DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

Thames – Sydenham and Region Drinking Water Source Protection

Source Protection Committee Discussion Paper

Report to	Chair and members Thames – Sydenham and Region Source Protection Committee	**Agenda #**	2010.04.7f
Cc	SP Management Committee	**Date**	May 6, 2010
Prepared By	Chris Tasker, Project Manager and Chitra Gowda, Technical Coordinator		
Re:	Concern about application of chemicals at Rondeau Bay		

Background

1. Gary Eagleson of Chatham visited the LTVCA during the posting of the *draft proposed* assessment report (AR) and brought up concerns on continued and clandestine application and levels of herbicides in the water at Rondeau Bay and the impact on flora and fauna at the Bay and at the water intake at Erie Beach. He provided copies of the following however he did not submit a formal comment on the AR at that time.
    a. his correspondence dated January 29, 2010 to Lisa Guenther-Wren, Fisheries Biologist of LRG Environmental, Markham,
    b. undated letter from Michael E. Parker, Air, Pesticides and Environmental Planning Supervisor, MOE to residents of the Rondeau Bay area. This letter was about illegal and possible harmful application of aquatic herbicides in Rondeau Bay. The letter states that analytical results of water and sediments sampling at the Bay indicate the unacceptable presence of herbicides, mainly 2,4-Dichlorophenoxy acetic acid (2,4-D). This was an outreach effort by MOE intended to prevent future occurrences or have them brought to their attention, as MOE was unable to determine who was involved in what appeared to be illegal pesticide application and
    c. a copy of MOE Report No. C96513 dated October 25, 2002, obtained by Gary Eagleson from the MOE. This is a data analysis report for water and sediment samples taken in July 2002 at Rondeau Bay and analysed for 2,4-Dichlorophenoxy acetic acid (2,4-D), diquat, paraquat, AMPA (alpha-amino-3-hydroxyl-5-methyl-4-isoxazole-propionate, or aminomethyl phosphonic acid) and glyphosate. Results indicate a level of 0.066 mg/L of 2,4-D in the water sample but less than the method detection limit (MDL) of 0.06 µg/g in sediment, 0.05 µg/g of diquat in the sediment sample and less than the detection limit in water; while paraquat, AMPA and glyphosate measured less than the detection limit in water and sediment samples.
2. 2,4-D is no longer available for public sale, although in 2002 it was available. It is still available to licensed applicators

3. Gary Eagleson provided the attached comments on the *proposed* Assessment Report expressing concerns about contamination of raw water at the Chatham/South Kent (Erie Beach) intake by suspected clandestine application of pesticides at Rondeau Bay.
4. According to the MOE Liaison Officer Program Update dated March 24, 2010 which provides considerable background on the permitting process pertaining to the aquatic application of pesticides,
    a. As part of the MOE permit application review process, ministry staff circulate a permit application to MNR, DFO and/or the federally regulated waterways in accordance with signed agreements.
    b. The permit applicant is required to notify all adjacent landowners, lessees or affected parties of the proposed treatment, and any comments /objections received will be considered by the Director in making his/her decision in processing the permit request.
    c. The permitting system authorizes the amount of pesticide that may be used; sets terms and conditions under which the pesticide may be used; and specifies treatment location and dimensions.
    d. As pesticide permits are required on an annual basis, ministry staff monitor and review permit applications and address any compliance issues that may arise and affect subsequent treatments.
    e. Any person who uses a pesticide is required under provincial and federal legislation to comply with all label statements. Pesticide labels also include water use restrictions for treated area. Any terms and conditions included in a permit issued by the ministry are above and beyond what is required in regulation or on the pesticide label and are intended to prevent excessive and indiscriminate use and further protect human health and the environment.
    f. The terms and conditions of a permit are part of a legally binding document and use of a permit in contradiction with the terms and conditions outlined in a permit is considered a violation of the Pesticides Act and regulations.
    g. Discussion of the relative risk associated with the use of aquatic pesticides is included in the update and it is noted that the risk score would be less than 4 and therefore not a threat.
5. Pesticide spraying permits at the Rondeau Bay are for typically for a 10 m by 6 m area and the permit application is reviewed by the Multi-agency Working Group for Rondeau Bay Aquatic Vegetation Removal, which includes Municipality of Chatham-Kent staff as well as provincial and federal ministry staff. There is no notification of spraying to water treatment plant operators
6. Diquat and 2,4 –D may be removed by the use of activated carbon (Source of information: http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau)

Discussion

1. The outlet from Rondeau Bay to Lake Erie at Erieau is more than 5 kilometers east of IPZ-2 of the Chatham/South Kent intake. Rondeau Bay may however be part of IPZ-3 for this

intake. As such the vulnerability score of this would be less than that of IPZ-2 (likely less than 4 – therefore activities would not be considered a threat (unless contributing to an issue).

2. Through the issues identification work, intake raw water quality was reviewed and pesticides have not been identified at the intake and therefore are not considered an issue. Aquatic pesticide data for raw water is sparse (once a year or less). CA staff reviewed the quarterly treated water quality data for the Chatham water treatment plant (WTP) for 2002. 2,4-D, diquat, paraquat and glyphosate were not detected in the treated water samples taken on February 4, July 30, and October 30.
3. The delineation of IPZ-3 is yet to be undertaken as per Technical Rules 68 and 69, by modeling the contaminant of concern under extreme storm conditions to see if it reaches the intake. The first step is to determine potential areas which could contribute as part of which the Rondeau Bay could be considered. The existing model needs extension to consider this area. At that time dilution and dispersal of the pesticides could be assessed considering the limited life of some of the pesticides, however from discussion with the permit issuers this is not necessary due to the limited extent of application within the Bay and the distance of the outlet from the bay to the intake.
4. Within an IPZ-3 delineated as per Rule 68, an activity is deemed a significant drinking water threat at the location it is carried out, if the modeling shows that the contaminant reaches the intake in amounts that would result in the deterioration of drinking water quality (Rule 130). Under the Clean Water Act, the application of pesticides to land is a prescribed drinking water threat. The application of pesticides to water is <u>not</u> a prescribed drinking water threat. According to the MOE Liaison Officer Program Update dated March 24, 2010, MOE carried out an analysis of aquatic pesticides using the threats assessment process and calculated that the hazard scores were 4 or less for aquatic pesticide use and therefore, they were removed from the threats list. Primarily, the reasons that aquatic pesticide use scored so low was due to the small volume of pesticide used (i.e. a Low Quantity Score), and the fairly rapid breakdown/deactivation of these pesticides (i.e. a low Fate Score). Other activities that are not prescribed drinking water threats may be considered as threats if the SPC identifies the activity to be a drinking water threat, and if information provided by the Director indicates that the hazard rating is greater than 4, however the MOE has already undertaken this analysis and determined that this condition is not met.
5. Conditions are assessed within a vulnerable area. If the delineated IPZ-3 includes the Rondeau Bay, the conditions assessment may be done as per Technical Rule 126, and includes consideration of a situation where the concentration of a contaminant in sediment exceeds a certain guideline in Table 1 of the MOE publication, 'Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act' (March 9, 2004). According to the MOE Report No. C96513, the level of diquat in the sediment sample is 0.05 µg/g. Diquat, however is not in the list of parameters that could be considered under conditions evaluation. The other pesticide levels were not detectable.
6. The application of aquatic pesticides already subject to permitting process which typically includes consideration of drinking water intakes in the area.
7. The illegal application of aquatic pesticides (without or not consistent with permits) is already subject to such measures as fines, prosecution and site remediation.