

**Ann Arbor Wastewater Treatment Plant
Meeting Summary
Public Meeting: Odor Control Study
June 15, 2006**

Attendees

Thirteen members of the public (representing 10 Ann Arbor and Ann Arbor Township households)

Ann Arbor Wastewater Treatment Staff: Earl Kenzie, Mike Amicangelo
Consultants: Paul Vogel, Greeley and Hansen; Joe Popeck, Greeley and Hansen;
Francine Alexander, Alexander Resources

Welcome and Project Background

Earl Kenzie welcomed the group and shared that the purpose of the meeting was to review the proposed recommendations of the odor control study and gather public input regarding those recommendations.

By way of background, Earl reviewed the bigger picture of the work underway at the plant.

The Wastewater Treatment Plant (WWTP) is implementing the Facilities Master Plan recommendations and is in the process of developing a design for the demolition and reconstruction of the aging West Plant and upgrades to the East Plant. The purpose of this project is to upgrade, rehabilitate or replace aging facilities to meet future flow, loading, and regulatory requirements.

The Residuals Handling project is implementing Sewage Residuals Management Plan recommendations to develop designs for new residuals handling facilities, which process the residual solids from the wastewater. As part of the Residual Handling project, the City requested a complete odor control study for the entire plant, which is being conducted by Greeley and Hansen.

Odor Control Study

Please see the PowerPoint file for additional information shared during the presentation by Greeley and Hansen.

Joe Popeck, odor control specialist with Greeley and Hansen, shared that the major capital improvement projects at the plant provide a good opportunity for reducing odors. The odor control study is a plant-wide comprehensive look at odors, with the objective being to reduce odor sources identified as most likely to impact neighbors and plant staff.

Greeley and Hansen performed odor sampling and testing and characterized odor sources at the WWTP. They then ranked odor sources based on perceived potential to impact neighbors and plant staff. The study then evaluated technologies that reduce the identified odors and made the recommendations for odor control alternatives with the staff and now with the public.

Joe Popeck shared that the odor source composition was primarily hydrogen sulfide (H₂S), other sulfur species and volatile organic compounds (VOCs), normally found at wastewater treatment plants.

Joe Popeck reviewed the sites that had been tested and the methodology for determining what areas were the most likely sources of nuisance odors for neighbors and for plant staff.

The recommended alternatives incorporated one or more proven technologies based on the results of the evaluation. The tables on pages 3 and 4 outline the evaluation process, the areas determined to be of highest impact, the proposed process of odor control, and the estimated costs for effective odor control.

The odor control recommendations are expected to be completed by Fall 2007 (manholes and overflow structures) and Fall 2009 (sewage residuals facility). Expected odor mitigation results will exceed 99%.

Potential Odor Source	Relative Odor-Generating Potential	H2S/Other Sulfur/Ammonia Concentration	Volume of Exhaust Air	Proximity to Residents	Source of Odor Complaints	TOTAL RANK ⁽¹⁾	Recommended for Implementation	Capital Costs (1,000s)
MH at WWTP Entrance on Dixboro Road	High	10	1	10	10	31	Y	\$1,864
Overflow Structure at WWTP Entrance Bridge	Moderate to High	9	1	9	9	28	Y	
Liquid Sludge Holding Tanks	High	8	5	5	8	26	Y	
Gravity Thickening Tanks	Moderate to High	7	4	5	8	24	Y	
Scum Concentration Room	High	9	5	4	7	25	Y	
Truck Loading Area - Cake Sludge Hoppers	High	8	4	4	7	23	Y	
Centrifuge Vent Exhaust Air	High	8	2	4	7	21	Y	
Screen and Grit Building	High	5	8	5	1	19	N	\$3,546
GBT Room	Moderate	6	7	4	1	18	N	
Influent Screw Pumps - Headspace	Moderate	5	3	5	1	14	N	
Retention Basin	Low to Moderate	1	10	2	1	14	N	
East Plant Primary Scum Well	Moderate	7	1	3	1	12	N	
Equalization Basin	Low to Moderate	1	8	2	1	12	N	
East Plant Primary Tank - Effluent Trough	Moderate to High	3	2	5	1	11	N	
East Plant Flow Splitting Structure	Moderate	3	1	5	1	10	N	
Flow Splitting Structure	Moderate	5	1	3	1	10	N	
New West Plant Primary Tank Effluent Trough	Moderate to High	3	2	3	1	9	N	
							Total	\$5,410

POTENTIAL OFF-SITE ODOR SOURCE	PROPOSED CONTROL ACTIONS	TOTAL CAPITAL COSTS (1,000s)
Manhole at WWTP Entrance on Dixboro Road	Vent pipe with odor control drum	\$10
Overflow Structure at WWTP Entrance Bridge	Vent pipe with odor control drum	\$12
Existing Gravity Thickeners (Future: 2 Blend Tanks and 1 Gravity Thickener)	Cover entire Blend Tanks Cover effluent launders on Gravity Tank Collect air and treat	\$1,842
Scum Concentration Room	Collect air and treat	
Liquid Sludge Holding Tanks	New covers Collect air and treat	
Centrifuge Vent Exhaust Air	Collect air and treat	
Truck Loading Area – Dewatered Sludge Cake	Keep truck doors closed except when trucks are entering or leaving; Install rapid closing doors Collect air and treat	

Public Questions and Feedback

Q. What methods were used to sample the air?

A. We captured one liter air samples from the various sites at the plant and then measured the compounds present using GC/MS analysis. A professional laboratory, specializing in air quality analysis, was employed to perform this task.

Q. Was there any sampling done off-site?

A. No. All sampling has been done at the WWTP. Other possible odor sources in the area, include, but may not be limited to, the Ann Arbor Township sewer vault, the vents at the Ypsilanti lift station to the east near Superior Road and vents from natural gas pipelines.

Q. What has been done to address odors from trucks?

A. This has been taken care of by contacting the contractors and ensuring more thorough cleaning of the trucks on site.

Q. What chemical compounds cause the odors at the Ann Arbor WWTP?

A. There are many types of compounds causing odors. The most common are sulfide, ammonia and volatile organic compounds (VOCs). The recommended odor control process was selected as the most cost effective technology to mitigate the types of compounds identified in the emission sources at the Ann Arbor WWTP.

Q. What health issues are associated with odors?

A. No studies have linked any health issues with odors from wastewater treatment plants. For internal operations, the plant must meet all OSHA standards for exposure to any compounds as well.

Q. What is your level of certainty that your plan deals with the major odors? How likely is it that fixing these will simply unmask more disguised odors later?

A. The sources of odor with highest potential to result in off-site nuisance odors have been correlated with other parameters, such as: volume of exhaust air, proximity to residents and source of chronic odor complaints. Those sources that ranked highest in these combined categories are being recommended for odor containment and treatment. Although other sources have a potential to contribute to off-site odors, these sources are in continuous operation and a correlation between the operation of these sources and off-site nuisance odors is not apparent. Additionally, improvements being made to the WWTP as a whole resulting from the two projects will enhance operations to minimize odorous emissions, even without installation of odor control containment and treatment on these other sources.

Q. Why not simply seal the manholes that emit odors?

A. As flow in the sewer increases and the wastewater level rises in the sewer, the air space above the wastewater decreases and the air must be allowed to vent out of the sewer in order to prevent 'air binding' of the sewer. Conversely, as the flow in the sewer decreases and the wastewater level drops in the sewer, the air space

above the wastewater increases and the air must be allowed to vent into the sewer to maintain normal atmospheric conditions.

Q. What is driving the timeline for implementation?

A. These solutions are all budgeted, but services must be secured using a required bidding process. These implementation dates are conservative estimates of timing.

Q. How reliable are the funds for these odor control efforts?

A. Extremely reliable. All of these funds are included in current capital budgets. If renovations need to be scaled back due to financial issues, odor control aspects of the renovations will not be in the cost reductions. This work is considered essential by the plant staff and by department leadership.

Q. How are bio-solids disposed of?

A. Bio-solids are land applied during the warm weather months. They are hauled to landfills in the winter months. This process is monitored by MDEQ and it is heavily regulated to ensure that health and safety standards are met.

Q. Why doesn't Ann Arbor sell bio-solids as fertilizer like some other plants across the nation?

A. A team made up of city staff, citizens and wastewater treatment consultants looked at these options in 1998 and again in 2002-2003. To be effective with this approach, Ann Arbor needs a storage capacity that exceeds the current site and a reliable market to buy the product. Other communities are facing significant challenges with the variability of the market. This is also an expensive process to implement.

Meeting Feedback

7 households left written feedback on the following issues:

1. This meeting offered me helpful information about the odor control study findings and recommendations.

strongly disagree	disagree	neutral	agree	strongly agree
			2	5

2. This meeting offered me the opportunity to share my ideas, concerns and suggestions.

strongly disagree	disagree	neutral	agree	strongly agree
				7

3. Information I would like to know more about includes:

- Link to emails is great
- I will use email to deal with these two questions if anything comes to mind
- Timing schedule if it changes
- Use of liquid/solid waste from site removal of phosphorous

4. Other ideas or suggestions?

- Thank you – suggest a mid-late 2007 update meeting for the public
- Schedule future public meetings to keep us informed
- Try sampling odors from across the river along the Parker Mill trail to verify that the odors there are ones you expect to eliminate or minimize