

ST. CLAIR RIVER AREA OF CONCERN ASSESSMENT OF THE ADDED COST TO AGRICULTURE OR INDUSTRY BUI DRAFT REPORT



Prepared for: Friends of the St. Clair River Watershed



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1.0 INTRODUCTION

The Stage 1 RAP (OMEE and MDNR, 1992) identified *Added Cost to Agriculture or Industry* as an impaired Beneficial Use (BU) in the St. Clair River Area of Concern (AOC). Within the U.S. portion of the AOC, one specific reason for listing this BU as impaired was the shutdown of the Akzo Salt (now Cargill) water intake due to a spill in February of 1989. This temporary shutdown resulted in additional costs to the company.

In 1997, although the RAP Implementation Annex (Ontario Ministry of the Environment, 1998) recommended that the status of this BU be changed from “impaired” to “not impaired” because there had been no water treatment plant closures or associated interruptions in water supply to industrial users between 1994 and 1997, no such action was taken. Lastly, the 2005 RAP Progress report (Environment Canada, 2005) further noted that the Beneficial Use Impairment (BUI) also requires current review based on recent chemical spills to the St. Clair River.

According to the Michigan Department of Environmental Quality’s Guidance for Delisting (MDEQ 2008):

This BUI will be considered restored when the locally-derived restoration target for this BUI, approved by the Four-Agency Management Committee, which oversees shared U.S. and Canadian AOCs, is met. The current target for this BUI, as adopted in the 1995 Stage 2 RAP, is:

- *No plant shutdowns attributable to water quality over a 2-year period.*
- *No added costs for the disposal of contaminated sediments.*

In order to assess the current status of this BUI, water intake permit holders were identified and solicited to complete a quick survey to determine if any plants had experienced shutdowns within the last two years and/or any added costs associated with disposal of sediments.

2.0 METHOD OF ASSESSMENT

The Michigan Department of Environmental Quality (MDEQ)’s Water Use Program provided a list of all large quantity withdraws (over 70 gallons per minute) from the U.S. side of the St. Clair River, including industrial and municipal users (Table 1).

Table 1: Facilities with Permitted Water Withdraws

TYPE	FACILITY NAME
Industrial	DTE – St. Clair Power Plant
	DTE – Belle River Power Plant
	DTE – Marysville Power Plant
	Cargill, Inc.
	Dunn Paper Inc.
	E. B. Eddy Paper Inc. (now Domtar)
Municipal	Algonac Water Filtration Plant
	East China Water Treatment Plant
	Marine City Water Treatment Plant
	Marysville Water Treatment Plant
	Port Huron Water Filtration Plant
	St. Clair Water Treatment Plant

Two distinct surveys were developed to solicit information from industrial and municipal facilities as additional information collected from municipal facilities could be utilized in evaluation of the *Restrictions on Drinking Water* BUI. Blank surveys are provided in Appendix A. Facilities were contacted via phone to identify appropriate contact personnel and surveys were distributed via email and/or facsimile. Responders were able to complete the survey via an online web survey or by filling out a form and returning via email or facsimile. Follow-up calls and emails were conducted for three months until all of the surveys were returned.

3.0 DISCUSSION

Surveys from industrial and municipal facilities were reviewed in the context of the *Added Cost to Agriculture or Industry* and *Restrictions on Drinking Water* BUIs. Key findings are detailed below.

3.1 INDUSTRIAL FACILITIES

Six industrial facilities have active permits for large quantity water withdraws on the U.S. side of the St. Clair River, including three power plants, two paper manufacturing facilities and one salt production facility. It should be noted that the Marysville Power Plant was permanently shut down in 2011. The survey response for this facility reflects the fact that there is no longer an active water withdraw at this location and is therefore not included in the discussion of survey responses below.

The survey asked industrial facilities to describe how water from the St. Clair River was used and if the facility had specific requirements for the quality of water used. Table 2 summarizes the responses to these questions.

Table 2: Industrial Survey Responses

FACILITY	WATER USE	WATER QUALITY REQUIREMENTS
Belle River Power Plant (DTE)	Non-contact cooling water & general service water	Yes
St. Clair Power Plant (DTE)	Non-contact cooling water & general service water	Yes
Cargill, Inc.	Cooling water & source water	No
Dunn Paper, Inc.	Process & cooling water	Yes
Domtar (formerly EB Eddy Paper)	Process water	Yes

As Cargill, Inc. indicated that there are no specific requirements for quality of the water used from the St. Clair River, the remaining survey questions were not applicable. Without specific standards for the quality of water used, there is no associated “added cost” to their facility for use of water from the St. Clair River.

Facilities that answered “yes” to the question about “whether or not the facility had requirements for the quality of water used” were asked a series of questions pertaining to the treatment of water used. The two power plant facilities (Belle River & St. Clair) indicated that some of the water from the St. Clair River is treated prior to use while the paper production facilities (Dunn Paper & Domtar) indicated that all water from river is treated prior to use. All four facilities indicated that the level of treatment required for water withdrawn from the St. Clair River was **not** above and beyond what is typically required for a surface water intake.

Facilities were then asked if water treatment activities required sediment disposal. All four facilities indicated sediment disposal was required and were prompted to respond to additional questions concerning the costs of disposal. The two power plant facilities (Belle River & St. Clair) indicated that they did **not** pay for sediment disposal. The paper production facilities (Dunn Paper & Domtar) indicated that they did pay for sediment disposal but costs were **not** above and beyond what is typically required for sediment disposal.

Therefore, no U.S. industrial facilities experience additional costs associated with water use from the St. Clair River.

The last portion of the survey asked if the facility ever suspended processes due to the quality of water in the St. Clair River. Responses are detailed in Table 3.

Table 3: Industrial Survey Responses

FACILITY	HAS THE FACILITY SHUT DOWN DUE TO WATER QUALITY?	COMMENT
Belle River Power Plant (DTE)	No	-
St. Clair Power Plant (DTE)	No	-
Cargill, Inc.	No	-
Dunn Paper, Inc.	No	We have the ability to use City water in times of high turbidity
Domtar (formerly EB Eddy Paper)	No	If sediment loading is too great for our filtering, we can switch over and purchase water from the City of Port Huron

Therefore, no plant shut-downs associated with water quality have occurred over the past 2 years.

3.2 MUNICIPAL FACILITIES

Although the current delisting target for the *Added Cost to Agriculture or Industry* BUI does not include “no interruption in water supply to industrial facilities” as a specific requirement, it was identified in the 1997 RAP Implementation Annex as a contributing factor. Additionally, the industrial surveys confirmed that two of the U.S. industrial facilities on the St. Clair River have the ability to use municipal water if the sediment loading or turbidity of the river water is too high.

Six municipal water treatment facilities have intakes on the U.S. side of the St. Clair River (Table 1). Each facility confirmed that there has not been an exceedence of potable and palatable water quality standards, post treatment, within the last two years. While all six of the municipal facilities indicated at least one historic closure due to water quality in the St. Clair River (due to chemical spills and/or CSOs), they all noted that the closure did not result in any interruption in service or loss of pressure in the distribution system. Therefore, there has been no disruption of water supply to industrial facilities associated with water quality in the St. Clair River.

4.0 SUMMARY AND CONCLUSIONS

The results of the industrial and municipal survey support changing the status of the *Added Cost to Agriculture or Industry* BUI from impaired to unimpaired. Industrial survey responders confirmed:

- *No plant shutdowns attributable to water quality over a 2-year period, and*
- *No added costs for the disposal of contaminated sediments.*

In addition to explicitly meeting the current delisting target for this BUI, the municipal survey responders confirmed no interruption in water service to industrial facilities associated with water quality in the St. Clair River.

REFERENCES

- Environment Canada. 2005. *St. Clair River RAP Progress Report. Volume 1-Synthesis Report: Environmental Conditions and Implementation Actions (1998-2003)*.
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- Ontario Ministry of the Environment (OMEE). 1998. *St. Clair River Area of Concern: Implementation Annex 1997*. February 1998. Revised November 1998.
- Ontario Ministry of the Environment (OMEE) & Michigan Department of Natural Resources (MDNR). 1992. *The St. Clair River Area of Concern Environmental Conditions and Problems Definitions: Remedial Action Plan Stage 1*.