

Derek R Guthrie Service Area Odor Control Master Plan

Management Response

As outlined in the Short-Term Action Plan, MSD contracted with AECOM to conduct a study of odors and develop odor control management plans. Phase 2 of this work focused on the Derek R. Guthrie Water Quality Treatment Center (DRGWQTC) and the associated pumping stations and collection system in the southern part of our service territory. Consistent with the prior plan developed for the Morris Forman Water Quality Treatment Center (MFWQTC), AECOM identified potential odor sources, conducted liquid and vapor sampling, evaluated existing odor control systems, and developed recommendations for odor treatment technologies.

Pursuant to the Odor Mitigation Short-Term Action Plan, MSD reviewed AECOM's recommendations outlined in the Derek R. Guthrie Service Area Odor Control Master Plan Final Report (Appendix A) and formulated this response to those recommendations. This response includes a clarification section to improve the understanding and accuracy of the information in the report, a summary of each recommendation with MSD's response, and a list of actions to be prioritized and incorporated in future action plans. MSD is committed to minimizing the impact of sewer related odors on our community and will continue to prioritize our efforts on the areas of most concern.

Clarifications

Clarification #1

The AECOM report states that MSD owns and operates 141 wastewater pumping stations within the Derek R. Guthrie Service Area. This AECOM number includes private owned and out of service pumping stations. At present, MSD owns and operates 37 pumping stations that are *in service* in the Derek R Guthrie service area.

Clarification #2

AECOM conducted sampling of the Derek R. Guthrie Collection System at five manholes (refer to Table 3-2 in AECOM report). According to AECOM, sampling locations were selected based on odor complaints which showed relatively high odor impacts on surrounding neighborhoods. MSD would like to clarify some specifics related to three of these manholes.

- Manhole (MH-105052) is at the Kramer's Lane Interceptor near Vogt Ave. Prior investigations by MSD of odor complaints in this area determined the source to be a nearby landfill.
- Manhole (MH-58837) is the discharge manhole of the Elderberry Ridge Pump Station which is a private facility that is not owned or operated by MSD.
- Manhole (MH-92007) is on the Admiral Way Pump Station Discharge. A project is in design for improvements to the Admiral Way Pump Station which will include an odor control solution.

AECOM's Recommendations / MSD Responses

AECOM's recommendations are summarized in Table 8-1 with the associated section number from the report.

Table 8-1 – Summary of Odor Control Technology Recommendations

#	Location	Recommended Odor Control Technology
Derek R. Guthrie WQTC		
7.1.1	East and West Influent Screening Chambers	Replace existing media Evaluate options for even air flow split across the beds
7.1.2	Grit Facilities	New carbon media Replace unit with one air flow bed
7.1.4	Dewatering Buildings	Install new Biofilter unit Keep roll up garage doors closed as much as possible
Collection System		
7.2.1	Sample ID #5 Force Main	Chemical Injection Unit
7.2.2	Sample ID #1 Interceptor	Negative Pressure Pilot Study
Pump Stations		
7.3.1	Pump Station #2	Multi-layer carbon unit or hydroxyl generator
7.3.2	Pump Station #3	Multi-layer carbon unit or hydroxyl generator

7.1.1 East and West Influent Screen Chambers (DRGWQTC)

AECOM Recommendation: “The recommended approach for the east and west carbon adsorbers is to evaluate options that allow a more even air flow split between the upper and lower beds in order to achieve an even air flow distribution across the beds which will optimize the unit performance.”

MSD Response: MSD will rebalance the flow in the East and West Carbon Absorbers. MSD will also sample each bed of carbon and perform analytical testing to evaluate its effectiveness and replace the carbon if it is underperforming.

7.1.2 Grit Facilities (DRGWQTC)

AECOM Recommendation: “A new replacement unit with one bed should be considered to allow a more even distribution over the media. In addition, the media design should be evaluated to analyze the optimum media type that provides the highest odor removal efficiency. The recommended improvements to the grit removal facilities should be considered a low priority item compared to other recommendations proposed since the unit is already performing above 90% removal efficiency.”

MSD Response: MSD will rebalance the flow in the carbon unit. MSD will also sample each bed of carbon and perform analytical testing to evaluate its effectiveness and replace the carbon if it is underperforming.

7.1.4 Dewatering Buildings (DRGWQTC)

AECOM Recommendation: “In order to treat the odors within the building, a biofilter unit, that is 36’ by 14’ in footprint, is recommended to be installed. Hoods are installed over the two lugger areas, and a total of 4 air intakes per hood are proposed to capture the foul air. In addition, the building should be put under slightly negative pressure, to keep the foul air within the building. The roll up garage doors should also remain closed as much as possible to allow the proposed odor control unit to perform as intended. The HVAC system will need to be evaluated for performance impacts with the roll up garage doors closed.”

MSD Response: MSD will hire a firm to design an odor control system and evaluate current HVAC system for improvements.

7.2.1 Sample ID#5 Force Main (Collections System)

AECOM Recommendation: “Sampling results in the force main showed high odor concentrations. Based on the high odor sampling results, and the odor complaints within the areas, chemical injection is the recommended technology to utilize within this force main. Alternative chemicals could be evaluated to determine which chemical may be more effective at reducing odor levels.”

MSD Response: The sample was taken from the Admiral Way Pump Station Force Main. The Admiral Force Main discharge had relatively low BOD and TSS concentrations, a relatively high odor concentration, but low hydrogen sulfide concentration. A project is in design for the Admiral Way Pump Station that will include odor control technology that is expected to improve odors in the area.

7.2.2 Sample ID #1 Interceptor (Collections System)

AECOM Recommendation: “The Sample ID #1 Interceptor has periods of time where it operates at a positive pressure, which means that odorous air is expelled from the sewer headspace at various manhole points along the pipe system during the positive pressure time periods. A negative pressure unit could be installed at one or more locations along the sewer to keep the pipe running at a negative pressure. Sample ID #1 interceptor is the recommended priority for a negative pressure pilot.”

MSD Response: Sample ID#1 Interceptor is a relatively short interceptor that is located near a landfill on Vogt Avenue. It is not clear that odors reported along this segment of the collection system are attributable to the interceptor. In fact, the hydrogen sulfide reading obtained during sampling conducted by AECOM (Table 3-5) was low at 0.004 ppm. MSD will monitor odors in the area and if high odors are detected from the sewer system, MSD will consider a negative pressure pilot test.

7.3.1 Pump Station #2

AECOM Recommendation: “There are two (2) odor control systems recommended for odor level improvements. It is recommended that either a multi-layer carbon unit or a hydroxyl generator unit could be installed at this facility.”

MSD Response: MSD will continue to monitor for odors and determine further actions to be added to future Action Plans, if necessary.

7.3.2 Pump Station #3

AECOM Recommendation: “There are two (2) odor control systems recommended for odor level improvements. Either a multi-layer carbon unit or a hydroxyl generator are recommended for installation at this facility.”

MSD Response: This is a small lift station that is not tied to a force main. The facility is in the front yard of a customer’s residence and additional equipment would require more yard space and is therefore not advisable. MSD will continue to monitor odor complaints in the area and reevaluate if there is a significant increase. Any decisions to pursue the recommendation will require discussions with the property owner.

7.3.3 Pump Station #1

AECOM Recommendation: “Pump Station #1 was initially evaluated for potential odor control due to the high odor concentrations found during sampling. However, MSD is planning to decommission this pump station within the next five years. Therefore, spending capital cost on a new odor control unit that will be removed from services is not an economical choice. As a result, no odor control facilities are proposed at Pump Station #1.”

MSD Response: MSD planned to decommission this pump station within the next five years. However, plans have changed, and Pump Station #1 will not be eliminated. MSD will evaluate this facility and determine next steps for installing odor control technology.

Summary

The table below summarizes MSD’s planned actions based on the AECOM Derek R. Guthrie Odor Control Master Plan Report (Appendix A). The items listed in the table will be prioritized and incorporated into future Action Plans as deemed appropriate, contingent upon budgetary constraints. MSD will reassess the need for these actions as system improvements are made.

#	Location	Action(s)
7.1.1	East and West Influent Screen Chambers (DRGWQTC)	1. Rebalance the flow in the East and West Carbon Absorbers. 2. Sample each bed of carbon and replace carbon if underperforming.
7.1.2	Grit Facilities (DRGWQTC)	1. Rebalance the flow in the carbon unit. 2. Sample each bed of carbon and replace carbon if underperforming.
7.1.4	Dewatering Building (DRGWQTC)	Hire a firm to design an odor control system and evaluate current HVAC system for improvements.
7.2.1	Sample ID#5 Force Main Chemical Injection (Collection System)	Complete existing project for the Admiral Way Pump Station that will include odor control technology.
7.2.2	Sample ID#1 Interceptor (Collection System)	Continue to monitor odors in the area and explore a negative pressure pilot if high odors are detected from the sewer system.
7.3.1	Pump Station #2	Continue to monitor for odors and determine appropriate actions to be added to future Action Plans, if needed.
7.3.2	Pump Station #3	Continue to monitor odor complaints in the area and discuss with property owner if further action is required.
7.3.3	Pump Station #1	Evaluate facility and determine next steps for installing odor control technology.

