and Chenoweth Run Pump Stations were major contributors of odorous hydrogen sulfide
- Chemicals (Bioxide) help control odors from manholes outside plant boundaries as well
RAW SEWAGE CHANNELS AND SLUDGE HOLDING TANKS WERE COVERED TO CONTAIN ODORS
CARBON ADSORBER USED TO TREAT ODORS FROM SLUDGE HOLDING TANKS

- Carbon is often used to physically remove odors from wastewater treatment plant processes
- This unit was tested and removes 99.8% of hydrogen sulfide and 94% of odor emissions
ACTIVATED SLUDGE DIFFUSION EFFECTIVELY TREATS RAW SEWAGE ODORS

- Air is pulled from under channel covers with an exhaust fan
- Odorous air is diffused into the activated sludge process for effective treatment with 97.6% removal of hydrogen sulfide
MSD MODIFIED IT’S OPERATION TO REDUCE ODOR EMISSIONS

• MSD changed the operation of the plant process to reduce odor emissions from the secondary aeration basins
• Plant performance has not been compromised as a result
Hydrogen Sulfide Emissions are reduced by 76% as a result of odor control project.
Odor emissions are reduced by 78% as a result of the odor control project.
ODOR MODELING USED TO SHOW RESULTS……

Models predict peak dilutions to threshold (DT) and the frequency (hours per year) with which they occur
Notice peak DT contour of 50 in residential area before odor control implemented.
Notice peak DT contour reduced to 10 (very faint odor) in residential area after odor control implemented.

Modeling shows significant improvement in odors in the neighborhoods as a result of odor control project.
Notice that odors could have occurred frequently before the odor control project up to 1000 times per year in the residential areas.
Notice that frequency contours
Reduced to 100 times per year
For a faint odor detection

Frequency Contours (Hrs/Yr > 7 D/T)
After Odor Control Improvements
MSD MEETS ODOR CONTROL GOALS FOR J’TOWN WWTP

• Successful odor control project has eliminated, or at the very least, significantly reduced odor complaints to comply with MSD’s Good Neighbor Policy