



**Position Statement  
on the  
Wastewater Systems Effluent Regulations under the *Fisheries Act*,  
as published 2010 March 20 in *Canada Gazette, Part 1***

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## **EXECUTIVE SUMMARY**

The Canadian Water and Wastewater Association (CWWA) supports in principle and in general the Federal Government's initiative to implement the Canadian Council of Ministers of the Environment's Canada-Wide Strategy for the Management of Municipal Wastewater Effluent (Strategy) through the *Wastewater Systems Effluent Regulations* under the *Fisheries Act*, as published 2010 March 20 in *Canada Gazette, Part I*, and the implementation of a minimum standard for municipal wastewater treatment in Canada.

CWWA's five main concerns regarding the Regulations are: cost, liability, complexity, CSOs and harmonization.

### **Cost**

Cost is a fundamental issue for all municipalities, the importance of which cannot be overstated. These cost burdens will have to be met at a time of increasing demands on municipal services in general and, in particular, in competition with other environmental improvements demands such as expanded public transit systems, potable water supply and of course the broad issues of social justice and equity. CWWA feels the economic impacts have been underestimated and the benefits overestimated in the Regulatory Impact Analysis Statement and this document deserves a detailed review prior to publication of the final Regulations. CWWA strongly believes that a committed funding program on the part of the Senior Levels of Government will be essential to assist municipalities in general and smaller municipalities in particular. It is requested that municipal councils be given an opportunity to discuss the very important cost issues with both senior levels of government before any further steps are taken to bring these requirements into effect. Once programs are firmly underway, municipalities should where possible exercise full cost recovery through user fees – the standing position of the Association.

### **Liability**

With regard to **liability**, CWWA believes that the regulation under the *Fisheries Act* will ultimately provide welcome clarification of liability for municipal wastewater treatment facilities. However, CWWA believes the proposed Regulations unintentionally impose additional liabilities on municipalities by establishing high risk, no-win choices. The proposed Regulations if implemented without changes could put our members in an intolerable position, having to choose between:

1. shutting down their sewage treatment plant - impossible and environmentally disastrous,  
or
2. breaking the law - highly dangerous for both municipalities as organizations, and for their staff and elected officials as individuals.

CWWA believes municipal wastewater treatment facilities should not be in an illegal position under the *Fisheries Act* provided they are meeting the specified standards in the proposed Regulations, are actively engaged in activities related to obtaining an authorization, or are operating under an authorization. CWWA has made a number of recommendations to achieve the same objectives through minor changes to the Regulations. A number of apparent omissions have also been identified.

CWWA is greatly concerned about the possible individual liabilities under the Regulations for municipal staff and elected officials, as convictions under the *Fisheries Act* are criminal convictions. It seems a contradiction that such liabilities could be incurred as a result of providing a critical government service for the public good. We are not aware of any obligation imposed by any provincial or territorial legislation for a municipality to install or operate such systems.

CWWA also feels that some elements of the Regulations are still in the realm of research and without a widely accepted basis of determination, liability issues will remain. There is considerable doubt whether acute lethality should be used as a basis for authorizations to discharge at this time, and a reduction in the scope of environmental effects monitoring has also been recommended. It is proposed that both acute lethality and environmental effects monitoring be reviewed at an appropriate time in the future to determine the proper handling of these matters. CWWA would be pleased to participate in the future evaluations.

Numerous other individual technical points on the Regulations which CWWA believes must be corrected and which will improve the ability of municipalities to comply with the Regulations have also been identified. These are included in their entirety in Annex A and noted in the body of the position statement as needed.

### **Complexity**

The regulations are drafted in a style which is very complex. The CWWA members reviewing these Regulations include those from among the largest and most sophisticated wastewater utilities in the country and these were having considerable difficulty understanding the regulation, to the extent they are uncertain whether some of the comments herein accurately reflect the proposed Regulations. If the most sophisticated and resourced utilities are having this trouble it is difficult to imagine that small utilities with fewer resources available to them will be able to comprehend and implement activities to bring them into compliance. CWWA wonders whatever happened to the policy of "plain language" drafting.

CWWA also recommends that, given the scope and complexity of these regulations and the impact on civil society and on municipal financial burdens, CWWA recommends that the regulations should be subject to a Parliamentary review after they have been in effect for five years.

Given that these regulation are 36 pages long in one language and enormously complex with cross-referencing, CWWA believes that a 60 day comment period was totally inadequate for a thorough and proper evaluation of the provisions and impacts. The translation of principles into legislation has obscured the requirements being placed on municipalities.

### **Combined Sewer Overflows**

The proposed treatment of combined sewer overflows (CSOs) is a major departure from the "National Overflow Standards" contained in the CCME Strategy and is of great concern to CWWA members. It is also unreasonable to treat discharges from combined sewers as "discharges out of the course of normal events".

**Harmonization**

CWWA applauds the efforts to ensure harmonization and a one-window approach; however this seems to be limited only to Environment Canada and provincial government administering agencies. The regulations do not reflect the fact that investments in new infrastructure, for example, require numerous separate assessments and evaluations under the authority of other federal and provincial agencies, and the process needed to be followed can frustrate timeliness of making changes. The time frames within these Regulations do not reflect that situation.

**Finally, there is the question of, “Who should regulate?”**

There are a number of examples where regulatory requirements are being placed on the municipality rather than being introduced at the level of either the province or territory or the federal government. The three levels of government should work together as partners in managing effluent issues and not as adversaries with requirements being placed solely on the municipalities. If for example we are going to control CSOs, one thing that would be beneficial would be changes to the Building Codes to require storm water to be managed on-site and not discharged from the property; this requires concerted action at the provincial/territorial (or federal) level, not at the municipal level. We would hope that Environment Canada and the other members of CCME would help work to that end.

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Wastewater Systems Effluent Regulations under the *Fisheries Act*,  
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## **INTRODUCTION**

The Canadian Water and Wastewater Association represents the water and wastewater services of municipalities from all Provinces and Territories and our members provide services to more than 75% of Canadians who are connected to municipal services. The Association has a national technical committee of senior professionals and managers who have been working studiously over the last many years on the development of the municipal wastewater effluents strategy and particularly and most recently on the *Canada Gazette I* notice.

This is CWWA's position on the proposed *Wastewater Systems Effluent Regulations* under the *Fisheries Act*, as published 2010 March 20 in *Canada Gazette, Part I*.

CWWA supports the goal of a national minimum standard for municipal wastewater treatment in Canada. Our objective in submitting comments is to ensure that the requirements are practicable for our sector. Municipal wastewater services have played a critical historical role in municipal development. CWWA does not believe though that the Regulations recognize the unique and essential public services that are provided in a not-for-profit, public service environment.

The Comments submitted in this document represent the compilation of many hundreds of man-hours of assessment, deliberation and discussions which have taken place despite the normal work loads of the contributors. These Regulations will have profound effects on municipal wastewater services across the country and has resulted in the commitment of many hours of work and financial expenses.

We have serious concerns in five main areas which require urgent attention, which are set out in detail below.

The concerns and suggestions set out below are made in good faith and it is felt they will allow the same objectives to be achieved in the same time as the proposed Regulations, but with less negative impact on utility operations.

## **COST**

Cost is a fundamental issue for all municipalities, the importance of which cannot be overstated. The financial impact of the Regulations on municipalities will fall into two categories – the capital cost of investing in new or upgraded wastewater and storm water collection systems and in treatment facilities and technologies, and the added operating costs which will be incurred annually both directly and indirectly.

These cost burdens will have to be met at a time of increasing demands on municipal services in general and in particular in competition with other environmental improvements demands such as expanded public transit systems, potable water supply and, of course, the broad issues of social justice and equity.

These will be a significant issue for a many CWWA members and, many other municipalities across Canada. Small municipalities will particularly feel the impact of these Regulations on their cost structures. Despite these concerns, CWWA is committed to the program for the environmental and public health benefits that will be the outcome.

CWWA would like to note that the costs cited in the Regulatory Impact Analysis Statement (RIAS) seem seriously underestimated. There are no details in the explanation of how this estimate was derived, but the \$5.9 billion national estimate is significantly less than a previous CCME estimate of \$13 billion for capital costs alone, not including CSO and SSO management. CWWA also feels the discount rate applied is far too high and that the economic benefits are greatly overstated. This document deserves a detailed review prior to the publication of the final Regulations. Having said that, CWWA feels it is sufficient to simply say the main purpose of the Regulations is to establish a minimum standard of wastewater treatment in Canada for the sake of environmental protection.

CWWA notes that combined sewer overflows (CSOs) have been given a flexible treatment in the proposed Regulations. However, costs related to CSOs will still be substantial, potentially exceeding costs related to wastewater treatment for some municipalities. We note that the extra billions required to eliminate CSOs Impacts are nowhere mentioned in the Regulatory Analysis Statement.

It is also noted below that control of acute lethality due to substances other than ammonia or due to synergistic effects has not been dealt with in the Regulations and must be. This is another major category of costs that has not been included in the RIAS.

The costs of environmental effects monitoring will be significant and the issue is dealt with below under the Detailed Comments section.

CWWA strongly believes that a committed funding program on the part of the Senior Levels of Government will be essential to assist municipalities in general and small municipalities in particular. However, CWWA will not address this issue extensively; instead, it is requested that municipal councils be given an opportunity to discuss the very important cost issues with both

senior levels of government before any further steps are taken to bring these requirements into effect.

Once programs are firmly underway, municipalities should where possible exercise full cost recovery through user fees – the standing position of the Association.

## **LIABILITY**

The CWWA believes that the regulation under the *Fisheries Act* will ultimately provide welcome clarification of liability for municipal wastewater treatment facilities. However, CWWA believes the proposed Regulations unintentionally impose additional liabilities on municipalities by establishing high risk, no-win choices. The proposed Regulations if implemented without changes could put our members in an intolerable position, having to choose between:

3. shutting down their sewage treatment plant - impossible and environmentally disastrous, or
4. breaking the law - highly dangerous for both municipalities as organizations, and for their staff and elected officials as individuals.

It is believed these liabilities are "unintentional" because the Development Committee for Canadian Council of Ministers of the Environment (CCME) and Environment Canada have both been very receptive to the concerns expressed by our sector during the development of the *Canada-wide Strategy for the Management of Municipal Wastewater Effluent* (CCME Strategy) and these Regulations, and CWWA can see responses to the concerns of its members in both.

CWWA believes municipal wastewater treatment facilities should not be in an illegal position under the *Fisheries Act* provided they are:

- meeting the specified standards in the proposed regulations,
- actively engaged in activities related to obtaining an authorization, or are
- operating under an authorization.

This position is related to the fact that municipal wastewater facilities currently operate legally under regulatory frameworks imposed by the Provinces and Territories. (Note: See also the section dealing with “Harmonization”, below.) Also, CWWA feels the proposed regulations do not acknowledge the origins of the current system of municipal wastewater treatment and that its primary purpose was, and still may be, the prevention of disease. Municipalities make no profit from wastewater treatment and CWWA is not aware of any obligation imposed by any provincial or territorial legislation for a municipality to install or operate such systems. This service is provided to citizens and industries, commercial businesses, and institutions (ICI dischargers), for which all three levels of government share duty of care.

As indicated above, CWWA is greatly concerned about the possible individual liabilities under the Regulations. This is particularly frightening for municipal staff and elected officials, as convictions under the Fisheries Act are criminal convictions, which can seriously affect their ability to travel and to find employment. It would be perverse to make it so much more difficult for municipalities to find, and keep, the qualified and motivated personnel who are essential to

improving environmental performance. It seems a contradiction that such liabilities could be incurred as a result of providing a critical government service for the public good. The possibility of prosecutions initiated by private parties seriously increases concerns as they, and perhaps even the courts, may not understand the significant technical challenges faced by municipal wastewater treatment. Additionally, CWWA has reminded the federal government repeatedly that municipalities as legal entities do not generate pollutants. Instead, municipalities attempt to treat them. While limits for carbonaceous biochemical oxygen demand (CBOD) and suspended solids (SS) are firmly established as treatment standards in approvals for wastewater systems, and total residual chlorine (TRC) have already been the subject of a Notice under the *Canadian Environmental Protection Act (CEPA)*, the concept of acute effluent lethality opens up a new and broad perspective in the role of municipal wastewater treatment because of the myriad of possible causes of acute lethality, described below. In this regard, municipalities will have to truly be “recognized as key players in municipal wastewater management”, as was stated in the Terms of Reference for the Development Committee of the CCME Strategy.

CWWA members have also identified a number of apparent inconsistencies in and omissions from the proposed Regulations:

### **Transition Periods**

The Regulations create time gaps, during which our members will be highly vulnerable to prosecution, especially since private interests can profit from the fine-splitting provisions of the *Fisheries Act*. While the substances specified in s.3 might in fact be “deleterious substances” now under s.36 (3) of the Act, the regulations will make public and private prosecutions much easier, by setting simple and obvious benchmarks for acceptable discharges. In theory, this danger will be offset by the new system of authorizations. However, the danger begins immediately, while the authorizations take time:

- No authorizations to discharge are available for 24 months after the regulations are registered (s. 44 (2)), while the substances which are the subject of the regulation are specified as deleterious as soon as the regulations come into force. In fact, the mere publication of the proposed Regulations has clearly established a basis for interpretation of section 36 (3) of the Act prior to these Regulations coming into force.
- Once the Regulations do some into force, s. 4 determines compliance on a running month to month or quarter to quarter (subsequently referred to as "period" herein) basis, the authorization to discharge in the subsequent period being based on compliance in the previous period. Thus, if a facility does not meet the standards in a period, they are no longer authorized to discharge. Transitional authorizations will correct this situation, but the basis for application is an annual average. Thus, a facility could remain unauthorized to discharge during the balance of the one-year period required to collect data, and the time required to prepare an application and subsequently receive authorization.
- Similarly, if tests on a single effluent sample in a respective period show it to contain ammonia greater than 1.25 mg/L un-ionized Ammonia-N, a facility's authorization to discharge under s. 4 is removed. It cannot apply for a temporary authorization unless they have been out of compliance for two consecutive periods. Again, it will not be authorized to discharge during the period required to prepare an authorization and the Ministry has had time to consider the application and grant an authorization.

- The regulations only lay out the main authorization processes for the first few years. They need to be available indefinitely. It is incorrect to assume that a biological process will always perform the way it has in a previous period. It is also possible for factors beyond a municipality's direct control to exceed planning predictions and cause a facility to reach or exceed its capacity prior to new infrastructure being ready to treat the extra loads.

### **Missing Authorizations**

There are also a number of scenarios which could occur for which no authorizations are available:

- Total residue chlorine (TRC) is one substance for which a standard has been specified [s. 4 (c)]. No authorization is available if the TRC standard is not met. In any event, TRC is also the subject of a Notice under CEPA and requirements in the *Fisheries Act* should reflect discussions and requirements with respect to that Notice. A fundamental question for CWWA members is whether an analytical method which can accurately detect the very low level specified in s. 4 (1) (c) in the relatively complex matrix that treated municipal wastewater effluent represents is actually available.
- In addition to meeting the effluent quality standards specified in ss. 4 (1) (a) - (d), an effluent must not be acutely lethal during a period for a facility to be authorized to discharge in the subsequent period. While the Temporary Authorization to Deposit Un-ionized Ammonia, for which the timing inconsistency is described above, would seem to address this, an authorization could only be granted if the acute lethality is due *solely* to ammonia [s. 29 (1) (a)]. Unfortunately, very little is known about acute lethality in municipal treatment plant effluents; its causes; its remedies; nor even how it fluctuates. Numerous substances in ICI or residential wastewater could kill rainbow trout fingerlings, either on their own, synergistically, or together with the controlled parameters.<sup>1</sup> If municipal effluent is tested, and found to be acutely toxic, there is nothing the municipality can do to instantly remedy the problem. No authorization is available when an effluent is acutely lethality not due only to the presence of unauthorized ammonia. It is illogical to grant municipalities regulatory protection for acute lethality from ammonia, while denying them regulatory protection for acute lethality from other causes that are even harder to control.
- As noted above with regard to timing, a facility is not authorized to discharge in a subsequent period if tests on a single effluent sample in the previous period show it to contain ammonia greater than 1.25 mg/L un-ionized Ammonia-N. An authorization is not available when an ammonia maximum occasionally exceeds the standard, but not frequently enough for the annual average to exceed the standard and the in-stream concentration is not below 0.016 un-ionized Ammonia-N 100m from the point of discharge.

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<sup>1</sup> Environment Canada staff may assume that such "other lethality" will be detected by causing an upset in a wastewater treatment plant, but this is not necessarily correct.

## **Other Deleterious Substances**

CWWA members also have concerns about other deleterious substances which may be present in treated municipal wastewater effluents:

- As noted above with regard to timing, the regulations, while ultimately reducing liability for municipal wastewater treatment for the specified deleterious substances, could draw more attention to treated municipal wastewater effluents. Again, as noted above with regard to acute lethality, there could be numerous other substances that could be deemed to be deleterious in municipal wastewater. These would include substances such those specified in surface water quality guidelines or included in Schedules 1 of 2 to CEPA. These others may be present and detectable because of the historical happenstance that municipal wastewater systems, first created to mitigate the spread of disease via human bodily wastes, have become the recipients of discharges of household chemicals and personal care products over which municipalities have no control. Also, even the conventional bylaw controls municipalities have on discharges from industries, commercial businesses, and institutions (ICI dischargers) have traditionally been more focused on protecting infrastructure and biological treatment processes than on environmental protection. This only requires that substances be regulated at levels which are two to three orders of magnitude higher than typical in-stream guidelines. Thus, municipalities are operating within the accepted practices as established within all of the regulations our society has established to date. Effluent concentrations of these other substances are most often at trace levels and we are unaware of any situations in which these other substances have created serious acute environmental problems. However, there have been prosecutions under the *Fisheries Act* based on the mere presence of a deleterious substance and not whether it was actually causing an adverse environmental impact.

## **Recommended Adjustments to the Regulations**

### **Acute Lethality**

“Acute lethality not due solely to the presence of un-ionized ammonia” is a possibility in municipal wastewater effluents. As noted above, very little is known about acute lethality in municipal wastewater facility effluents, particularly with regard to other substances and synergistic effects. The extent of occurrences of this is also largely unknown at this point. It is known that such occurrences can be and are likely to be episodic and unpredictable.

CWWA also believes there is a shortage of laboratories across the country that are accredited for the acute lethality testing specified. Some members have investigated this and will have to go quite far a field to locate a suitable lab, raising questions about shipping the relatively large volumes of wastewater effluent required for this testing; e.g., does the *Transportation of Dangerous Goods Act* apply to these shipments? The availability of laboratories and the logistical issues are seen as a serious weakness for a regulatory requirement.

Therefore, CWWA recommends that acutely lethality not be included as a condition for authorization at this time. However, it would be reasonable to specify that the acute lethality monitoring and reported required in the proposed Regulations proceed for information purposes.

CWWA recognizes that the Federal Government has an essential role in coordinating data collection and analysis to evaluate the extent of this problem and in helping Canadian municipalities to share experiences with those of other countries who are wrestling with similar issues. The collected information could then be evaluated and an appropriate course of regulation established as part of a five-year review.

### **General Authorization and Transition Periods**

CWWA believes that a change in the general conditions of authorization in s. 4 could resolve many of the issues noted above. It is suggested that, effective immediately upon registration, all municipal wastewater treatment facilities should be authorized to continue to discharge:

- provided they meet the specific conditions in s. 4, or
- in the event they don't meet the conditions in s. 4, they are actively engaged in activities related to obtaining an authorization; i.e.:
  - are meeting the monitoring requirements to collect the information necessary to apply for a transitional or temporary authorization and on an ongoing basis,
  - are reporting,
  - are preparing within a specified timeframe a respective application for a transitional or temporary authorization, are awaiting the review of a submitted application, or are operating under a transitional or temporary authorization, as the case may be.

CWWA understands that commencement of prosecutions only occurs when there has been an assessment by the Attorney General that an offence has occurred and there is reason to believe that a prosecution will be successful. This assessment includes evaluation as to whether or not due diligence has been exercised by the offender. The issue of demonstrating or determining if due diligence has occurred can be simplified if additional wording can be included in the regulations at various points. For this reason and for example, CWWA recommends with regard to last bullet above, the addition in the regulations of statements of exemption or understanding; i.e., that no offence has occurred once a request for an authorization has been filed or if monitoring to confirm results is continuing.

The most significant logistical change resulting from the above recommendations with regard to the evaluation of being authorized to discharge relates to the running evaluation from period to period. Instead, evaluation for transitional authorizations would be based on a running evaluation for 12 calendar months or 4 calendar quarters, as the case may be. Alternatively, this could be based on a calendar year. Evaluation for a temporary authorization would continue to be based on a running evaluation of two consecutive periods, but would not leave a facility without an authorization to discharge after not meeting the standard for ammonia in just one period. These changes combined with authorization while engaged in obtaining a transitional or temporary authorization recognizes that discharges from a municipal wastewater treatment facility can not be stopped since the collection of wastewater from residents cannot be stopped in the public interest of health. This is the conundrum of the regulation, should a municipality have imposed

on it the prospect of significant daily or total financial penalties and criminal penalties when correcting a situation may take months of effort?

The suggestions above do not resolve the issue of “acute lethality not due solely to the presence of un-ionized ammonia in effluent”. An authorization must be added for this scenario if acute toxicity is not removed as a condition of authorization, as recommended above.

Authorizations must also be added for:

- facilities meeting all the requirements for application for a temporary authorization but not meeting the requirements at 100 m from the point of entry specified in s. 29 (1) (c),
- facilities not meeting the standard for total residual chlorine, and
- for any unanticipated circumstance which may arise.

The inconsistencies in timelines have been noted above. In situations where obtaining authorizations is so important, other similar legislation includes requirements placing time limits on the approving authority to grant authorizations. CWWA feels this is appropriate for these Regulations.

### **Emergencies, breakdowns and power outages**

There should also be an emergency provision protecting municipalities when upsets occur due to circumstances beyond their control. There are so many entry points into a municipal sewer system it is virtually impossible for a municipality to protect themselves against hazardous discharges that could upset the biological processes typical of secondary treatment and cause a plant to fall out of compliance. This is a dramatically different situation than for an industry facility which should have complete control over its inputs and processes. Also, no equipment is foolproof, and no mechanical system operates 100% of the time. Further, it is not always practical to give three months notice of a bypass, as allowed under the conditions for a Temporary Bypass Authorization [s. 36].

Sanitary sewer overflows (SSOs) have received little specific attention in the proposed Regulations. CWWA members note that all municipal wastewater systems, both with and without CSOS, are subject to weather-related impacts. At a peak flow factor of about 2-3 times design flows, the micro-organisms used in activated-sludge secondary processes will begin to wash out, potentially leading to upsets which could take weeks to recover from. This is why SSOs are also important emergency provisions included in the design of wastewater systems. For this reason, it should be clear that SSOs under emergency conditions are not illegal under the *Fisheries Act*. CWWA members support the standards for SSOs stated in the CCME Strategy:

“The national standards for sanitary sewer overflows are:

- sanitary sewer overflow frequencies will not increase due to development or redevelopment; and
- sanitary sewer overflows will not occur during dry weather, except during spring thaw and emergencies.”



The regulations expose the municipalities and their staff to prosecution every time there is an emergency or upset, whether it is their fault or not. This is unfair and counterproductive. The Regulations should explicitly provide for such emergencies, as contemplated in the Strategy<sup>2</sup> and in some provincial legislation, such as the British Columbia *Environmental Management Act*.

### **If an authorization is revoked or refused**

Municipalities also need clarification of what will happen if an authorization is revoked or refused. They have no practical options if an authorization that they require is refused, delayed, or revoked – the collection of wastewaters must continue for public health reasons. As noted above, municipal wastewater treatment facilities fulfil a vital role with regard to public health and are not like private industries, which can control the pollutants in their effluent, and can shut down and move elsewhere if compliance becomes too burdensome. Municipalities have limited ability to control the pollutants they are forced to receive, and they cannot under any circumstances shut down their wastewater treatment plants. It is suggested that reconsideration of authorizations be the normal course of action so that the requirements placed on municipalities to improve their effluent remain reasonable under the changing circumstances faced by municipalities, as would be similar to changes faced by provincial and federal levels of government.

### **Additional Comments on Other Deleterious Substances**

The authorization granted unless facilities are not meeting only specified standards may seem overly generous with regard to “other substances” but, again, municipal wastewater treatment is a service to the public which is inherently at risk due to circumstances beyond a municipality's control. These substances are becoming “public perception” issues in treated municipal wastewater effluents because of the increasing ability to detect trace levels of substances and the resulting correlations with environmental effects this has allowed. In the context of environmental protection, traditional controls may need to be re-evaluated, but this should happen at a national level; for example,

- residential chemicals and personal care products may need to be regulated at the federal level, or
- standards for ICI discharges may need to be established at a national level and enforced at a municipal level.

The latter was the motivation behind CWWA's proposal to develop a model sewer-use bylaw during the development of the CCME Strategy. While the product of that effort was only able to collect current best practices from across the country, it establishes a basis for an ongoing effort among the three levels of government to re-evaluate the controls necessary on discharges typically received by municipal wastewater facilities. The Environmental Effects Monitoring in these proposed Regulations and the Environmental Risk Management Framework proposed under the CCME Strategy will provide the three levels of government additional information

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<sup>2</sup> see Outcome 1, relating to SSOs in CCME Strategy

which can then be used to determine the appropriate level of action by the appropriate level of government. The proposed structure also allows for new substances to be addressed specifically by addition to s. 4 when it has been determined our society has to handle them differently than they currently are and that municipalities should be the level of government responsible for handling them.

To address the public perception issues of emerging contaminants, CWWA believes that Environment Canada and Health Canada have a duty to issue clear public statements concerning the issue to resolve public concerns and pressures on municipalities or must, in the alternative, regulate the many consumer products which may be the source of such contaminants.

## **COMPLEXITY**

The regulations are drafted in a style which is very complex. It is very difficult to follow the requirements for a particular situation because of the extensive cross-referencing among sections, the decision points in the requirements and the technical nature of the regulations. This regulation must be interpreted and applied at nearly 4000 wastewater treatment plants, large and small, across the country. The CWWA members reviewing these Regulations include those from among the largest and well resourced wastewater utilities in the country and having considerable difficulty understanding the regulation. They are uncertain whether some of the comments herein accurately reflect the proposed Regulations. How can small municipalities be expected to do so? We acknowledge that the issue is complex, and that the regulation must apply under a wide variety of circumstances, but surely more can be done to make it clear what is being asked of municipalities. What has happened to the policy of plain language Regulations?

The complexity of the regulations is exemplified by a flowchart made by a CWWA member in a lengthy effort to comprehend the proposed requirements. They ended up with three 11 x 17 sheets, densely covered with geometric boxes of different shapes, colours and arrows, and still could not be certain that they had correctly deciphered what is asked of them (see Annex B).

It is also possible that concerns related to other deleterious substances, described above, because it is unclear whether these Regulations would supersede the more general requirements under section 36 (3) of the Act itself.

Please also consider, for example, the opaque style of s. 4 (3):

- *The averages referred to in paragraphs (1)(a) to (c) and the maximum referred to in paragraph (1)(d) must be determined based on samples of effluent referred to in subsections 7(1) and (3) in accordance with subsection 7(2), or s. 30 (i):*
- *the concentration of un-ionized ammonia determined in accordance with the formula set out in paragraph 29(1)(c) in the water in four samples taken, at the same time on or about midday during the month of August, from a depth of not more than one metre below four points on the surface of the water — each of which is 100 m from the point of entry where effluent is deposited in that water via the final discharge point — that are equidistant from each other with the maximum distance between each of those four points but, if that water is a watercourse, the four points must be downstream from that point of entry..."*

Other examples of the complexity of the Regulations' that will make compliance much more difficult and expensive without any commensurate public benefit include:

- complex calculations of running averages, instead of the much easier system of using prior calendar year averages. (No explanation has been given for following this approach.)
- the reporting of large quantities of (expensive) data than is reasonably required. Not only is this vast amount of additional data unnecessary and wasteful, it may outstrip testing capacity in several regions of the country and we are not sure that the reported data will be used effectively and fairly. Take for example, the proposed sampling frequency in s. 7 is excessive. Section 7(3) should be removed -- if system operators voluntarily take additional samples for their own purposes, they should be free to focus their analytical dollars on the purpose for which they took the samples.<sup>3</sup> In s. 8, quarterly samples should be adequate for large systems, if they have passed the acute lethality benchmark for the previous 12 consecutive tests.

If it is not possible to adopt a different drafting style, extensive guidance documentation for the various scenarios which the regulations covers is highly recommended. For example, it is extremely difficult to determine how the regulations apply to seasonal discharges from lagoons, which a very large proportion of municipalities employ to treat their wastewater. Our Detailed Comments in Annex A identify many technical items which require clarification.

To repeat, CWWA wonders whatever happened to the policy of plain language drafting.

## **COMBINED SEWER OVERFLOWS**

The proposed treatment of Combined Sewer Overflows (CSOs) is a major departure from the "National Overflow Standards" contained in the CCME Strategy and is of great concern to our members. Section 22 (t) of the regulations requires municipalities to develop plans to "eliminate" CSOs.

CSOs are an integral and necessary consequence of many sewage systems across the country. Combined sewer systems were lawfully designed and constructed. In many cases, their design and construction were specifically approved by all appropriate regulatory agencies and met standards of design and construction in force at the time. Early urban areas used CSOs because they were considered a best practice at the time, again from the perspective of protecting public health. Elimination of CSO discharges is extremely difficult, if not impossible for some older combined sewers. The difficulties include both practical engineering constraints and costs to separate such systems or to capture and store all wet weather flows to "eliminate" discharges. As such, "elimination" is unreasonable, impractical, and enormously expensive; we note that the

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<sup>3</sup> On the other hand, system operators should report all analytical data from such samples, so that they do not pick submitted samples from their "best days".

extra billions required to eliminate CSOs are nowhere mentioned in the Regulatory Analysis Statement.

It is also unreasonable to treat discharges from combined sewers as if they were “spills”, as proposed in Part 3. Discharges from combined sewers are not “out of the course of normal events”. CSO discharges are intended to occur, and do occur as a direct result of certain weather conditions. As such, the required elements of a response plan as required under s. 42 are meaningless in relation to a CSO: no one needs to “muster to the scene” and they do not need “response equipment”; there is nothing they can do at the scene. There is usually no point in alerting anyone - they will know it is raining if they look outdoors. There is rarely anything that needs to be done or can be done once a CSO discharge has begun, and such discharges are likely to occur simultaneously all over a municipality. (Halifax, for example, has more than 30 CSOs; in a heavy rain, they may all discharge.) It would therefore be wasteful and unproductive to require that they be reported to a rapid spill response centre. Nor is there any reasonable way for our members to provide the information proposed in s. 43 in relation to CSOs. This is an (another) example of a theoretically complete regulatory requirement, which makes no logical or practical sense.

It is also important to note that many of the most powerful tools to reduce storm water flows are outside municipal control, or would best be adopted by senior levels of government. For example, building codes issued and enforced by Provinces should do far more to require on-site management of stormwater. The United Kingdom adopted national rules on site area charging, to dramatically reduce wet weather flows to municipal sewer systems. Because the rules were national, municipalities were not faced with industrial flight or arguments with developers on applicable standards. CWWA would be glad to work with you to explore such options. Again, this is an example of where some regulatory requirements would be best imposed at a senior level of government.

CWWA has interpreted the phrasing in s. 22 (t), “...after the period authorization for which the authorization is sought,” to mean that work on CSOs is not bound by the 10-, 20- and 30-year timelines which would normally be specified in a transitional authorization. If so, this is appreciated. A clarification of this would be greatly appreciated. However, it is unclear whether any judgement will be related to the plans required under s. 22 (t). Again, clarifications would be very beneficial.

It must be clarified in the Regulations that discharges from existing CSOs are not illegal under the *Fisheries Act*. Having said that, CWWA’s members recognize that it is undesirable to discharge raw sewage into the natural environment, and are willing to work toward the National Overflow Standards in CCME Strategy:

"The national standards for combined sewer overflows are:

- no increase in combined sewer overflow frequency due to development or redevelopment, unless it
- occurs as part of an approved combined sewer overflow management plan;
- no combined sewer overflow discharge during dry weather, except during spring thaw and

- emergencies; and
- removal of floatable materials where feasible."

## **HARMONIZATION**

CWWA members strongly support the “one-window” regulatory approach touted in the CCME Strategy. The Strategy, which the regulation is supporting, sets a timeline of 3 years from February 2009 for equivalency agreements with the provinces and territories to be established. However, with the regulation reporting requirements becoming effective before February 2012, it is a virtual certainty that at least some jurisdictions will have dual reporting requirements in the first months or years of the regulations (it is noted that the Strategy is non-binding and there is no penalty imposed on the Ministers by the Ministers for failure to comply). It is suggested that the progress toward equivalency agreements be evaluated prior to the publication of the regulations and if agreement as re not impending in the near future, the Regulations be delayed until at least the CCME timeline for agreements is complete.

CWWA has stated above that municipal wastewater facilities currently operate under regulatory frameworks generally and specifically imposed by the Provinces and Territories. Additionally, the construction of facilities is often affected by multiple independent assessment and approval processes imposed by both federal and provincial/territorial environmental and non-environmental statutes which are very time-consuming and expensive. These additional requirements (depending on the nature of the construction of a new facility) can include approvals respecting transportation services, protection of species at risk, respect for aboriginal rights, etc. All of which have their own timelines and processes to be followed. Therefore, in addition to harmonization between these Regulations and Provincial and Territorial environmental regulations for municipal wastewater facilities, the CWWA sees a need for harmonization between environmental and non-environmental agencies. It is understood that this will take some considerable time and it is not implied the Regulations should be delayed for this purpose.

Finally, there is the question of, “Who should regulate?” There are a number of examples where regulatory requirements are being placed on the municipality rather than being introduced at the level of either the province or territory or the federal government. The three levels of government should work together as partners in managing effluent issues and not as adversaries with requirements being placed solely on the municipalities. If for example we are going to control CSOs, one thing that would be beneficial would be changes to the Building Codes to require storm water to be managed on-site and not discharged from the property; this requires concerted action at the provincial/territorial (or federal) level, not at the municipal level. We would hope that Environment Canada and the other members of CCME would help work to that end.

## **DETAILED COMMENTS**

CWWA has attached the detailed comments collected from our members in Annex A. It may be that you have not received these directly and individually from our members and they should all

be considered. Many of these relate to technical details of the regulation which must be corrected or serve as matters of interpretation suitable for guidance documents if they can not be clarified within the regulations themselves. If there is anything from this list Environment Canada needs more information on, CWWA would be pleased to obtain that for you. Please do not hesitate to contact CWWA in this regard: Kara Parisien at (613) 747-0524, select 4 or via email to: kparisien@cwwa.ca.

The following technical matters are particularly important and are therefore included herein. Please note other specific comments in Annex A may also relate to them.

### **Environmental Effects Monitoring**

CWWA feels expects the <1:10 mixing at 100 m criterion will capture most wastewater facilities. In rivers in particular, pluming occurs which greatly reduces the mixing downstream.

This biological monitoring in Part 2 of Schedule 2 is very specialised and will require that consultants be retained for a large number of facilities and we are concerned there is not sufficient capacity in the consulting sector to deal with this. Also, costs are not insignificant and CWWA members are uncertain of the benefits. The costs are estimated to be about \$50,000 per facility per study. Since the monitoring which has to be done is the same for a small facility as for a large facility, costs are proportionately greater. The cost burden will also be greater for municipalities with multiple wastewater treatment facilities. Further, the environmental effects monitoring program can go on for about 15 years depending on whether effects are observed. There are almost certain to be some effects downstream of a wastewater treatment facility discharge, but is unclear whether these are detrimental to the ecosystem or not. More fundamentally, members expect it will be difficult to distinguish between the effects of wastewater effluent and the many other environmental stressors affecting fish populations, including invasive species, climate change, agricultural runoff, boat traffic, and natural fluctuations in prey and predators. This too is an example of a requirement that makes theoretical sense, but may not be practicable.

As such CWWA has a number of suggestions with regard to environmental effects monitoring. Similar to acute lethality, a review of preliminary data should be conducted. In the circumstances outlined in Schedule 2:

- A preliminary review be conducted after the evaluation of applicability specified in s. 14 (1). At that time, it is suggested that municipalities be allowed to take an upstream/downstream or watershed approach or conduct more limited monitoring representative of the whole if the scope and impacts of the program are deemed to be too onerous.
- The first two rounds of environmental effects monitoring would proceed as proposed. At that time, studies would cease pending an analysis of the data collected. CWWA would be pleased to participate in this review with Environment Canada. It could then subsequently be determined how to proceed with this program in the future.

CWWA also notes that the Water Quality Monitoring Studies in Part 1 of Schedule 2 includes monitoring of the following parameters, which are not governed by the Regulations or by the provincial regulators; from Schedule 2, Part 1, s. 2 (1) (c):

- (v) alkylphenol ethoxylates,
- (vi) ethinylestradiol,
- (vii) 17 $\beta$ -estradiol, and

(viii) estrone

CWWA understands the motivation behind studying the emerging concerns represented by these substances. In investigating this potential monitoring requirement, however, they have found a shortage of laboratories which offer analysis of all these substances. It is noted that the works reporting these substances has often been conducted by government agencies or universities. In this regard, CWWA notes it may be difficult to arrange these analyses. Also as noted generally, the criterion for Environmental Effects Monitoring is expected to capture a large number of wastewater facilities. It is unclear why such a large amount of information is required to evaluate this emerging issue. CWWA notes that Shirley Anne Smyth of Environment Canada is currently conducting a comprehensive study of such substances and more in municipal wastewater treatment facilities under the Chemicals Management Plan. As with the other aspects of Environmental Effects Monitoring, this requirements needs to be subject to a preliminary evaluation, in this case to determine if this should proceed at this time.

CWWA asks if the cost of collecting and reporting of this data has been estimated, and if the cost is in the RIAS. We note that Health Canada has recently embarked on a data collection process of sampling and analysis for some emerging contaminants at its expense and it is suggested that Environment Canada should follow suit rather than transferring this cost to municipalities.

### **Temporary Authorization - Ammonia “mixing zone”**

CWWA feels that it will be rare that a facility exceeding the discharge standard for ammonia will be able to meet the in-stream standard “100 m from the point of entry for the final discharge”, particularly in flowing streams where pluming will occur. It feels that another approach to this mixing zone should be allowed, perhaps a proportion of stream flow. We would be pleased to meet with you to discuss alternatives, such as the mixing zones discussed for other purposes in the CCME Strategy. Also, as noted above, there is no authorization which deals with this scenario.

It is also suggested that the “mixing zone” criteria in the temporary authorization for un-ionized ammonia ( $\leq$  chronic guideline at 100 m) be applicable re: a NH<sub>3</sub>, BOD and SS transitional authorization in cases where good mixing is achieved.

### **Reporting**

It is CWWA’s view that Federal and Provincial regulators will be deluged with outline reports of compliance.<sup>4</sup> Costs (to municipalities) should only be incurred if they provide a public benefit. In our experience, environmental regulators can barely cope with the flood of data that they already receive, and it seems unlikely that any public benefit can be achieved by requiring us to send, or them to review, routine reports as set out in the regulations. Also, municipalities see this as an extra expense with potentially no benefits in the absence of any information on how this data is

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<sup>4</sup> sections 18, 19

to be utilized. Instead, CWWA recommends that test reports should only be submitted to regulators when there has been an exceedance of the national standards and for the subsequent 4 quarters. After four consecutive quarters showing compliance with applicable standards, we suggest the reporting should be reduced to annual reporting at the discretion of the municipality. Consistent with our concerns for acute lethality, we believe the requirement for reporting following acute lethality should be dropped until the whole issue has been resolved.

## **CONCLUSION**

For all these reasons, it is CWWA's view that the draft regulations require significant revision and redrafting. At a minimum, the regulations should be clear and easy to understand. In terms of content they should:

- provide municipalities and their staff with reasonable options for complying with the law while still providing an essential public service;
- be clarified as much as possible;
- follow the CCME Strategy in relation to CSOs; and
- require data and reporting only when they produce a commensurate public benefit.

CWWA also respectfully requests that Environment Canada give municipal councils an opportunity to discuss the very important cost issues with both senior levels of government before any further steps are taken to bring these requirements into effect.

Given the scope and complexity of these regulations and the impact on civil society and municipal financial burdens, CWWA recommends that the regulations should be subject to a Parliamentary review after they have been in effect for five years.

Attachments:

Annex A – detailed comments

Annex B – flow charts of the Regulations



## **ANNEX A: COMPILATION OF DETAILED COMMENTS FROM CWWA MEMBERS**

Also attached to electronic submission as “Compiled CWWA Comments on FA Regs - Final for Position Statement.doc”.

#	Section	Issue	Comment
1	0.1. General	Complexity - Technical	Can the statistical standard of error be used for a low number of samples in evaluating compliance?
2	0.1. General	Complexity - Technical	The regulation does not seem to be specific to municipal wastewater systems. Does it also apply to privately owned systems?
3	0.1. General	Complexity - Technical	It is extremely difficult to determine however the regulations apply to seasonal discharges from lagoons.
4	1 Definitions: biochemical OD	Complexity - Technical	Section 1: the definition for “biochemical oxygen demanding matter” is self-contradictory since certain chemicals, when dissolved in water can consume dissolved oxygen in the absence of biological involvement.
5	1 Definitions: blackwater	Complexity - Technical	s1, definition of “blackwater” is a circular reference and doesn’t define “blackwater”. It also refers to “greywater”, but “greywater” is not defined.
6	1 Definitions: blackwater	Complexity - Technical	Section 1: Sewage in a large municipality / regional district would include sanitary waste, industrial waste and commercial waste. This does not seem to be reflected in the definitions for blackwater and greywater. Should these not be more completely defined in the regulation?
7	1 Definitions: blackwater	Complexity - Technical	The definition of “blackwater” is insufficient, in that it makes reference to the term being defined. No actual definition of the term “blackwater” is provided. This also affects the definition of “wastewater”, which includes reference to the term “blackwater”. This term is not commonly used in legislation, nor was it used in the CCME Strategy.
8	1 Definitions: blackwater	Complexity - Technical	There should be a definition for black water and suggest "Blackwater is wastewater containing fecal matter and urine."
9	1 Definitions: suspended solids	Complexity - Technical	In the definitions on page 4, the definition of suspended solids states "“suspended solids” means any solid matter that is present in effluent." This definition would include dissolved solids and should be amended to "measure of particulate weight obtained by separating particles from a water sample using a filter". The

#	Section	Issue	Comment
			CCME model bylaw uses, "Insoluble matter in liquid that is removable by filtration, as determined by the appropriate procedure described in Standard Methods."
10	13 Accredited Laboratory	Complexity - Technical	In item 13 <b>should allow for pH testing by plant that is not accredited</b> since pH testing is best done out in the field.
11	13 re: 8(2)	Complexity - Technical	The availability of labs across the country accredited for acute lethality testing is limited. Some our members have found they will have to ship wastewater considerable distances. Will you be initiating a program to encourage labs to develop rainbow trout acute lethality testing? Is wastewater effluent a dangerous good for shipping?
12	14 (1) Environmental Effects Monitoring	Complexity - Technical	We need guidance on acceptable methods to determine whether effluent represents 10% of total flow at 100 m.
13	14(1) Environmental Effects Monitoring	Complexity - Technical	No detail is provided on how the determination is to be made whether water at 100 meters from the final discharge point is comprised of more than 10% effluent. This may require significant levels of study to determine receiving water flows and concentrations, and methods will differ significantly between stream, river, lake and marine receiving waters. The regulations must define acceptable methods for making this determination. The single-day determination during August-September 2013 timeframe may not allow for completion of this determination for all facilities. Halifax Water owns and operates 15 wastewater treatment facilities, each of which will require this determination. Making this determination on the basis of an annual "bulk flow ratio" as per Schedule 3 would be more appropriate.
14	14(6) Environmental Effects Monitoring	Complexity - Technical	What constitutes an electronic signature? Presumably this will be clarified in the electronic format specified by the Minister.
15	14, Sched 2 Environmental Effects Monitoring	Complexity - Technical	Yearly freshets are capable of moving benthic communities around and could hamper interpretation of the benthic invertebrate testing specified in Schedule 2.
16	14, Sched 2 Environmental Effects	Complexity - Technical	The proposed regulation (Schedule 2, Part 2) may be analytically overly simplistic for the complexities of the receiving

#	Section	Issue	Comment
	Monitoring		<p>environment of south-western BC.</p> <p>a)The monitoring of fish is problematic because they move around from place to place, especially in the estuary.</p> <p>b)The Fraser River sediment transport regime prevents annual invertebrate monitoring so the monitoring program is unsuitable for estuaries.</p> <p>The reference areas are changing over time (in Georgia Strait) due to climate change and ocean current variability (pacific decadal oscillation)</p>
17	14, Sched 2 Environmental Effects Monitoring	Complexity - Technical	Items (v)-(viii) in Schedule 2, 2(1)(c) are not typical parameters in the sewage business and wonder what monitoring Environment Canada has done to warrant their inclusion in the regulation?
18	14, Sched 2 Environmental Effects Monitoring	Complexity - Technical	Has Environment Canada estimated the number of environmental effects reports it will receive from municipalities for the 4,000 sewage treatment plants? Do you have sufficient budget to have the reports reviewed within six months? Is there sufficient number of consultants to do the work for municipalities?
19	14, Sched 2 Environmental Effects Monitoring	Complexity - Technical	Definition of “exposure area” should be expanded to clarify how it applies to the benthic invertebrate community.
20	14, Sched 2 Environmental Effects Monitoring	Complexity - Technical	The “area in which fish exposed to effluent” needs to be defined with greater certainty. Is this 50% effluent, 10% effluent, 1% effluent, et cetera.
21	17 Monitoring Report	Complexity - Technical	In Section 17, we understand monitoring reports are required for final discharge points only. Is this correct?
22	17 Monitoring Report	Complexity - Technical	<b>It is recommended that the quarterly reports be submitted when there has been an exceedance to the national standards or acute toxicity and for the subsequent 3 quarters if there has been no exceedance or acute toxicity and otherwise annually within 90 days of the new calendar year.</b> Reporting of data that meets compliance should not bog down the regulators. There are more than 4,000 sewage treatment facilities in Canada and a reasonable method to keep costs down would to require reporting when there is a compliance failure.

#	Section	Issue	Comment
23	18-19 Records	Complexity - Technical	In sections 18 and 19 for record keeping, there is a time frame listed that says the records could be disposed of after 5 years. <b>It is recommended that a two year time be put in the regulation.</b> It is my understanding that charges cannot be laid after two years.
24	21(1) Transitional Authorizations	Complexity - Technical	21(1) and (2) both seem to be based on annual averages. Would this be for all results collected for both? Particularly w.r.t (2), this seems out of synch with the rest of the requirements re: ammonia in the regulations which focus on the maximum concentration observed.
25	21(1) Transitional Authorizations	Complexity - Technical	s21(1) "expressed on an annual basis": Does this mean "calculated annual average(s)"? If so, this could be expressed more clearly. (Wording could be clearer in 21(2), as well.)
26	22(f) Application for Transitional Authorization	Complexity - Technical	<p>The intent of sub-section 22 (f) is not clear. Is the requirement to submit, within 18 months (S. 21(4)), a plan to bring each facility into compliance with the national standards? If so, this is an onerous requirement, as such plans may take significant time and resources to prepare. The required content for such a plan should be specified. There may not be sufficient local consulting capacity to allow completion of such plans.</p> <p>Sub-section (t) requires, for any facility for which the compliance timeframe depends on points allocated for CSO discharges under Schedule 4, "a plan for the modifications to the wastewater system that are envisaged to eliminate ... the deposit of effluent ... via any overflow point of a combined sewer". This is inconsistent with the CCME Strategy, which clearly states that the national goal is to eliminate SSOs, but does not state that goal for CSOs. Halifax Regional Municipality (HRM) has extensive areas of combined sewers, and it is impossible on both practical and financial terms to separate such systems or to capture or store all wet weather flows to "eliminate" discharges.</p>
27	22(f) application of transitional authorization for NH <sub>3</sub> , CBOD and SS	Complexity - Technical	Can the "mixing zone" criteria in the temporary authorization for un-ionized ammonia apply re: a transitional authorization? (i.e., would consistently meeting the surface water quality guideline at 100 m be an acceptable outcome with respect to ammonia and acutely lethality solely related to ammonia) for the purpose of the plan to submitted under 22(f)
28	29(1)(c) Temporary Authorization	Complexity - Technical	The instream ammonia concentration to be met under a temporary authorization for ammonia is based on a chronic value and should be based on a long-term average. Calendar month is suggested.
29	29(1)(c) Temporary	Complexity -	"100 m from the point of entry where effluent is deposited in that water via the final discharge point" is a very limited mixing zone.

#	Section	Issue	Comment
	Authorization for NH <sub>3</sub>	Technical	This would require that approximately 100-fold mixing occurs within 100 m, a situation which is expected to be rare, particularly in flowing streams where pluming will occur.
30	3 Deleterious Substances	Complexity - Technical	The use of "biochemical oxygen demanding matter" in s3(a) may be too general in that it includes substances beyond those measured by the test for "carbonaceous biochemical oxygen demand" (CBOD).
31	30 Application for a Temporary Authorization	Complexity - Technical	Section 30: The wording of sub-section (i) is not clear regarding the location and spacing of the four required sampling points.
32	4(1) General Authorization and Limits	Complexity - Technical	Confirmation is required that the criterion under the Temporary Authorization for Un-ionized Ammonia whereby you have to meet the surface water quality guideline for ammonia 100 m does not apply if are meeting the effluent standard in 4(1)(d).
33	4(1) General Authorization and Limits	Complexity - Technical	It is unclear whether a facility meeting the conditions in 4(1) requires a written authorization.
34	4(2) Compliance Analysis	Complexity - Technical	Part 4(2) on page 7, defines the averaging period of quarterly if the effluent volume is greater than or equal to 17,500 m <sup>3</sup> per the previous 4 quarters and monthly if the volume exceeds 17,500 m <sup>3</sup> in the previous 12 months. This type of definition is problematic for sewage treatment plants near the cut off value. <b>It is recommended that the period be changed to the previous calendar year to simplify the determinations.</b>
35	4(3) Compliance Analysis	Complexity - Technical	Part 4(3) is totally confusing. Could this be written more clearly?
36	42 DONCEs	Complexity - Technical	There are occasions when plugging in a wastewater system will cause the system to surcharge and wastewater to enter a storm sewer which would then convey the wastewater to the local aquatic environment. Would this be considered a DONCE?
37	42(2)(a) DONCEs	Complexity - Technical	Guidance is needed on examples of "deposit out of the normal course of events that may reasonably be expected to occur from the wastewater system and that may reasonably be expected to result in damage or danger to fish habitat or fish or the use by man of fish". "Reasonable" is a subjective term.
38	44 Coming Into Force	Complexity - Technical	Does "Deposits out of the Normal Course of Events" in Schedule 8 include combined and/or sanitary sewer overflows and wastewater treatment plant bypasses as may occur during heavy or extreme weather events?

#	Section	Issue	Comment
39	5(2) Volume Measurement	Complexity - Technical	Part 5(2) (a) specifies that the measurement be by continuous measurement if over 2,500 m <sup>3</sup> per day. Again <b>the regulation refers to running averages and this should be changed to calendar averages.</b>
40	7 Monitoring Requirements	Complexity - Technical	We note that the regulated substances consist of BOD, TSS, Chlorine, and un-ionized ammonia. Three of these are clear in that the reference trail can be followed to the sampling and the analytical methods. However, this is not the case for Chlorine. Subsection 7(2) requires a composite sample; however, Chlorine is consumed and therefore a composite sample is not appropriate. In addition, the analytical method is never stated. We also note that it is not possible to scientifically measure a concentration of 0.02 mg/L in a wastewater matrix. That is why the CCME strategy allowed for the measurement of excess dechlorinating agent as proof of meeting a concentration of less than 0.02 mg/L of Chlorine.
41	7(3) Monitoring Requirements	Complexity - Technical	In item 7. (3) there is a requirement to do the testing for all the parameters should additional sampling be done "for more certainty". <b>There should be a statement that if samples are done more frequently than required, then all the samples should be reported so that submitted samples are not picked from the "best days".</b>
42	8 Acute Lethality Testing	Complexity - Technical	Section 4 and Section 8 are unclear as to the consequences of one or multiple acute lethality LC <sub>50</sub> test failures: <ul style="list-style-type: none"> <li>a) There is no clear threshold to be deemed 'acutely lethal' which would then presumably result in the need for further authorization.</li> <li>b) At what point of the testing process set out in Section 8 is it necessary to apply for an authorization? For example, does test failure require an application under Part 2, Transitional and Temporary Authorizations to Deposit, for the discharge?</li> <li>c) The determination of an acutely toxic final discharge is problematic. We see in section 8 repeat tests are prescribed. However, it appears that the repeat tests, in subsection 8(3), unlike the first test, no longer allows for the procedure for pH stabilization as provided through EPS1/RM/50. In relation to subsection 8(3) is the phrase "but in accordance with section 6 of the reference method" intended to exclude pH stabilization procedure as referred to in paragraph 12(b)? This would be extremely problematic for Metro Vancouver, in fact depending on how this is interpreted, some of our</li> </ul>

#	Section	Issue	Comment
			secondary plants would periodically fail the test.
43	8 Acute Lethality Testing	Complexity - Technical	In assessing ammonia toxicity, detailed laboratory protocol would be better presented in a separate guidance document as noted herein. Also, for pH determination at 15 degrees C, protocol and definition clarity is required.
44	8 Acute Lethality Testing	Complexity - Technical	WET testing has to be done on the same sample as NH3 or you could get non-toxic one day and > NH3-N limit another.
45	8(1) Acute Lethality Testing	Complexity - Technical	In item 8. (1), the frequency <b>should be based on calendar year</b> not and not a running average. See previous comment under General
46	8(1) and in general	Complexity - Technical	“Calendar year” means the year from January 01 – December 31. Is this the intent?
47	8(3) Acute Lethality	Complexity - Technical	The Procedure for pH Stabilization EPS 1/RM/50, as described in s. 12 (b) should be allowed for additional tests required under 8(3).
48	S1 definitions	Complexity - Technical	Definition of combined sewer overflow necessary – there are a number of different conventions: the physical structure, an escape from the sewer system (e.g., back-up and surcharging of manholes), rather than the bypass-type situation the regulations are based on; i.e., there are different usages of this term
49	Sched 4, 3(b) CSO Points	Complexity - Technical	In Schedule 4, item 3(b), we understand that this language refers to a river or stream i.e., watercourse only. Is this correct? If, so this should be specified
50	0 RIAS	Costs	Combining willingness to pay and property value measures of benefit probably entails double counting of benefits. It is also difficult to do property value based assessments rigorously. Sounds like this benefit cost analysis should be peer reviewed.
51	0.1 General	Costs	Transitional Authorizations are required to discharge non-compliant effluent during the timeframe within which the plant must become compliant. This authorization requirement was not anticipated, and imposes an administrative burden.
52	0.2 RIAS	Costs	Enforcement costs average \$564,000 / year over the time period of analysis. This is enough money for perhaps 5 full time enforcement officers for the entire country. And the electronic

#	Section	Issue	Comment
			reporting system will only cost \$40,000 per year. These costs seem low.
53	0.2 RIAS	Costs	No new funding is identified or associated with this proposed regulation. The CWS-MMWE commits the federal and provincial governments to cost-share.
54	0.2 RIAS	Costs	In the Cost-Benefit statement, a total national cost estimate of \$5.9 billion for compliance is provided, which is stated to include both capital and operating costs, as well as other costs such as monitoring. There are no details in the explanation of how this estimate was derived, but it is significantly less than a previous CCME estimate of \$13 billion for capital costs alone, not including CSO and SSO management. Halifax Water estimates that costs for compliance in the Halifax-Dartmouth region of Nova Scotia will be well in excess of \$1 billion over 30 years, so this \$5.9 billion national estimate seems to fall far short of the actual costs. If that is so, then the claimed cost-benefit ratio is therefore inaccurate.
55	0.2 RIAS	Costs	The statement under <i>Community Impacts</i> , that “the proposed Regulations are expected to be affordable to communities” is not supportable. Individual households and businesses are directly impacted by present and future rate increases, so it is not accurate to characterize these as “indirectly impacted”. There will be substantial impact to ratepayers to meet the requirements of the Regulations
56	14 (1) Environmental Effects Monitoring	Costs	100 m from the point of entry where effluent is deposited in that water via the final discharge point 100 m is too restrictive. It is felt this will include small municipalities for which costs will be inordinately high; i.e., upstream/downstream monitoring costs would be the same for a small discharge as they are for a large discharge.
57	14, Sched 2 Environmental Effects Monitoring	Costs	<p>Environmental Effects Monitoring requirements are extensive, including benthos and fish monitoring. Such requirements were not anticipated, and were not provided for in the CCME Strategy.</p> <p>The scope is such that a consulting contract will be required to carry out each study. Environmental Effects Monitoring will be required for all plants where the concentration of effluent 100M from the discharge is &gt;10% of ambient. This will be difficult to determine and may require specific study of each receiving water situation, and must be determined by Dec 31, 2013. Halifax Water currently owns twelve wastewater treatment facilities, and there are three new facilities currently undergoing commissioning. The additional level of study required for this number of facilities is significant. (note repeat of comments</p>



#	Section	Issue	Comment
			included under Environmental Monitoring section by HWRC).
58	6 Flow Monitoring Equipment	Costs	<p>[Can you reference the particular section?]</p> <p>It is recommended that plants greater than 50,000 m<sup>3</sup> per day that nitrify be required to sample weekly. The additional testing is a cost across the country that does not provide any value and this can be an incentive to increase the number of plants to nitrify.</p> <p>If some variation is desired in the sampling days, then the requirement for one day between samples be deleted in the regulation.</p>
59	8 Acute Lethality Testing	Costs	Acute toxicity testing off effluent is required. This raises concerns for local capacity to conduct the required amount of testing for wastewater facilities in Nova Scotia. There is only one small company in NS accredited for acute toxicity testing.
60	8(3) Acute Lethality Testing	Costs	The samples can be adjusted for pH. If a sample is acutely lethal, then samples must be taken twice per month until three consecutive samples are non-acutely lethal. <b>It is recommended that if 12 consecutive tests pass the acute lethality testing, then the plants greater than 50,000 m<sup>3</sup> be done quarterly for acute testing. This is just the flip side of the testing requirement in item 8.(3).</b>
61	0.1 General	CSOs	Combined Sewer Overflows (CSOs) and Sanitary Sewer Overflows (SSOs) do not appear to be addressed by transitional or bypass authorization – is this an oversight or intentional? The CWS-MMWE includes national standards for CSOs and SSOs in Outcome 1.
62	18 Records	CSOs	The Identification Report for each wastewater system is to include the location and receiving water characteristics of all CSO and SSO discharge points. Halifax Water has in excess of 100 wet weather overflow points within the wastewater systems.
63	22 Application for Transitional Authorization	CSOs	There is a requirement for a plan to “eliminate” CSOs (section 22 also ref. s. 25) This is inconsistent with the CCME Strategy, which clearly states that the national goal is to eliminate SSOs but does not state that goal for CSOs. Elimination of CSO discharges is impossible for older combined sewers, and it is impossible on both practical and financial terms to separate such systems or to capture or store all wet weather flows to “eliminate” discharges.
64	22(r) Application for Transitional Authorization	CSOs	If you need a transitional authorization for your final discharge point, and have CSOs, do you have to include them in the point totals to determine the length of the authorization, or is this

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			optional?
65	4(1) General Authorization and Limits	CSOs	If you are meeting all the standards at the final discharge point, but have CSOs are there any authorization requirements?
66	42 Deposit Out Of The Normal Course Of Events	CSOs	Under Consultation - Reporting Requirements, there is a statement that “overflows from combined sewers would be subject to the requirements for deposits out of the normal course of events”. CSO structures are approved components of wastewater collection systems for areas having combined sewers, and as such are anticipated and approved by provincial regulators, not “out of the course of normal events”.
67	42 Deposit Out Of The Normal Course Of Events	CSOs	<p>Section 42: The direction taken here is significantly different from that in the CME Strategy.</p> <p>Deposits out of the normal course of events are not defined. In a combined sewer system, Combined Sewer Overflow (CSO) points are designed and approved system elements, and as such, overflow events from CSOs are anticipated and approved to occur on some regular basis during high flows, and are considered to be part of the normal course of events. Similarly, in separated sanitary systems, most or all pumping stations are designed to have an overflow point (SSO – sanitary sewer overflow) which is approved as an overflow point under conditions of high flow due to inflow and infiltration. Overflows from these CSO and SSO points are quite distinct from emergency events such as leaks, forcemain breaks, pump malfunctions, power failures, etc. which truly are events outside the norm. This section must specify precisely what events leading to deposits of effluent are considered to be “outside the normal course of events”, and should not include designed and approved CSO and SSO wet weather discharge events.</p>
68	43 Notice for Deposit Out Of The Normal Course Of Events	CSOs	Section 43: Similar to S. 42, this section must specify which events require reporting, which should not include designed and approved CSO and SSO overflow events.
69	Sched. 4, item 2 CSO points	CSOs	It has been noted that CSOs are typically not monitored for occurrence of overflows. Can you specify an acceptable method to estimate the # of overflows deposits/yr.?
70	14 Environmental Effects Monitoring	Environmental Effects Monitoring	Environmental Effects Monitoring (EEM) requirements are considerably more extensive than anticipated, including benthos and fish monitoring. The scope is such that a consulting contract will be required to carry out each study. EEM will be required for all plants where the concentration of effluent 100M from the discharge is >10% of ambient. This will be difficult to determine

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			and may require specific study of each receiving water situation, and must be determined by Dec. 31, 2013. Halifax Water currently owns twelve wastewater treatment facilities, and there are three new facilities currently undergoing commissioning. The additional level of study required for this number of facilities is significant.
71	14 Environmental Effects Monitoring	Environment al Effects Monitoring	The application of the criterion, 10% or more of effluent at the regulatory boundary, will likely result in monitoring programs being discontinued at primary treatment plant ocean outfalls and monitoring will likely take place at secondary treatment plant outfalls, which is counterintuitive.
72	14(2) Environmental Effects Monitoring	Environment al Effects Monitoring	For section 14, clarification is required regarding the scope of the evaluation of effluent dispersion ratios. <ul style="list-style-type: none"> <li>a) Subsection 14(2) also does not recognize historic work and effort in documenting comprehensive data. Metro Vancouver has already done this type of work. Can we make use of previous applicable work, rather than redoing work?</li> <li>b) Subsection 14(2) sets the date of August or September 2013. The timing is unrealistic for Metro Vancouver since we need to do this for 5 plants concurrently. Can the measurements be taken in 2012, or 2011?</li> </ul>
73	14(2) Environmental Effects Monitoring	Environment al Effects Monitoring	Subsection 14(2) sets the date of August or September 2013. The timing is unrealistic for Metro Vancouver since we need to do this for 5 plants concurrently. Can the measurements be taken in 2012, or 2011?
74	14(8) Environmental Effects Monitoring	Environment al Effects Monitoring	In sub-section 8 (End of Monitoring), the intent is not clear. Does this mean that no further monitoring studies are required after 2025?
75	0 Legal	Harmonizati on	It was understood that the CCME Strategy contemplates a “one-window” approach to administration and enforcement of the provisions of the Strategy, through federal-provincial agreements. However, it seems that the federal regulations as drafted do not contemplate this, as all the contacts, authorizations, enforcement and reporting relationships within the regulations are federal. If these regulations are brought into force before federal-provincial agreements are in place, the one-window concept will

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			be lost.
76	0.1 General	Harmonization	This regulation does not link with other government regulations and there is no indication of how this regulation will align or harmonize with others i.e., the promised single window approach is not apparent as noted in the CWS-MMWE in Outcome 2.
77	0.2 RIAS	Harmonization	In general the regulations as drafted impose a significant regulatory and administrative burden on municipal water and wastewater operators and utilities, in addition to the very large long-term capital and operating costs associated with compliance with the national performance standards and objectives. We do not believe the federal government should impose additional regulations in connection with the CCME Strategy until firm commitments are in place for federal and provincial financial contributions toward these costs.
78	42 Environmental Effects Monitoring	Harmonization	<p>Response plans are required to address any “deposits out of the normal course of events”. This was not anticipated and imposes an additional administrative burden. Emergency Response Plans are already required by provincial regulators, so this appears to be a duplication of requirements.</p> <p>[BK- I expect you could use the plans you've created for the province. If everything works out the way it should, this will be administered by your province.]</p>
79	0 Legal	Liability	There is no ‘emergency clause’ in the proposed regulations similar to Operating Certificates (OC) under the BC Environmental Management Act. Is the owner/operator <i>liable</i> even if due diligence has been followed? The need to document diligence per the existing OC requirements results in rigorous and attentive management of the system. Also, the CWS-MMWE includes a strategy for SSOs due to emergencies (Outcome 1), which the proposed regulation does not.
80	0 Legal	Liability	We are extremely concerned that non-compliance is a criminal offence.
81	28 Revocation of a Transitional Authorization	Liability	In section 28 if a Transitional Authorization is revoked, what requirements then apply to the facility in question? A wastewater treatment facility cannot cease operation, and it will not be possible to immediately alter or modify any wastewater treatment facility to immediately make it compliant.
82	29-35 Temporary	Liability	Sections 29 to 35 appear to allow the discharge of un-ionized

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	Authorization		ammonia under a temporary (3 year) authorization which is renewable. This is consistent with the CWS-MMWE, however this regulation only allows a transitional [temporary?] authorization so there is no long-term certainty
83	4(1) General Authorization and Limits	Liability	<p>Authorization to deposit deleterious substances is provided under part 4(1) of the regulation with the following conditions:</p> <ol style="list-style-type: none"> <li>1. the average carbonaceous biochemical oxygen demand due to the quantity of biochemical oxygen demanding matter in the effluent did not exceed 25 mg/L;</li> <li>2. the average concentration of suspended solids in the effluent did not exceed 25 mg/L;</li> <li>3. the average concentration of total residual chlorine in the effluent did not exceed 0.02 mg/L; and</li> <li>4. the maximum concentration of un-ionized ammonia in the effluent was less than 1.25 mg/L, expressed as nitrogen (N), at 15°C ± 1°C.</li> </ol> <p><b>This is a beneficial aspect to the regulation protecting the municipality from charges that could be laid by private citizens that a substance was discharged even if there was no impact.</b></p>
84	42 Deposit Out Of The Normal Course Of Events	Liability	The response plan required is extremely complicated the way the section is presently worded because of the very large number of substances which could enter municipal wastewater from ICI and residential sources which could potentially be deleterious and it would take much longer than 45 days to deal with every possible scenario. Limiting this to the deleterious substances named in s3 would be feasible.
85	0.1 General	Liability – Transition Periods	There is a mixture of specific and relative dates in the proposed regulations. It is suggested these all be made specific at the time of publication of the final regulation (unless there is some chance that “registration” could end up occurring on an unpredictable timeline after publication of the final regulations).
86	23(2) Issuance of Transitional Authorization	Liability – Transition Periods	s23(2) The timelines for transitional authorizations in s23(2) are currently 10, 20, and 30 years from Dec. 31, 2009. These should be changed to reference the date <del>or approximate date of publication</del> registration of the final regulations.
87	23(2) Issuance of Transitional Authorization	Liability – Transition Periods	The regulation sets firm completion dates for treatment plant upgrades of 2019, 2029, and 2039 depending on a point system. This is not consistent with the timelines in the CCME’S Strategy for MWWWE which indicated completion dates in Appendix B for treatment plant upgrades of 2021, 2031, and 2041 depending on

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			risk assessments.
88	4 General Authorization and Limits, etc.	Liability – Transition Periods	<p>In the draft regulation there are a number of references to running averages. These averages could move municipalities from one level to another and back again. Volumes of flow are generally higher in the winter during snow melt events and so municipalities could be switch from quarterly to monthly criteria and then back to quarterly in the summer. The regulations require flow meter data to be within +-15% and so there is a wide range of flow built into the regulation. <b>It would provide regulatory clarity on standards if they were based on calendar year averages.</b></p>
89	44(2) Coming Into Force	Liability – Transition Periods	<p>s44(2) We have serious concerns that the regulation is unintentionally creating a period during which municipalities will be highly vulnerable to prosecution, particularly by private interests. While the substances specified in s3 could be argued to be deleterious substances already under the Fisheries Act, the regulation will highlight this.</p> <ul style="list-style-type: none"> <li>• The 24 month delay in the implementation of s4 which grants the “general authorization” [our term] represents a period when even the very best municipal wastewater treatment plants will clearly be discharging deleterious substances without authorization under the Fisheries Act.</li> <li>• It is unclear why s4 is delayed when applications for transitional and temporary authorizations could proceed earlier. However, even the temporary authorization for ammonia is not triggered for two consecutive months or quarters. With a minimum few weeks for processing an authorization, a facility could be out of compliance and not be authorized to discharge for two months or more before receiving a temporary authorisation.</li> <li>• Similarly, an application for a transitional authorization is based on analysis on one year’s data, collection of which may not start in some instances until required by the regulation, leaving the wastewater system vulnerable during the data collection period.</li> </ul> <p>To prevent the regulation from creating this undesired situation, it is necessary to authorize deposits of wastewater from any wastewater system which is undertaking all actions necessary to comply with the regulation during the first 24 months after registration.</p>
90	44(2) Coming Into Force	Liability – Transition Periods	<p>s44(2) There could be an inconsistency in the timing of section 14 coming in force 24 months after the Regulation is registered in that one does not have to determine the condition that triggers the requirement does not have to be determined until August or September of 2013 (s14(2)) if the Regulation is not registered prior to August 2011. The reference to August or September of</p>

#	Section	Issue	Comment
			2013 would have to be changed if there is any delay in the registration of the regulations.
91	5(2) Volume Measurement	Liability – Transition Periods	It takes time to acquire and install continuous measurement equipment and this is not provided in systems that are under 2,500 m3 and then exceed it due to a wet year.
92	s44 Coming Into Force	Liability – Transition Periods	It is noted that municipalities which must introduce new monitoring volume as per ss. 5 & 6, and composition of effluent as per sections 7 and 8 and water and will need some time to arrange this and this can't be done before the final Regulations are published. Therefore some delay is required for these and any other related sections coming into force. Six months is suggested.
93	0.1 General	SSOs	There is little mention of SSOs. Are there any requirements for them?
94	0.1 General	Style	Suggest that the detailed prescriptive components of this regulation (for example the environmental effects monitoring studies) should be removed from the regulation, and reference a supporting guidance document which could then be modified as needed. This approach was used for the Pulp & Paper Environmental Effects Monitoring (EEM) Program, and Metal Mining EEM Program.
95	0.1 General	Style	It would seem American English has been used for spell-checking.
96	4 General Authorization and Limits, etc.	Toxicity	S4: The handling of toxicity remains to have serious problems. There seems to be an assumption in s4 and most of the regulation that toxicity will be due only to ammonia. However, this may not be true, and this seems to be acknowledged in s29 in one of the conditions allowing an application for a Temporary Authorization to Deposit Un-Ionized Ammonia: "any acute lethality of the effluent is due only to the presence of the un-ionized ammonia in the effluent." There are numerous substances which could enter municipal wastewater from ICI and residential sources which could cause a lethal response in rainbow trout fingerlings on their own, or synergistically with or without ammonia. The presumption may be that such "other toxicity" will show up as an adverse impact on the biological processes in a wastewater treatment plant and be detected that way, but the biological processes are typically much less sensitive to such pollutants than

#	Section	Issue	Comment
			<p>higher life forms. The extent of the presence of toxicity in municipal treatment plant effluents is unknown in the absence of the collection of a considerable amount of data and very complex investigation of causal relationships.</p> <p>No avenue for being in compliance with the regulation is provided if lethality is due to some substance other than ammonia or synergistic effects. <u>It is suggested that the condition of non-acutely lethal effluent not be applied as a condition of authorization of discharges until more is known on this subject; i.e., the monitoring, reporting and investigation of effluent toxicity could remain as requirements and the data analyzed before any regulations setting toxicity requirements are finalized.</u></p>



# ANNEX B: DRAFT FLOWS CHARTS FOR PROPOSED WASTEWATER SYSTEMS EFFLUENT REGULATIONS

Also attached to electronic submission as “Effl\_Regs\_logos.pdf”.

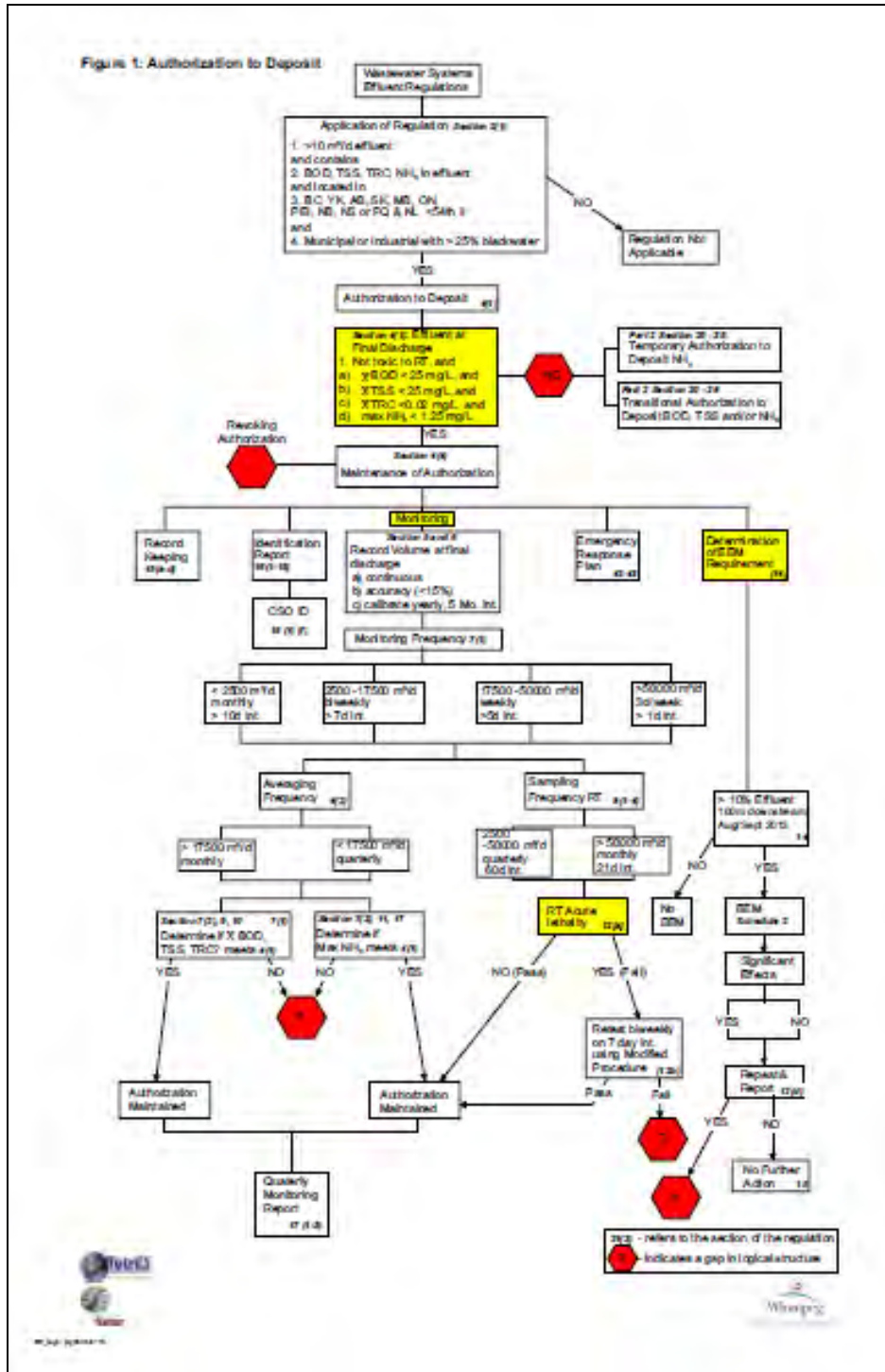


Figure 2: Transitional Authorization to Deposit

