

**THE UNIVERSITY OF MICHIGAN
MUNICIPAL STORM SEWER NPDES PERMIT MI0053902
1999 MID YEAR REPORT**

In accordance with Part III, paragraph C-2 of NPDES Permit MI0053902, the University of Michigan is required to submit a mid year report of activities associated with the storm water system program. This program is a requirement of the NPDES permit issued by the Michigan Department of Environmental Quality Surface Water Quality Division on December 19, 1995. This report covers the period July 1, 1998 through December 31, 1998 and follows the format identified in the permit.

1. *Provide a brief summary of the implementation status of the plans for the elimination of illicit discharges, public education, and storm water pollution prevention.*

The University has undertaken several items in the management of storm water runoff and pollution prevention.

- An on-going survey of University owned/managed facilities is being performed by the Department of Occupational Safety and Environmental Health (OSEH) in an effort to identify discharge points into the storm and sanitary systems. The original facility survey was completed in October 1997, and the efforts were turned to actual sampling of discharge points from the facilities. The work has concentrated on the sanitary system sampling. Only one major concern was identified to date in this survey effort – the G.G. Brown Building. Refer to Paragraph 2 below for a description of that concern.
- According to the Storm Water Program submitted to MDEQ, the University is divided into 4 distinct areas based on geographical separation - South Campus, Central Campus, Medical Campus, and North Campus. Dry weather screening was completed during this period on the Central Campus. Four suspect flows were identified during the survey. Two of the flows originate from out of doors decorative fountains. The other two area being investigated further. Once the follow-up investigation is completed, we will take appropriate action to remediate the situation. A copy of the report of the screening program for Central Campus is attached.
- Education programs reported in the last annual report are continuing. The OSEH department established a project with the School of Natural Resources and Environment (SNRE) to develop a formal education effort addressed at faculty, staff, students and visitors to the campus. Brochures and a master plan for the education effort were prepared and are being distributed through various modes on campus. Copies of the documents are attached. The next phase of the education effort is in the planning stages with SNRE.
- A major initiative was started in November to evaluate the storm water system of the University. The study being conducted by CH2M Hill under contract to OSEH is performing several tasks including: 1) an aerial survey and digitized maps topographic maps to a 1 foot contour interval, 2) verification of invert elevations on catch basins and manholes, 3) modeling of runoff patterns across campus and through the storm drain system to evaluate capacity, and 4) preparation of a report. The report will provide recommendations for both short term and long term solutions to controlling storm water runoff and flooding of campus buildings. It is anticipated the study will be completed by summer 1999 and should provide a good planning tool for future improvement to the storm water management program.

2. *Provide a report of illicit discharges and illicit connections removed, and schedules for illicit connections and their associated discharges yet to be removed.*

G.G. Brown Building: One “illicit connection” was identified in the August 1997 annual report that could not be corrected immediately. During the sewer system survey discussed in paragraph 1 above, a potential cross connection was identified at the G.G. Brown building on North Campus. Investigation of the building identified the following information:

- The structure was originally designed in the mid-1950s as a hydraulic engineering laboratory. The operations in the building used a considerable amount of water for hydraulic design studies, including large water tanks to study wave and seismic activity. The water was considered potable and no additives were involved. The drainage from the operations was connected to the storm water system. The only connections to sanitary sewer in the building were for the bathrooms.
- The building use has changed over the years and other activities now use the laboratory space. The majority of the structure has been converted to classroom and office space. Discharges from the building now include some contact and non-contact cooling water, hand-washing activity, and some sediment from suspended solid filtration design, soils, and concrete design laboratories.
- Dye testing initially performed in 1997 identified a potential concern over the main connections from the building to the storm water system rather than the sanitary sewer. An investigation performed by the U-M Facilities Planning & Design mechanical engineer initially confirmed this based on building drawings. Additional dye testing showed the drawings were not updated through all the construction periods.
- In actuality, only the sinks in five rooms in the building were cross-connected. Floor drains in various areas of the building were cross-connected, but were typically not being used.
- Based on the investigation efforts, a project was initiated through Facilities Planning & Design to rework the plumbing systems in the five rooms. The project was completed fall of 1998. A report of the work completed is attached.

North Campus Recreation Building: During the evening of October 9 an incident apparently began when a strong chlorine odor and small fish kill in Traver Creek was reported to the MDEQ PEAS hotline. The Ann Arbor Fire Department responded on the initial call and confirmed the presence of a strong chlorine odor and a small quantity of dead fish. They also reported a cloudy coloration to the stream water. An incident report was provided to Mr. Torongo, MDEQ on October 16 detailing the investigation and corrective actions.

- Results of the investigation confirm a cross-connection of the pool discharge sump pit to the storm water system at the North Campus Recreation Building (NCRB). It appears that the cleaning solution used on the pool deck was probably the source of the chlorine in the discharge water rather than the swimming pool itself. There does not appear to be any way the pool water could have resulted in the concentrations measured in the catch basin on the northeast corner of the NCRB.
- The first step to remediate the situation was to have a contractor pump out the catch basin on the northeast corner of NCRB and dispose of the water properly. This removed the apparent source that was still present in the storm water system and discharge at Outfall O-28 into Traver Creek.
- The second step taken to prevent further reoccurrence was to stop discharging chlorinated water from the sump pit to the storm water system. The following actions have been put into place:
 - a. The sump pumps from the pit have been shut down so that no discharge can occur while an operator is not present.
 - b. The discharge pipe from the sump pit to the catch basin on the west side of the building has been plugged with a rubber bladder plug to prevent the backflow of

storm water into the sump pit during periods of heavy rain. This increased the holding capacity of the sump pit.

- c. When a discharge of pool related water would be necessary, one of the two following actions will be taken to prevent discharge of chlorinated water to the storm water system.
 - ◇ The outflow from the catch basin on the northeast corner of NCRB will be plugged with a rubber bladder plug. The sump pit will be pumped to the catch basin using the existing sump pump system. A contractor will be called to remove the water from the catch basin for proper disposal.
 - ◇ The water in the sump pit will be tested for chlorine. If chlorine is present in the water, it will be dechlorinated using thiosulfate solution. Once the chlorine in the water is below detectable concentrations, the water will be discharged in accordance with Part I, Paragraph A3q of the above referenced NPDES permit, which authorizes “dechlorinated swimming pool discharges” to the University storm water system.
- The third step in resolving this issue will be to determine a permanent solution to the discharge issue. This is being designed by the Plant Extension office of the University to reconnect the routine discharge of water from the sump pit to the sanitary sewer system. This should eliminate the need to dechlorinate the small quantity of water generated on a daily basis. A bypass valve to the storm water system will probably be needed in the event the entire pool required draining for maintenance. This would be a non-routine operation and at that point the pool water would be dechlorinated to non-detectable concentrations, and will be discharged in accordance with Part I, Paragraph A3q of the above referenced NPDES permit, which authorizes “dechlorinated swimming pool discharges” to the University storm water system.
- The final date to put in a permanent solution will probably be spring 1999. The status will be reported in the next Annual report.

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