UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GREAT LAKES NATIONAL PROGRAM OFFICE
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Teresa Seidel, Director
Water Resources Division
Michigan Department of Environment, Great Lakes, and Energy
525 W Allegan St.
P.O. Box 30028
Lansing, MI 48909-7528

Dear Ms. Seidel:

Thank you for your September 17, 2020 request to remove the *"Degradation of Aesthetics"* Beneficial Use Impairment (BUI) at the Clinton River Area of Concern (AOC), located in southeastern Michigan. As you know, we share your desire to restore all the Great Lakes AOCs and to formally delist them. Based upon a review of your submittal and supporting data, the U.S. Environmental Protection Agency (EPA) hereby approves your request to remove this first BUI from the Clinton River AOC. EPA will notify the International Joint Commission of this significant positive environmental change at this AOC.

We congratulate you and your staff as well as the many federal, state, and local partners who have been instrumental in achieving this environmental improvement. Removal of this BUI will benefit not only the people who live and work in the AOC, but all the residents of Michigan and the Great Lakes basin as well.

We look forward to the continuation of this productive relationship with your agency and the Clinton River Public Advisory Council as we work together to delist this AOC in the years to come. If you have any further questions, please contact me at (312) 353-8320 or your staff can contact Leah Medley at (312) 886-1307.

Sincerely,

CHRISTOPHER KORLESKI Digitally signed by CHRISTOPHER KORLESKI
Date: 2020.09.21 10:16:34 -05'00'

Chris Korleski, Director
Great Lakes National Program Office

cc: Phil Argiroff, EGLE
Mike Alexander, EGLE
Richard Hobrla, EGLE
Jen Tewkesbury, EGLE
Raj Bejankiwar, IJC

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

September 17, 2020

VIA EMAIL

Mr. Chris Korleski, Director
Great Lakes National Program Office
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (G-9J)
Chicago, Illinois 60604-3507

Dear Mr. Korleski:

The purpose of this letter is to request the United States Environmental Protection Agency (USEPA), Great Lakes National Program Office's (GLNPO) concurrence with the removal of the Degradation of Aesthetics Beneficial Use Impairment (BUI) from the Clinton River Area of Concern (AOC). The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), has assessed the status of this BUI in accordance with the state's *Guidance for Delisting Michigan's Great Lakes Areas of Concern*, and recommends that the BUI be removed from the list of impairments in the Clinton River AOC.

Attached please find documentation to support this recommendation, including the BUI removal briefing paper prepared by WRD's technical staff. The Clinton River Public Advisory Council passed a motion supporting this recommendation on October 25, 2018.

We value our continuing partnership in the AOC Program and look forward to working with the GLNPO in the removal of BUIs and the delisting of AOCs. If you would like further information concerning this request for the Clinton River AOC, please contact Ms. Jen Tewkesbury, AOC Coordinator, Great Lakes Management Unit, Water Resources Division, at 517-897-3257; TewkesburyJ@Michigan.gov; or EGLE, P.O. Box 30458, Lansing, Michigan 48909-7958; or you may contact me.

Sincerely,

Teresa Seidel

Teresa Seidel, Director
Water Resources Division
517-284-5470

Attachment
cc/att: Dr. Marc Tuchman, USEPA
Dr. Amy Pelka, USEPA
Ms. Leah Medley, USEPA
Mr. Susan Virgilio, USEPA
Mr. Phil Argiroff, EGLE
Mr. Mike Alexander, EGLE
Mr. Richard Hobrla, EGLE
Ms. Jen Tewkesbury, EGLE

Removal Recommendation
Degradation of Aesthetics Beneficial Use Impairment
Clinton River Area of Concern

Issue

Based on the results of the 2011 Statewide Assessment of the Degradation of Aesthetics Beneficial Use Impairment (BUI) by the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) Areas of Concern (AOC) Program and completion of the resulting construction activities, EGLE requests concurrence with its recommendation to remove the Degradation of Aesthetics BUI from the Clinton River AOC. This request is made in accordance with the process and criteria set forth in the *Guidance for Delisting Michigan's Great Lakes Areas of Concern* (Guidance) (MDEQ, 2015).

Background

Degradation of Aesthetics was originally identified as an impaired use due to widespread erosion, in-stream sedimentation, localized algal blooms, habitat degradation, and litter throughout the watershed (MDEQ, 2011). In addition, studies conducted in the Clinton River during the 1970s documented poor water quality due in part to high turbidity, high suspended solids, and total phosphorus loadings (MDNR, 1988). In the 1990s the State of Michigan began the implementation of the National Pollution Discharge Elimination System regulatory program to address storm water runoff from municipal separate storm sewer systems, industrial sites, and construction sites. The success of this program has led to significant improvements in water quality throughout the Clinton River watershed. These improvements include reduction of in-stream sedimentation and fewer localized algal blooms. In addition to these efforts, local stakeholders have made significant progress in addressing litter and illegal dumping into the river. Finally, there have been numerous habitat restoration and streambank stabilization projects completed throughout the watershed with funding support from various state and federal programs.

Removal Criteria

According to the Guidance, this BUI will be considered restored when monitoring data for two successive monitoring cycles indicate that water bodies in the AOC do not have any of the following physical properties in unnatural quantities that interfere with any designated use:

- turbidity
- foams
- color
- settleable solids
- oil films
- suspended solids
- floating solids
- deposits

For the purposes of this criterion, these eight properties impair aesthetic values if they are unnatural – meaning those that are manmade (e.g., garbage, sewage), or natural properties that are exacerbated by human-induced activities (e.g., excessive algae growth from high nutrient loading). Persistent, high levels are those defined as long enough in duration, or elevated to the point of being injurious, to any designated use listed under Rule 323.1100 of the Michigan Water Quality Standards. Natural physical features that occur in normal ecological cycles (e.g., logjams/woody debris, rooted aquatic plants) are not considered impairments, and in fact serve a valuable ecological role in providing fish and wildlife habitat.

2011 Aesthetics Monitoring

Two cycles of assessments were conducted in 2011, in accordance with the Statewide Aesthetics Assessment Workplan and Monitoring Protocol (MDEQ, 2011). The results have been outlined in the MDEQ's AOC Program Statewide Aesthetics Assessment Findings for Impaired AOCs (Appendix A). Each of the Clinton River monitoring sites was assessed as follows.

The date, time, Global Positioning System coordinates, weather conditions, and water temperature were recorded at each monitoring site. Three water samples were collected in glass jars from below the water surface to assess water color, clarity, and turbidity. All three sample jars were photographed together against a white backdrop. Any odors from the sample jars, visible debris, and obvious pollution (if any) in the river were recorded. Digital photographs were taken along the shoreline to the left, to the right, straight across, and directly into the water, along with any other condition, debris, etc., worthy of recording. Evidence of recreational activity such as empty bait containers or people swimming was noted along with any other observable conditions that may influence the decision as to the presence of a designated use impairment or a designated use being employed. Based on the total of those observations, each site was assessed as to whether it met the criteria for removing the Degradation of Aesthetics BUI.

At each monitoring location, a minimum of five photographs were taken and are available upon request, as are the individual monitoring data sheets completed at each site. Specific monitoring locations were chosen based on historical Remedial Action Plan documents, input received from the Clinton River Public Advisory Council (CRPAC), best professional judgment and personal knowledge of EGLE's AOC coordinator, and physical access to the water body.

Aesthetics Monitoring Results and Analysis

During the first round of monitoring conducted in July 2011, the following sites were assessed:

- Bear Creek
- Clinton River at Budd Park
- Clinton River Spillway
- East Pond Creek
- Clinton River at Riverside Park
- Red Run Drain
- Clinton River at Mount Clemens
- Clinton River North Branch
- Paint Creek
- Clinton River at Heritage Park

Figure 1: Clinton River Aesthetics Monitoring Locations

None of the sites assessed showed evidence of degradation of aesthetics as an impaired use. However, prior to the second round of monitoring, the AOC Coordinator was informed of a site of potential issue located at the St. Lawrence Cemetery on the banks of the Clinton River in Shelby Township (Figure 2) and the site was added for assessment.


Figure 2: St. Lawrence Cemetery Site Boundary

During the second round of monitoring in November 2011, none of the previous ten sites again showed evidence of degradation of aesthetics as an impaired use. However, the St. Lawrence Cemetery site revealed the following:

- Excessive erosion of the riverbank cutting into a historical landfill/dump
- Solid waste and trash in the river
- Discolored water seeping from the riverbank

Conditions of the site were recorded (Appendix B) and photographs were taken by EGLE staff (Figures 3 and 4).


Figure 3: St. Lawrence Cemetery Riverbank Erosion and Trash


Figure 4: St. Lawrence Cemetery Riverbank Discolored Water Seep

St. Lawrence Cemetery/Landfill Site Investigations

A historical review of the St. Lawrence Cemetery/Landfill (SLCL) site, in conjunction with EGLE's Remediation and Redevelopment Division staff, found past use as a nonregulated household waste dump dating back to the 1970s. There are several similar sites along the Clinton River that were created prior to regulatory standards for disposal of solid wastes. The SLCL site has been exposed to extreme erosion conditions due to the hydrology of the river, especially during high flows, which are

frequent after large rain events. Due to the historical nature of the site, it does not fall under any EGLE regulations that would require cleanup or remediation by a responsible party. In addition, a water sample collected on September 1, 2011, and analyzed by EGLE found elevated copper and mercury levels but nothing else that would reasonably exceed water quality standards and require enforcement action.

The United States Environmental Protection Agency (USEPA), Region 5, Emergency Response Branch #1 was contacted for an assessment of potential emergency remedial response. In 2014 the USEPA conducted both surface and subsurface soil investigations. Analytical data from the samples found arsenic levels to be below USEPA Removal Management Levels (RML) and lead levels to be slightly above RMLs. Ultimately, based on the lack of accessibility to the site and the low potential for long-term human exposures, it was recommended that the lead RMLs not be used to justify emergency remediation of the site. It was, however, recommended that stabilization of the riverbank be implemented so as not to further exacerbate the site conditions and exposure of landfill debris.

In 2015 the USEPA, Great Lakes National Program Office, entered into an Interagency Agreement with the United States Army Corps of Engineers (USACE) to design and construct a project to address the aesthetic impairments at the SLCL. In a collaborative effort between the USEPA, USACE, EGLE, and the St. Lawrence Church, a project was designed that included removing the exposed landfill debris from the site and in the river, pulling back the failing banks to a more stable grade, properly covering the site with the appropriate soils, and stabilizing the banks with rock and vegetation.

Construction of the project began in spring 2017 and was completed in fall 2017. Site visits were conducted by EGLE staff throughout the project construction and postconstruction (Figures 5 and 6). Based on these visits, it was determined by EGLE staff that the site had been properly addressed to eliminate the issue of debris falling into the river. EGLE staff were also satisfied that the stabilization of the riverbank had addressed the storm water runoff that lead to discoloration in the river. The USACE has provided postconstruction monitoring for two years. The site will continuously be observed by the Clinton River Watershed Council as part of their regular watershed activities.

Figure 5: St. Lawrence Cemetery/Landfill Completed Site – Upstream

Figure 6: St. Lawrence Cemetery/Landfill Completed Site - Downstream

Recommendation

Based on site visits and photograph documentation conducted by EGLE staff at the completed SLCL site and the lack of other sites showing degradation of aesthetics as an impaired use, EGLE recommends removal of the Degradation of Aesthetics BUI from the Clinton River AOC. The CRPAC discussed the issue in detail at their March 15, 2018, meeting and visited the completed site on September 13, 2018. During the September 13, 2018, meeting, the CRPAC members voted to support removal of the BUI. The CRPAC submitted a letter dated October 25, 2018, expressing support for this action (Appendix C).

This proposed action was public noticed for 30 days via various media outlets. Supporting documents were posted on EGLE's AOC Program web page for public review and comment from May 1, 2020, through June 1, 2020. No written comments were received during the public notice period.

Prepared by: Jennifer Tewkesbury, AOC Coordinator
Area of Concern Program
Water Resources Division
Department of Environment, Great Lakes, and Energy
September 17, 2020

Appendices

Appendix A: MDEQ Clinton River AOC Aesthetics BUI Assessment Data Sheets

Appendix B: MDEQ 2011 Statewide Aesthetics Assessment Findings for Impaired AOCs

Appendix C: CRPAC's letter supporting BUI removal, October 25, 2018

References

Michigan Department of Environmental Quality (MDEQ). 2011. Stage 2 Remedial Action Plan Clinton River Area of Concern. Available at: https://www.epa.gov/sites/production/files/2015-08/documents/clinton-river-stage-2-rap-20111001_.pdf

Michigan Department of Environmental Quality. 2011. Statewide Aesthetics Assessment Workplan and Monitoring Protocol.

Michigan Department of Environmental Quality. 2015. Guidance for Delisting Michigan's Great Lakes Areas of Concern. Available at: https://www.michigan.gov/documents/egle/wrd-aoc-delisting-guidance_665180_7.pdf.

Michigan Department of Natural Resources (MDNR). 1988. Remedial Action Plan for the Clinton River. Available at: https://www.epa.gov/sites/production/files/2015-08/documents/1988_clinton_river_rap.pdf

Appendix A

Site #11

Aesthetics Monitoring Data Sheet

Date: 11/16/11 Area of Concern & Site Description St. Lawrence Cemetery Clinton
Time: 3:00 G.P.S. Coordinates
Crew: JT, KG, JR Water Temp: 48°
Weather: Rain Today ☐ Clear ☑ Windy ☐
Rain Yesterday ☑ Cloudy ☐ Approx Air Temp 50°
Other Comments:

Waysi de #65

WATER CLARITY (pick one)
Clear ☑
Slightly Turbid ☐
Moderately Turbid ☐
Highly Turbid ☐
Opaque ☐

WATER COLOR (pick one color and one qualifier)
Clear ☑ Brown ☐ Green ☐ Yellow ☐
Grey ☐ Black ☐ Milky/White ☐ Other:
Light ☐ Medium ☐ Dark ☐

retro odors

ODOR
None/Natural ☐
Musty:
Faint ☐ Strong ☐ None ☑
Sewage/Fishy:
Faint ☐ Strong ☐ None ☑
Anaerobic/Septic:
Faint ☐ Strong ☐ None ☑

VISIBLE DEBRIS/OBVIOUS POLLUTION
None ☐ Natural ☐ (leaves,limbs,weeds)
Foam ☑ Oil Film ☑ None ☐
Trash:
Floating ☐ Fixed ☑ None ☐
Solids:
Floating ☐ Fixed ☑ None ☐
Floating Scum ☐ None ☐
Deposits: Biofilms
Describe

sheen films foam

ADDITIONALCOMMENTS/OBSERVATIONS: Trash 6-8 ft of trash layers, visible leachate discharging to river from trash

1) Does this AOC have local delisting criteria? No If so, how does it differ from the state criteria?

2) Are there any designated uses** that may be impaired in your judgment due to aesthetic conditions? YES If so, which one(s)? BODY CONTACT, FISHERY, WILDLIFE

3) The impairment(s) may be specifically due to which of the following "physical properties in unnatural quantities?" [circle all that apply: turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, deposits]

4) Are these conditions "persistent, high levels" or temporary & transient? PERSISTENT, HIGH LEVELS

5) Does this site meet the applicable delisting criteria? No

6) Please make any other notes that are relevant to the answer in #5: THIS IS A FORMER LANDFILL. THE BANKS ARE ERODING A WALL OF TRASH INTO THE RIVER. TERRIBLE SMELLS AND MULTI-COLORED LEACHATE MAKING IT'S WAY INTO THE RIVER.

**Designated uses are as follows:
- agriculture - navigation - industrial water supply - public water supply at the point of water intake - warmwater fishery - other indigenous aquatic life and wildlife - partial body contact recreation - total body contact recreation between 5/1 and 10/1 - coldwater fishery, depending on location

Aesthetics Monitoring Photo Log

A note should be made for each photo, indicating the exact subject of the photo and the reason for taking it. The note should include any contextual information that will help make the photo more useful in the future. If the photo is intended to demonstrate the existence or the absence of a particular condition, the note should explicitly state this. There should be a minimum of 5 photos taken at each site: upstream, downstream (or left and right), directly in front of the monitoring location, straight down into the water, and the three sample jars with white backdrop, plus any other items of interest.

An example photo log entry might read as follows: "Photo DG00547371 – Subject of photo is near shore water, approx two feet deep. Photo is intended to show milky white turbidity at the site, with variable opacity. Note the mostly buried car tire in the lower left corner." Be sure to note the name assigned to each photo's electronic file, whether automatically by the camera or if renamed by monitoring staff afterwards. Be sure to note the ultimate electronic storage location for this set of photos after monitoring is completed.

Photo ID	Comments
	MANY PHOTOS of LEACHATE AND TRASH ITEMS EXPOSED ALONG ERODING HILL. PHOTOS of OTHER ITEMS EXPOSED ON TOP of HILL. SEVERAL PHOTOS AT WATERS EDGE ALSO INCLUDES UP STREAM, DOWNSTREAM, ACROSS, STRAIGHT DOWN AND ANGLES.

Electronic File Location of Photos: _____

Appendix B

Office of the Great Lakes, Areas of Concern Program
Michigan Department of Environmental Quality
Statewide Aesthetics Assessment Findings for Impaired AOCs

Muskegon Lake, Clinton River, Rouge River
and Detroit River Areas of Concern

INTRODUCTION

Two cycles of aesthetics assessments were conducted by Michigan Department of Environmental Quality (DEQ) staff between July 6, 2011 and May 23, 2012 in eight of the ten Michigan Areas of Concern (AOCs) that had the Degradation of Aesthetics Beneficial Use Impairment (BUI). The assessments were conducted in accordance with the DEQ 2011 Statewide Aesthetics Assessment Workplan and Monitoring Protocol. This findings document briefly describes and summarizes the assessment results in the four AOCs listed above, where it was determined that the Aesthetics beneficial use remains impaired.

For the AOCs that may no longer have impaired aesthetics (Kalamazoo River, River Raisin, St. Clair River, St. Marys River), those findings are summarized in the appropriate BUI Removal Recommendation or other summary documents, and are not addressed here. Additionally, the White Lake AOC will be assessed a second time following cleanup of the former Montague municipal dump site in late 2012; the Saginaw Bay/River AOC will be re-assessed following the development of AOC-specific aesthetics criteria that account for the presence of shoreline muck. The following chart summarizes the current status of aesthetics assessments.

AOC	Aesthetics Assessment Status	Result
Kalamazoo River	complete	BUI removed
River Raisin	complete	BUI removed
St. Clair River	complete	BUI removed
St. Marys River	complete	BUI removal recommended
Muskegon Lake	complete	BUI remains impaired
Clinton River	complete	BUI remains impaired
Rouge River	complete	BUI remains impaired
Detroit River	complete	BUI remains impaired
White Lake	1 cycle complete	Remedial activity required
Saginaw Bay/River	1 cycle complete	AOC specific criteria to be developed

At most monitoring locations in each AOC, a minimum of five photographs were taken and are available upon request, as are the individual monitoring data sheets recorded for each site. Unless otherwise indicated, aerial photos in this document are oriented with north to the top.

Overall, it appears that aesthetic conditions in most AOCs improved considerably when compared with historic reports of those conditions from decades ago. Many of the aesthetic conditions described in early Remedial Action Plans (RAPs) and other documents simply no longer exist. In part, this may be due to the implementation of National Pollutant Discharge Elimination System permitting, an increasing sense of resource stewardship by local resource users, improved environmental best management practices implemented by various municipal, commercial and

industrial operations around the state, and increased advocacy and educational outreach by the scores of organizations that seek to enhance and protect their local water resources. However, the result of the statewide assessment indicates that the Muskegon Lake, Clinton River, Rouge River and Detroit River AOCs still have specific environmental conditions that must be addressed before the Degradation of Aesthetics BUI will be ready for removal.

It is important to note that there is a difference between designated uses, as defined by the federal Clean Water Act and the Michigan Water Quality Standards, and beneficial uses, as defined by the Great Lakes Water Quality Agreement (GLWQA). According to the revised GLWQA of 1978 as amended in 1987, the impairment of beneficial uses means a change in the chemical, physical or biological integrity of the Great Lakes system sufficient to cause any of 14 different categories of use restrictions or degraded resources that were enumerated in the document, commonly known as Beneficial Use Impairments. While Michigan's Part 4 Rules, Water Quality Standards, promulgated pursuant to Part 31, Water Quality Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, specify particular uses for which Michigan Waters are to be protected. Some are generally applicable to all surface waters in the state, while others are conditional, depending on geographic region or time of year, for instance. The designated uses include, but are not limited to: agriculture, navigation, industrial water supply, warmwater fishery, body contact recreation, etc.

Putting a finer point on the distinction between the two types of uses, the *Guidance for Delisting Michigan's Great Lakes Areas of Concern* establishes criteria for the removal of Beneficial Use Impairments. Most relevant to this discussion about the Degradation of Aesthetics BUI is the *Guidance* requires that in order to remove the BUI, monitoring must indicate that certain physical properties do not exist in unnatural quantities which interfere with the state's designated uses for surface waters. The goal of the aesthetics assessments was to determine whether this was the case in the 10 AOCs with that BUI.

SUMMARY OF INDIVIDUAL AOC FINDINGS

This document focuses on the four AOCs that underwent two cycles of assessments and were found to remain impaired for the Degradation of Aesthetics beneficial use.

Muskegon Lake was assessed on July 12 and November 29, 2011, see Figure 1 for locations. Eight sites were assessed around Muskegon Lake. Staff identified the ongoing oil leak in Fenner's Ditch, which feeds Bear Lake, and petroleum odors and oil films near Bear Creek and adjacent to Celery Lane, near the Zephyr site (determined by the DEQ to be a "facility" under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended) as potentially impairing designated uses. Also noted was abundant trash in a small area of Ryerson Creek, resulting from a backed up culvert near the farmers market. Since the assessments, the Ryerson Creek culvert was replaced and its elevation adjusted to restore stream flow, which also appears to be alleviating the accumulation of trash. DEQ AOC staff conclude the Muskegon Lake AOC continues to be aesthetically impaired, due to petroleum contamination at the Fenner's Ditch and Zephyr sites.

Figure 1. Muskegon Lake Aesthetics Monitoring Locations.

The **Clinton River** was assessed on July 27 and November 16, 2011. See Figure 2 for locations. Ten sites were assessed in the Clinton River watershed during the initial round of monitoring. Although there are dissolved oxygen and *E. coli* Total Maximum Daily Loads (TMDLs) in place for specific parts of the Clinton River AOC, there was no evidence of potential aesthetic impairments observed, outside of a small amount of debris in one limited area. Evidence of wildlife habitat was observed, along with minnows, shore birds, aquatic insects, crayfish, etc. One person was observed paddling a kayak in the Clinton River in downtown Mt. Clemons and children were seen playing in Paint Creek, a tributary of the Clinton River, at the City of Rochester municipal park.
In the days immediately following the conclusion of the first cycle of monitoring, information came to the attention of AOC staff regarding a potentially aesthetically impaired site in the AOC, of which staff were not previously aware. On September 21, 2011, the DEQ AOC Coordinator visited the St. Lawrence Cemetery on Auburn Road, in Macomb County and took a number of photographs showing an inactive landfill behind the cemetery, on the banks of the Clinton River. Over time, the banks have eroded, exposing landfill debris and leachate seeps. Some of the debris continues to fall into the river, and water of unnatural characteristics had been observed discharging into the Clinton River. This site was added to the list of monitoring locations for the second round of assessments.

Statewide Aesthetics Assessment Findings for Impaired AOCs

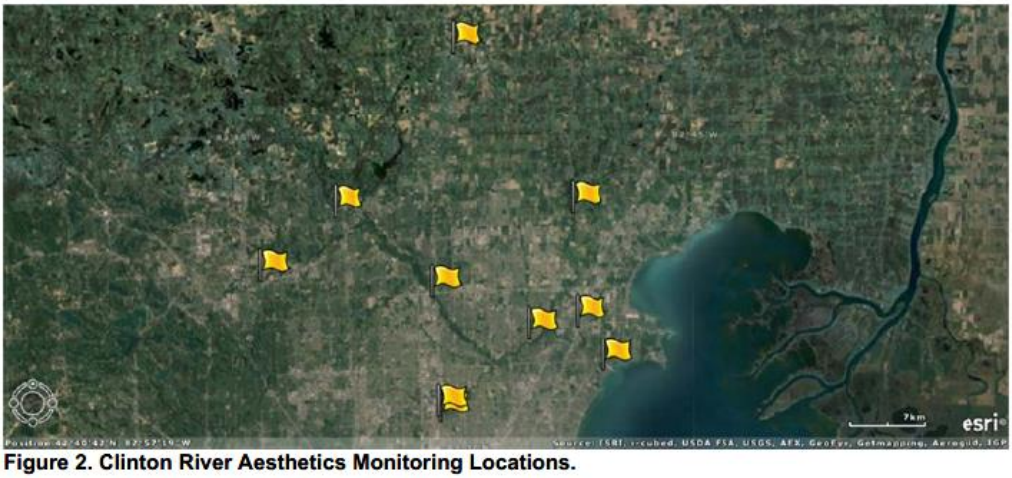

Figure 2. Clinton River Aesthetics Monitoring Locations.

During the November 16, 2011 assessment, additional photographs of the landfill area were taken showing a six to eight foot vertical wall of landfill debris sloughing into the river (Figure 3). The debris found in the immediate area included: car bodies, a transmission, a motorcycle frame, a clothes dryer, scores of tires, glass bottles, plastic toys, bicycle parts, plastic bags, wood debris, and other various forms of trash. In terms of water quality, discolored water was observed seeping out of the exposed river bank and into the river (Figure 4). However, surface samples of river water that were collected adjacent to the site did not exhibit unnatural color, but petroleum odors were present, as were oily sheens and biofilms.

Figure 3. St. Lawrence Cemetery Property, 11-16-11

Figure 4. Landfill Leachate, 11-16-11

The site was immediately referred to the DEQ's Water Resources Division and Remediation Division for further investigation and follow up. On September 1, 2011, water and sediment samples were collected from the site for analysis. The water samples exceeded aquatic life values developed for both mercury and copper. The sediment samples did not exceed available screening value concentrations. A meeting has been scheduled with the landowners, regulatory authorities and other stakeholders to begin the process of determining how best to proceed with site remediation. It is the professional opinion of AOC program staff that due to ongoing, persistent conditions at the St. Lawrence Cemetery site immediately adjacent to the Clinton River, the aesthetics beneficial use in the Clinton River AOC remains impaired.

Statewide Aesthetics Assessment Findings for Impaired AOCs

The **Rouge River** was assessed from shoreline locations on July 28 and November 17, 2011. See Figure 5 for locations. Eight sites were assessed in the Rouge River AOC from shore. The mouth of the river was observed from the water on August 9, 2011, as an excursion from the Detroit River assessment, from the river mouth up to Jefferson Avenue. Significant rain fell overnight prior to the July and August dates. A number of aesthetic issues were identified, including frequent oil sheens, chemical odors, debris resulting from apparent Combined Sewer Overflow discharges (floating sanitary trash), and the appearance of the river in some areas was extremely turbid and almost opaque.

Figure 5. Rouge River Aesthetics Monitoring Locations. **North →**

On August 9, for approximately a couple hundred yards downstream of the Detroit Water and Sewerage Department (DWSD) outfall #050, prolific gas bubbling was observed at the surface, which occasionally buoyed globs of fine, black sediment to the surface. At the outfall location, oil sheen was observed and the discharge was extremely dark, coloring the river from the outfall discharge point to the mouth where the Rouge River discharges into the Detroit River (see Figures 6 and 7). Additional photos and video of these phenomena were captured and are available. In July, at the Fordson Island site in Dearborn on the lower main stem of the river, staff disturbed the sediment to observe the release of oily black sediment from the river bottom.

The November assessment occurred during a dry weather period. As a result, there was less oil sheen present than in July and the water was less turbid. In the best professional judgment of DEQ staff, the three most downstream monitoring locations were aesthetically impaired during both monitoring cycles, while the upstream reaches were not observed as having any aesthetic impairments.

Although a monitoring data sheet was not completed at the DSWD outfall, there is no question that the lower main stem of the river near Jefferson Avenue was the most aesthetically impaired area assessed in the Rouge River AOC. Following these assessments, DEQ staff conclude that the Rouge River remains impaired due to the remaining combined sewer overflows and persistent, high levels of submerged oil and oil sheens.

Figure 6. Rouge River Sediment Globs, 8-9-11.

Figure 7. Rouge River DWSD Outfall #050, 8-9-11.

The **Detroit River** was assessed on August 9 and October 31, 2011. See Figure 8 for locations. Four sites were assessed from the water, courtesy of Detroit Riverkeeper, Robert Burns. The DEQ would like to acknowledge and thank Mr. Burns and the Friends of the Detroit River for providing DEQ staff with the opportunity to observe the Detroit River system on board their vessel, and for sharing his personal knowledge of the history and conditions of the Detroit River.

Figure 8. Detroit River Aesthetics Monitoring Locations.

A significant rain event occurred overnight prior to the August assessment. Typical CSO sanitary trash was observed near the mouths of the Ecorse and Rouge Rivers. Moderate turbidity was observed at the mouth of the Ecorse, presumably as a result of the rain event. An *E. coli* TMDL is in effect for the Ecorse River, related to various stormwater management issues in the area.

An ongoing coal dust discharge was observed running off Zug Island into the Detroit River as a result of the rain event. Photos of the runoff were submitted to stormwater compliance staff in the Southeast Michigan (SEMI) district office of the DEQ's Water Resources Division for follow up.

Statewide Aesthetics Assessment Findings for Impaired AOCs

The shoreline adjacent to the US Steel Slag operation, identified by SEMI staff as being operated by Edward C Levy (industrial stormwater general permit holder), appeared to be bleached and has an unnatural grey/light brown color. Slag operation debris appears to have been dumped along the shoreline, perhaps for stabilization. Tires and other debris were noted as well. Closer inspection revealed calcified deposits and stains along the shore. Submerged aquatic vegetation was absent and no aquatic insects or other aquatic life was observed in the area, except discolored algae (see figures 7 and 8). Additional photos are available. During the initial assessment, DEQ staff conducting the aesthetics monitoring at this site did not evaluate any physical or chemical water quality parameters to assess any potential runoff that may be occurring. However, during the October 31 assessment, a pH meter was deployed in the river at this site, and several readings were taken, with the highest reading being 9.5. The pH level gradually fell as the readings were taken farther away from the shore.

Without performing a biosurvey, it is not clear whether the aquatic life designated use may be impaired at this location. However, based on the pH level and calcified deposits observed during the aesthetics assessment, DEQ staff conclude that the aesthetics beneficial use in the Detroit River remains impaired.

Figures 7 & 8. Detroit River Shoreline Adjacent to US Steel Slag Operation.

SUMMARY

Following two complete cycles of aesthetics monitoring, DEQ AOC program staff find that Muskegon Lake, the Clinton River, the Rouge River and the Detroit River remain impaired for the Degradation of Aesthetics beneficial use, due to persistent high levels of physical properties in unnatural quantities that interfere with the State's designated uses, as described in this document.

Prepared by:
John Riley, AOC Coordinator
Michigan Department of Environmental Quality
Office of the Great Lakes
rileyj2@michigan.gov
517-335-4122

August 2012

Appendix C

CLINTON RIVER WATERSHED COUNCIL

46 Years of Dedication

1115 W. Avon Road
Rochester Hills, MI 48309
248-601-0606
www.crwc.org
contact@crwc.org

October 25, 2018

Jennifer Tewkesbury, AOC Coordinator
Office of the Great Lakes
Michigan Department of Natural Resources
PO Box 30473
Lansing, MI 48309

Dear Jennifer,

The purpose of this letter is to indicate the continued support of the Clinton River Public Advisory Committee (PAC) for the removal of the Aesthetics Beneficial Use Impairment for the Clinton River Area of Concern.

Via a phone and email voting process a completed on October 23, 2018, the majority of PAC voting members passed a motion supporting the removal of this BUI. PAC members recently toured the St. Lawrence Cemetery/landfill site and work has been completed.

If you have any questions regarding our support of the removal of this BUI, please do not hesitate to contact us. We value our partnership with the AOC Program and look forward to more BUI removals in the Clinton River Area of Concern.

Sincerely,

Mary Bednar, PAC Chair
Clinton River Area of Concern

Cc: Anne Brasie, CRWC