

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
MARCH 2017

STAFF REPORT

ROUGE RIVER CONTINUOUS MONITORING DISSOLVED OXYGEN STUDY
IN AREAS UPSTREAM OF SEPARATED COMBINED SEWER OVERFLOWS
WAYNE AND OAKLAND COUNTIES
JUNE-AUGUST 2015

INTRODUCTION

The Rouge River is currently listed on the Michigan Department of Environmental Quality's (MDEQ) 2014 Section 303(d) list (Goodwin et al., 2014) for nonattainment of the minimum warmwater dissolved oxygen (DO) water quality standard (WQS) of 5.0 milligrams per liter (mg/l) during wet-weather events and/or critical periods during the summer months.

Past studies have shown sharp DO depressions due to easily oxidizable material discharged through Combined Sewer Overflows (CSO). The MDEQ contracted with LimnoTech to conduct in-stream DO monitoring from June 23 to August 26, 2015, at eight continuous monitoring sites (Table 1; Figure 1). The purpose of the monitoring was to determine whether the minimum DO WQS were met during significant wet-weather events near the segments where separations of CSOs had been completed.

The MDEQ selected monitoring sites (Figure 1) based on where the CSO controls (detention basins) were located, and therefore were most likely attaining the 5.0 mg/l DO WQS.

Table 1. Location of eight monitoring sites for the June-August 2015 DO study.

Site	Road	Location	Latitude	Longitude
1	Hannan Road	Lower Branch of Rouge River	42.2842	-83.4273
2	Henry Ruff Road	Lower Branch of Rouge River	42.2905	-83.3388
3	Inkster Road	Middle Branch of Rouge River	42.3485	-83.3123
4	Haggerty Road	Middle Branch of Rough River	42.3717	-83.4455
5	Power Road	Upper Branch of Rouge River (by Farmington Hills)	42.4617	-83.3667
6	Beech Road	Main Branch of Rouge River	42.4479	-83.2977
7	Maple Road	Main Branch of Rouge River (by Birmingham)	42.5455	-83.2248
8	Wattles Road	Main Branch of Rouge River (by Bloomfield Hills)	42.5761	-83.2003

REFERENCES

Goodwin, K., S. Noffke, and J. Smith. 2014. Water Quality and Pollution Control in Michigan 2014 Sections 303(d), 305(b), and 314 Integrated Report. DEQ Staff Report #MI/DEQ/WRD-14/001.

MDEQ. 1994. Continuous Dissolved Oxygen Monitoring of the Rouge River at Greenfield Road (September 14-October 10, 1994), Wayne County. MDEQ Staff Report #MI/DEQ/SWQ-97/022.

Wayne County. 2013. Rouge River National Wet Weather Demonstration Project. 2013 Rouge River Progress Report. <http://www.waynecounty.com/doe/rouge/index.htm>.

Appendix D. Precipitation Data Collected from the U.S. Geological Survey Gage 422239083032401.

Date	Rain Event (inches)	
6/30/2015	0.22	0.22 ^P
7/1/2015	0.01	0.01 ^P
7/2/2015	0.00	0.00 ^P
7/3/2015	0.00	0.00 ^P
7/4/2015	0.00	0.00 ^P
7/5/2015	0.00	0.00 ^P
7/6/2015	0.00	0.00 ^P
7/7/2015	0.15	0.15 ^P
7/8/2015	0.00	0.00 ^P
7/9/2015	0.45	0.45 ^P
7/10/2015	0.00	0.00 ^P
7/11/2015	0.00	0.00 ^P
7/12/2015	0.00	0.00 ^P
7/13/2015	0.00	0.00 ^P
7/14/2015	0.25	0.25 ^P
7/15/2015	0.00	0.00 ^P
7/16/2015	0.00	0.00 ^P
7/17/2015	0.32	0.32 ^P
7/18/2015	0.00	0.01 ^P
7/19/2015	0.00	0.00 ^P
7/20/2015	0.00	0.00 ^P
7/21/2015	0.00	0.00 ^P
7/22/2015	0.00	0.00 ^P
7/23/2015	0.00	0.00 ^P
7/24/2015	0.00	0.00 ^P
7/25/2015	0.34	0.34 ^P
7/26/2015	0.00	0.00 ^P
7/27/2015	0.00	0.00 ^P
7/28/2015	0.00	0.00 ^P
7/29/2015	0.25	0.25 ^P
7/30/2015	0.00	0.00 ^P
7/31/2015	0.00	0.00 ^P
8/1/2015	0.00	0.00 ^P
8/2/2015	0.89	0.89 ^P
8/3/2015	0.37	0.37 ^P
8/4/2015	0.00	0.00 ^P
8/5/2015	0.00	0.00 ^P
8/6/2015	0.00	0.00 ^P
8/7/2015	0.00	0.00 ^P
8/8/2015	0.05	0.05 ^P
8/9/2015	0.00	0.00 ^P

Appendix D. Precipitation Data Collected from the U.S. Geological Survey Gage 422239083032401.

Date	Rain Event (inches)	
8/10/2015	0.36	0.36 ^P
8/11/2015	0.00	0.00 ^P
8/12/2015	0.00	0.00 ^P
8/13/2015	0.00	0.00 ^P
8/14/2015	0.01	0.01 ^P
8/15/2015	0.00	0.00 ^P
8/16/2015	0.00	0.00 ^P
8/17/2015	0.00	0.00 ^P
8/18/2015	0.01	0.01 ^P
8/19/2015	0.60	0.60 ^P
8/20/2015	0.87	0.87 ^P
8/21/2015	0.00	0.00 ^P
8/22/2015	0.00	0.00 ^P
8/23/2015	0.59	0.59 ^P
8/24/2015	0.00	0.00 ^P
8/25/2015	0.02	0.02 ^P
8/26/2015	0.00	0.00 ^P

Appendix E. CSO Retention Basins.

CSO Retention Basin	Latitude	Longitude
Birmingham CSO RTB	42.539444	-83.227777
Bloomfield Hills CSO RTB	42.531666	-83.24306
Hubbell-Southfield RTB	42.30806	-83.20667
Puritan/Fenkell CSO RTB	42.39972	-83.27194
Seven Mile CSO RTB	42.42889	-83.26917
Oakwood RTB	42.283611	-83.141944
Inkster-Dearborn Hts CSO RTB	42.300833	-83.295833
Oakland Co-Acacia Park	42.521944	-83.246666
River Rouge CSO RTB	42.28056	-83.12944
Baby Creek Screening and Disinfection Facility	42.28417	-83.12806
Wayn Co/Inkster CSO RTB (MI0051471) - West	42.296979	-83.310093
Wayn Co/Inkster CSO RTB (MI0051471) - East	42.296067	-83.308444
Dearborn CSO (MI0025542)	42.30444	-83.16028
Wayne Co/Dearborn Heights CSO RTB (MI0051489)	42.34388	-83.273055
Dearborn CSO 006 (MI0025542)	42.30389	-83.26333
Dearborn CSO 008 (MI0025542)	42.30778	-83.25722
Wayne Co/RDFrd/Livonia CSO RTB (MI0051535)	42.40538	-83.295