



February 21, 2025

Phillip Grooms, City Manager  
City of Mount Pleasant  
100 Public Square  
Mt. Pleasant, Tennessee 38474

**Subject: WWTP Lagoon Inspections**

Dear Mr. Grooms:

Barge Design Solutions, Inc. (Barge) is pleased to provide this inspection report for the February 13, 2025, inspection of the upper and lower wastewater treatment plant lagoons for the City of Mount Pleasant. The purpose of these inspections was to note visual indications of potential slope instability, excessive seepage, and other factors that may compromise or impair the stability of the wastewater lagoons as well as to observe previous work progress to stabilize slopes and erosion areas. Jason Winningham, P.E., and Ian Varney, E.I.T., of Barge performed the inspections. A trip report with photos, observations, and recommended actions is attached to this letter.

**General Notes**

At the beginning of the inspection, the weather conditions were cloudy with a temperature approximating 30 degrees with a recent rain event of approximately two inches over the previous 24 hours. The vegetative growth along the tops and slopes of the lagoon embankments was mostly grass and shrub growth. Water levels in both lagoons were much lower than during the previous yearly inspections.

**Lower Lagoon**

At the time of the inspection, the water level was observed below the bottom pipe of the three-pump station influent pipes. The pipes were covered in riprap and well maintained. The spray fields were not active during the site inspection; site personnel stated that the spray fields are decommissioned since the completion of the wastewater treatment plant project in September 2024.

The previous inspection noted that vegetation was established around the headwall at the influent pipe to the lower lagoon near the southwest corner. The area has been improved by the installation of riprap around the headwall to prevent erosion.

Continued pest control to address burrowing animals is required to reduce the borrow population at the lagoon as well as address beaver activity adjacent to the lagoon to prevent stormwater runoff into the lagoon. These burrowing animals can puncture the lagoon, leading to the City's wastewater

leaking from containment.

Small trees and woody vegetation on the berm embankments were recommended to be removed with minimal root ball disturbance during the previous inspection. Vegetation growth on the banks will compromise the lagoon bank stability due to the plant's roots growth. Site personnel has removed all trees from the bank of the lagoon, stopping at the southern tree line as requested by the previous inspection by the Tennessee Department of Environment and Conservation.

Examples of these findings are shown in the photographs. Please note that due to the number of observations, the photographs do not include every instance of these findings.

### **Upper Lagoon**

Riprap placed along the upper lagoon's northern embankment appears to be in good condition. Completion of the fence along this improved area is recommended. The fence will keep larger nuisance animals and trespassers out of the lagoon area.

The upper lagoon was observed to be stabilized and sloped to prevent ponding or channelized flow that could erode the slopes. Continued pest control to address burrowing animals is required to reduce the borrow population at the lagoon. Small trees on the berm embankments should be removed with minimal root ball disturbance. Trees and vegetation along the eastern bank outside the fence have been cut back since the previous inspection.

A hole under the fence from animal activities and stormwater was observed by the fence in the northeastern berm in the previous inspection. This area was stabilized with riprap and in good condition during this inspection.

### **Recommendations**

#### *Lower Lagoon*

The following recommendations are based on our observations at the lower lagoon:

- Continue pest control of burrowing animals.

#### *Upper Lagoon*

The following recommendations are based on our observations at the upper lagoon:

- Continue pest control of burrowing animals.
- Complete the northern fencing.

We appreciate your allowing Barge to work on this project; please feel free to reach out to Ian Varney at 615-252-4348 or [ian.varney@bargedesign.com](mailto:ian.varney@bargedesign.com) with any questions or concerns.

Sincerely,

**Barge Design Solutions, Inc.**



Ian Varney, E.I.T.



Jason Winningham, P.E.

Attachments

Photo Log

Trip Report



**Description:**

Photograph: 1

Lower Lagoon – outlet  
pipes leading to pump  
station



**Description:**

Photograph: 2

Lower lagoon – View of  
northeastern berm.  
Woody vegetation on the  
berm has been removed.



**Description:**

Photograph: 3

Lower Lagoon – View of northern berm from the west. Woody vegetation on the berm has been removed.



**Description:**

Photograph: 4

Lower lagoon – Northern site access road and stable northern slope. Water was observed on the entrance road from rainfall the past 24 hours.



**Description:**

Photograph: 5

Lower Lagoon – Evidence of animal activity such as burrowing was observed intermittently along the west berm of the lower lagoon.

It is recommended to remove burrows and stabilize these areas.



**Description:**

Photograph: 6

Lower Lagoon – inflow structure.

Erosion was previously observed around the headwall. This area has been repaired with riprap.



**Description:**

Photograph: 7

Lower Lagoon – View of the south side berm and fence line. The south end of the pond remains wooded.



**Description:**

Photograph: 8

Lower Lagoon – View of east berm.





**Description:**

Photograph: 9

Upper Lagoon – View of east berm.



**Description:**

Photograph: 10

Upper lagoon – Old aerator pipe in the southeastern portion of the site. The aerator is not in use.



**Description:**

Photograph: 11

Upper lagoon – Inlet pipe in the southeastern portion of the upper lagoon.

Solids and scum were observed on the surface.

Sewage odor was observed in this area.



**Description:**

Photograph: 12

Upper Lagoon – Southwest corner of the upper lagoon berm.



**Description:**

Photograph: 13

Upper Lagoon – Evidence of animal activity such as burrowing was observed along the south berm of the lower lagoon.

It is recommended to remove burrows and stabilize these areas.



**Description:**

Photograph: 14

Upper Lagoon – View of western berm and access road off of Hoover Mason Road.



**Description:**

Photograph: 15

Upper Lagoon - North side of upper lagoon, facing west.



**Description:**

Photograph: 16

Upper Lagoon – Lagoon outfall pipe.



**Description:**

Photograph: 17

Upper Lagoon - Slope from north side of upper lagoon, facing northwest.

Fence is incomplete. It is recommended to finish the installation of the fence.



**Description:**

Photograph: 18

Upper Lagoon – Northern slope of the berm.



**Description:**

Photograph: 19

Upper Lagoon –  
Northwest corner of the  
berm.



**Description:**

Photograph: 20

Upper Lagoon –  
Northeast corner. Storm  
water from overnight  
rainfall collected at this  
location.



**Description:**

Photograph: 21

Erosion observed at the fence in northeast berm due to animal activity.

The berm and fence has been stabilized.



**Description:**

Photograph: 22

Upper Lagoon – View of pump station.



<b>Site Visit Report</b>		BARGE PROJECT NO.	PAGE NO.1 OF 1
		<b>3480864</b>	DATE: <b>02/13/2025</b>
PROJECT I.D. <b>Wastewater Upper/Lower Lagoon Inspections</b>	LOCATION OR ADDRESS <b>Hoover Mason Rd Mt. Pleasant, TN 38474</b>		DAY OF THE WEEK <b>Thursday</b>
OWNER: <b>Mt. Pleasant, TN</b>		WEATHER <b>Cloudy</b>	TEMP (°F) <b>40s</b>
CLIENT: <b>Mt. Pleasant</b>		CLIENT REPRESENTATIVE <b>Keith Odom</b>	
CONSULTANT <b>Barge Design Solutions</b>		SUPERVISOR <b>Keith Odom</b>	
CONSULTANTS REPRESENTATIVE(S) <b>Jason Winningham/Ian Varney</b>		FIELD REPRESENTATIVE	
PURPOSE OF SITE VISIT <b>Perform Inspection of the Upper and Lower Wastewater Lagoon Containment Berms</b>			
<p>SUMMARY OF OBSERVATIONS</p> <p>Ian Varney and Jason Winningham representing Barge Design Solutions traversed the entire perimeter of the berm that contains the Mt. Pleasant Public Works Lower and Upper Lagoon on Thursday, February, 2025. Based upon visual observations made during the site inspection it was determined that lagoons containment berm was currently in a stable condition. However, several areas of concern were identified. See the attached site map where findings are indicated and attached photos with summary of findings.</p>			
<p>RECOMMENDATIONS</p> <p>See attached photos for recommendations.</p>			
<p>SITE DEMOGRAPHIC</p> <p>See attached site photo map for the lagoon location/orientation.  Area of the Lower Wastewater Lagoon - ~21.7 acres  Area of the Upper Wastewater Lagoon - ~59 acres</p>			