



MOE Liaison Officer Program Update

Date: December 18, 2009

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1 Terms of reference

All 19 source protection committees have submitted their proposed terms of reference to the ministry for approval. As of Monday, August 17, 2009 all thirty eight terms of reference were approved by the Minister and the decision notices posted to the Environmental Registry.

2 Assessment report

Three draft assessment reports have been posted for public comment and consultation. The three assessment reports are Catfish Creek, Kettle Creek and Mattagami. You can access the reports from the Conservation Ontario Website at:
http://www.conservationontario.ca/source_protection/otherswpreionsindex.htm

The ministry has established a review process for assessment reports. Ministry staff will review the submitted assessment reports and provide a recommendation to the Director for the decision. The final decision on a submitted assessment report is that of the Director.

When the draft proposed AR is available for public comment on the SPA website the ministry may take this opportunity to read the AR. In situations where the ministry observes major errors or omissions with the document the ministry may provide comments to the SPC/SPA. This provides the SPC/SPA an opportunity to make corrections in developing the proposed AR before it is submitted to the Director for formal decision.

New or revised Technical Bulletins:

- Deadstock Disposal (December 2009)
- Methodology for Calculating Percentage of Managed Lands and Livestock Density for Land Application of Agricultural Source of Material, Non-Agricultural Source of Material and Commercial Fertilizers (December 2009)
- Earth (Geothermal) Energy Systems (November 2009)

Technical bulletins completed and sent to PMs in previous Program Updates:

- Delineation of Significant Groundwater Recharge Areas
- Addressing Transportation Threats
- Climate Change Requirements



- Groundwater Road Map
- Surface Water Road Map
- Delineation of Intake Protection Zone 3, Using the Event Based Approach (EBA)
- Constructing Earth Energy Systems in Ontario (Geothermal)

Technical bulletins in preparation:

- General IPZ delineation guidance
- General groundwater delineation guidance
- Provincial lists of threats and circumstances
- Requirements for drinking water threats identified through the semi-quantitative threats based approach

All approval technical bulletins are posted on the Ministry of the Environment web site at <http://www.ene.gov.on.ca/en/water/cleanwater/cwa-technical-rules.php>

3 Information management

- Letter from Ministry of Natural Resources, on November 17, 2009 - Borehole Data Class available from the LIO Warehouse. MNR advised that there is a problem with the Borehole data class. Attribute tables for a small percentage of the water well records have experienced an “attribute shift”. This shift results in instances where well attributes for some records are associated with the wrong well.
ACTION: If you, your organization, partners or consultants have been using water well components from the Borehole data class, please contact us at wrip@ontario.ca or 705-755-1970. WRIP staff can help you determine if this issue impacts your groundwater studies and datasets.
- Version 7.1.2 of the Threat Lookup Database was released on December 16, 2009 on the Conservation Ontario FTP server. This version of the database contains all changes made through the technical rules amendments and other corrections identified in previous communiqués. Therefore, this database represents the information used to generate the Tables of Drinking Water Threats within the November 2009 Technical Rules.
 - This version replaces Version 7.1 of the Threat Lookup Database that was released on November 19, 2009 by MNR, CO and MOE as there were some errors found within the chemical technical circumstance text associated with some agricultural threats (see Question 8.2.1 -8.2.6 below for more details).



- Brownfield's Environmental Site Registry (BESR) data were originally scheduled to be released on the Ministry's CA Portal in August 2009. However, pending a data integrity review, the data will not be available in bulk in an automated fashion until 2010. Individual records of site condition (on a site by site basis) continue to be available on the BESR website by the general public.
- Ontario Water Taking and Reporting System data will include the actual water takings submitted to the Water Taking and Reporting System (WTRS) by the Permit To Take Water clients. The anticipated timeline for upload of this information is January 2010.
- In response to requests for Bulk Fuel storage and Retail Fuel Facilities Information, the Technical Safety and Standards Authority has provided a database with 20,884 records representing the fuel types, storage capacities and other operational data regarding individual fuel tanks at each of 5744 fuel outlets in Ontario. The database unfortunately did not contain geospatial coordinates so each CA will be required to geocode the data they are interested in. The dataset was distributed via the Conservation Ontario FTP.

4 Recent letters / memos

- Letter from Ian Smith, dated October 8, 2009 - Incorporating Data in Assessment Reports (ARs)
- Letter from Ian Smith, dated October 30, 2009 – Addressed to Chiefs of First Nations advising of capacity funding
- Memo from Heather Malcolmson, dated November 19, 2009 – Advising of the EBR posting of the amended Assessment Report Technical Rules (Nov 18, 2009) and release of Version 7.1 of the Threat Lookup Database (replacing Version 7.0)
- Letter from Ian Smith, dated November 23, 2009 – Addressed to SPC Chairs and CA Project Managers advising of the open of the second application period for the Ontario Drinking Water Stewardship Program
- Memo from Keith Willson, dated December 9, 2009 - Updated Assessment Report checklist and letter of transmittal were sent to all PM and Chairs.



5 EBR postings related to source protection

5.1 Technical Rules

Notification was provided to all stakeholders that the EBR policy decision to amend the assessment report technical rules was posted on the EBR on November 18, 2009. The EBR link is as follows: <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTA3NDU3&statusId=MTYyNTU3&language=en>

The final approved technical rules are posted on the Ministry of the Environment web site at <http://www.ene.gov.on.ca/en/water/cleanwater/cwa-technical-rules.php>

5.2 Source Protection Planning

Ministry of the Environment posted the document “Source Protection Plans under the Clean Water Act, 2006: A Discussion Paper on Requirements for the Content and Preparation of Source Protection Plans” on the Environmental Bill of Rights (EBR) website www.ebr.gov.on.ca, # **010-6726** on June 25th, 2009 for a 90-day public comment period. The purpose of the document was to stimulate discussion on source protection plans, their content, and how they will be developed, so that the ministry can use the results of the discussion in developing the draft source protection plan regulations. The EBR posting closed on September 23, 2009. The ministry is currently reviewing the comments received. The ministry is aiming to post the draft regulation on the EBR early in 2010.

6 Ontario Drinking Water Stewardship Program

- The ODWSP, established by the Clean Water Act, 2006 (the “Act”), provides financial assistance to eligible persons and groups interested in taking immediate actions to protect their sources of municipal drinking water supplies.
- \$7 million in financial assistance was available in 2009/10 for the following key areas:
 - Education and Outreach
 - Special Projects, and
 - Early Actions
- There were two application periods available for the 2009/10 ODWSP:
 - The first application period ended September 15, 2009 → 65 applications were submitted with a total ask of approximately \$12M
 - The second and final application period ended on December 15, 2009 → 34 applications were submitted with a total ask of approximately \$4.3M



- Changes will be made to the ODWSP in 2010-11 to focus on addressing significant drinking water threats that are identified in assessment reports and to those individuals and businesses that agree to take early measures to respond to the identified significant threats and to reduce the risk to our drinking water sources. It is anticipated that a new ODWSP component, called Early Response, will be introduced in spring 2010. As a result, the December 15th closing date for the second application period was the last opportunity to apply for Early Action and Education and Outreach funds. These 2 components will be phased out after December 15, 2009.
- For funding information contact SourceProtectionFunding@ontario.ca

7 First Nations Drinking Water Systems – Update

- The ministry received two Band Council resolutions, from Kettle and Stony Point First Nation (KSPFN) and Six Nations of the Grand River to include their drinking water systems in the source protection planning process.
- The proposal to make a regulation to include the drinking water systems for Six Nations of the Grand River, and Kettle and Stony Point First Nation was posted on the Environmental Bill of Rights Environmental Registry from October 21 until Nov. 20. To access this posting, please use the following web link: www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTA3NzY5&statusId=MTYxODg5&language=en
- At this time, the ministry anticipates that the regulation will state that the two drinking water systems are included in the source protection planning process pursuant to the Clean Water Act. The specific details regarding technical work, roles and responsibilities, etc. will be addressed in an agreement (MOU or Transfer Payment Agreement). MOE is targeting to have the necessary regulation in place by February 2010.

7.1 First Nations and Capacity Issues

- First Nations have indicated that they require capacity funding in order to effectively participate in the overall source protection planning process



- SPPB will provide, via an application process, annual funding in the amount of \$10K to First Nations with reserves in a source protection area to enable participation in the overall source protection planning process.
- The application form, a guidance document about how to complete the application form and a Grant Funding Agreement template, are posted on our website. In October 2009, the ministry wrote to all First Nations reserves in source protection areas informing them of the availability of capacity funding and directing them to the website for the application form.

7.2 Funding for Technical Work for First Nations Drinking Water Systems

Work on First Nations drinking water systems is considered an eligible expense under the Provincial funding program.

8 Recent Questions and Answers

The following questions were raised and answered from October 1, 2009 to December 17, 2009.

8.1 Assessment Report – General

8.1.1 Question: watershed characterization

How much water quality detail should be included in the watershed characterisation chapter of the assessment report?

Response:

None of these rules specify the level of detail to include in the watershed characterization chapter of the assessment report (AR). Further to the AR checklist which provides some guidance, to meet the requirements of these rules, you will want to include information including, but not limited to:

- significant water resources (recharge/discharge, groundwater, surface water)
- the water quality parameters at different monitoring stations
- trends in water quantity and/or quality (concentrations of parameters)
- natural and human-origin chemicals
- discharges and flows of tributaries



Keep in mind this is a very high level description and you can reference more detailed information in other areas of the AR.

8.1.2 Question: high water mark

What is the definition of 'high water mark' as it is referenced in the Technical Rules?

Response:

The term 'high water mark' under the Director's Technical Rules is consistent with the definition of 'ordinary high water mark' as defined by Fisheries and Ocean Canada (DFO): The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. For the purposes of the Director's Technical Rules:

1. For all types of water body where a long term record of water levels exists: the high water mark can be calculated as the 80th percentile for the month within which the highest water level occurs. This means that 80% of the time the water level is at or below this elevation. For Great lakes and connecting channels water bodies, the 80th percentile elevation has been already calculated and known, this refers to the 80th percentile elevation above chart datum as described in DFO's Fish Habitat Fact Sheet #T-6.
2. For all types of water body where a long term record of water levels does not exist: the high water mark can be estimated as follows:
 - a - For inland rivers: it is the bank full level where a 2 yr flood return period applies.
 - b - For inland lakes and wetlands : it is the level at which flood plains are flooded and leave a mark where natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation.
 - c - For regulated rivers: it is the highest operating water level (Full Supply Level).

8.1.3 Question: data gap

Do the following two scenarios constitute a "Data Gap" which would require a plan and timeline to be developed and submitted to the Ministry?

Scenario 1:

A Source Protection Committee has maps which describe the human and physical geographic features of the entire Source Protection Area, however this mapping is not by individual watershed.

Scenario 2:

A Source Protection Committee with limited development throughout its area has water quality data associated with watersheds contributing to their municipal drinking water IPZ's, however they are lacking water quality data for most of their individual watersheds.



Response:

There is no reason to consider these situations as data gaps that require a work plan for additional information as the watershed characterization section is meant to provide background information to support the development of the rest of the report. It is intended to include information available when the report is written. In terms of compliance with the assessment report, you are required to show these within each watershed, but this can be done using a source protection area map showing the features and the outlines of the watersheds within the source protection area.

With respect to the water quality data, you are only required to report on the information in the watershed where there is information. You can identify that there is no information for the other watersheds for completeness, but you do not need a work plan to collect this information.

8.1.4 Question: ground-truthing potential threats

What are the requirements for ground-truthing potential threats? Are vacant properties assessed any differently as part of the threats assessment? Can a vacant property still be considered as having a threat present?

Response:

As part of the enumeration of significant drinking water threats, a SPC may encounter a vacant property. A vacant property is one that, in the opinion of the SPC, has no activity taking place today and no indication that an activity could be undertaken immediately (i.e., the necessary infrastructure is not in place). For example, an agricultural field that is not being used and is naturalizing would likely be considered a vacant property.

The SPC is required to write policies to ensure that an activity ceases to be or never becomes a significant drinking water threat. Therefore, policies around activities that "would be" significant should ensure that nothing is done on the lot in the future that would be a significant threat; policies could, however, result in "managed significant" (i.e. everything need not be "prohibited"). If the SPC is uncertain about the potential future use(s) of the property it will want to consider monitoring the site.

8.1.5 Question: map of SW control structures and (b) SW intakes

Is it necessary to provide a map in the assessment report showing (a) surface water control structures and (b) surface water intakes?

Response:

Here are the relevant parts of the Director's technical rules:

1. An assessment report shall include the following:



- (1) One or more maps, graphics or tables detailing,
 - (b) the component elements of the water budget for the source protection area that are listed in rule 19;
and rule 19 includes:
 - 2. A conceptual water budget shall include an assessment of the following elements,
 - (4) Surface water control structures.
 - (8) The maximum annual quantity of water that can lawfully be taken by each surface water intake and well.
 - (10) Existing and projected uses of water, including drinking water, waste water treatment, agriculture, livestock, domestic use, industrial use and commercial use.
- The rules quoted are the existing rules rather than the proposed amended wording as at the time of writing the proposed amended rules are posted on the EBR however it should be noted that the proposed amended wording provides more clarification.
- The requirements listed above can be satisfied in any way – so a map, a table or a graphic can be used. You are only asked to map what you know about. You are not expected to locate these items in the field or find additional ones that conservation authority staff and other staff are not currently aware of.

8.1.6 Question: privately owned septic system in a WHPA-A

According to the threats analysis tool a privately owned septic system in a WHPA-A with a vulnerability scoring of 10 is flagged as a significant chemical threat. The tool specifies that the type of threat is “The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage within the meaning of the Ontario Water Resources Act.” Upon further review, private septic systems do not fall within the Ontario Water Resources Act guidelines instead the privately owned system falls within the requirements of the Ontario Building Code Act, which therefore means the threat is not significant?

Response:

The actual prescribed threat is called “The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage”. The Ontario Water Resources Act reference is incorrect on the reference site and MOE staff are trying to get that fixed. Therefore, there are a number of circumstances under the prescribed threat that apply to systems regulated under the building code. These include:

Septic systems under the building code.

Chemicals are covered under threat reference

numbers 831 to 836. None of these are significant drinking water threats. The circumstances are:

- 1. The system is an earth pit privy, privy vault, greywater system, cesspool, or a leaching bed system and its associated treatment unit.



2. The system is subject to the Ontario Building Code Act, 1992.
3. There is a list of chemicals under circumstance 3.

The pathogen threat reference is 1955 and the activity is significant in an area that scores 10. The circumstances are:

1. The system is an earth pit privy, privy vault, cesspool, or a leaching bed system and its associated treatment unit and is a sewage system as defined in section 1 of O. Reg. 350/06 (Building Code) made under the Building Code Act, 1992 or a sewage works as defined in section 1 of the Ontario Water Resources Act.
2. A discharge from the system may result in the presence of one or more pathogens in groundwater or surface water.

Holding tanks under the building code.

Chemicals are covered under threat reference numbers 843 to 854. Some of these are significant drinking water threats:

1. The system requires or uses a holding tank for the retention of hauled sewage at the site where it is produced before its collection by a hauled sewage system.
2. The system is subject to the Ontario Building Code Act, 1992.
3. There is a list of chemicals under circumstance 3.

The pathogen threat is reference #1956 and the activity is significant in an area that scores 10. The circumstances are:

The system requires or uses a holding tank for the retention of hauled sewage at the site where it is produced before its collection by a hauled sewage system.

A spill from the tank may result in the presence of one or more pathogens in groundwater or surface water.

8.1.7 Question: basis for the 1km for the IPZ 1

What is the basis for the 1 km distance of IPZ 1? What studies were completed/what is the science behind the 1 km?

Response:

Rationale for Surface Water Intake Protection Zones

Introduction

The Ministry of the Environment's "Technical Rules: Assessment Report," (December 12, 2008) made under the Clean Water Act, 2006, outline the requirements for the delineation of surface water intake protection zones (IPZs).



The technical rules were developed based on the recommendations of the Technical Experts Committee (TEC) that was convened specifically to provide advice to the Ministry on the science and technical issues that need to be considered for the development of source protection plans.

The findings and recommendations of the TEC are presented in a 2004 document entitled “Watershed-Based Source Protection Planning. Science Based Decision-making for Protecting Ontario’s Drinking Water Resources: A Threats Assessment Framework”. The report is available on the ministry’s website at <http://www.ene.gov.on.ca/envision/techdocs/4935e.pdf>

The TEC consisted of experts specializing in a range of areas, including biology, groundwater, surface water, microbiology, risk assessment and risk management, and environmental policy. Experts on the committee included members from academia, conservation authorities, conservation organizations, First Nations, the federal government, and municipal governments and departments.

The sub-committee carried out an extensive review of the literature, conducted in-depth consultations with international experts and held a workshop to obtain additional information from experts in the field.

Recommendations 30 – 43 of the 2004 TEC document relate to surface water intake protection zones.
Rationale for IPZ-1

In the 2004 TEC document, specifically Recommendation 38, the 1 km radius is noted.

Recommendation 38: For intakes on large water bodies, such as the Great Lakes, the delineation of the IPZ shall be a 1 km radius around the intake structure unless issues are known or suspected, in which case a larger zone is to be delineated to encompass the physical location of known or suspected threats within the radius.

As noted above, Recommendation 38 was made for large water bodies. The ministry’s technical rules have applied this recommendation for inland lakes as well.

Under the technical rules, the IPZ-1 delineation for Great Lakes (type A), connecting channels (type B) and inland lakes (type D) intakes (1 km circle) is based on several factors including the hydrodynamic behaviour of the waterbody and worst-case spill scenarios, such as from shipping. The intent is to take into account the most potentially acute situation (e.g., spill). Contaminants released in the IPZ-1 have the greatest likelihood of reaching the



intake, and therefore the highest potential to impact raw water quality. The assumptions behind those factors are that there is no or little dilution.

Recommendation 38 also noted the possibility of expanding the IPZ beyond 1 km. Ministry technical rules have accounted for threats beyond the 1 km radius using IPZ-2 and IPZ-3 (see discussion below), through the threats and issues approaches.

The 1 km distance has also been studied by the Michigan Source Protection Assessment Program. In this program, the delineation of a Critical Assessment Zone (CAZ) for the most vulnerable Great Lakes intakes is based on a 3000 feet radius. The sensitivity analysis considers various water depths and distances from the shoreline. The link for that document is: http://www.michigan.gov/documents/DEQ-swap99_4707_7.pdf

Under the current Technical Rules, Rule 64 allows SPCs to change IPZ-1 for Type B and Type C intakes. Under the proposed amendments to the Technical Rules, this ability to change IPZ-1 would apply for all types of intakes. Rule 64 implicitly requires the SPC to provide the rationale for the hydrodynamic conditions that allow the IPZ-1 to be modified. If an SPC can not provide the ministry with such rationale then the SPC can not change IPZ-1 and should use the existing rules.

Summary: IPZ-1 is based on emergency response to the most immediate spill scenarios (e.g., a large spill from a shipping vessel) within 1 km of the intake. The IPZ-1 is a conservative buffer which ensures a level of consistency in managing the most significant threats to surface water intakes across the province.

Rationale for IPZ-2 and IPZ-3

Recommendation 30 of the TEC document speaks to IPZs more broadly than Recommendation 38 noted above for IPZ-1.

Recommendation 30: The overall Intake Protection Zone for inland surface water intakes should be based on a minimum 2-hour response time. This area can be defined by converting the response time (e.g. 2 hours) to a capture area based on both overland runoff and channel flow components and appropriate storm events. This zone should be considered a vulnerable area and be managed to reduce risks from catastrophic threats such as spills.

The technical rules allow IPZ-2 and IPZ-3 to be delineated to capture these areas. IPZ-2 is intended to be delineated for spills for which a municipality is able to respond.



If there is any concern about a specific contaminates or spills that may be transported to an intake from beyond the 1 km circle delineated under IPZ-1, then that area can be included in IPZ-2 and given a higher score (e.g. 9) to ensure the activity is captured as a potential significant drinking water threat.

8.1.8 Question: calculation of impervious surfaces

Is the calculation of impervious surfaces based on the subsets of vulnerable areas such as WHPA A, B, C and D within the vulnerable area AND the 1 km² grid or is it just based on the 1km² grid?

Response:

Rule 16(11) says you need the percent impervious surface in each vulnerable area, and rule 17 says that grid is centred in the SPA. So the grid is drawn for the full SPA, but the only places you need the percent impervious surface calculation is within the parts of the grid where you overlap with the vulnerable area (or subset of a vulnerable area such as WHPA D etc).

8.1.9 Question: vulnerable area extending from one SPR to another

1. Question

Should an AR include a description of the drinking water systems found in a neighbouring SPA with vulnerable areas extending into the first SPA? Is it possible to only reference the AR for the neighbouring SPA?

2. Question

If the AR is required to show vulnerable areas extending from the neighbouring SPA, should the mapping show the whole IPZ/WHPA and intake location or only the part within the SPA - likewise for discussion of vulnerability scores, threats and issues?

3. Question

Do PMs have to provide their SPC with the mapping rationale/approach and peer review results for their consideration in accepting the mapping or can they defer to the SPC where the water system is located?

4. Question

How can PMs best coordinate getting the information from an adjacent SPR when they are working in parallel but perhaps different timetables?

Response:

1. Answer



SPCs should refer back to their Terms of Reference and look at how they considered drinking water systems in neighbouring SPAs. The CWA and Regulations are silent on the requirement to consider/document neighbouring systems. If, however, a SPC included work in its ToR relating to a neighbouring drinking water system, it will be necessary to ensure those work tasks are completed.

For the purpose of meaningful consultation, the ministry recommends that SPCs consider mapping and/or referencing drinking water systems in neighbouring SPAs whose vulnerable area delineations extend into the SPA.

2. Answer

There are no requirements with respect to what portion of a neighbouring vulnerable area has to be mapped.

To meet the requirements for consultation on the draft and proposed ARs, it is recommended that SPCs show mapping of all vulnerable areas within their SPA, even those vulnerable areas that originate in a neighbouring SPA. SPCs are required to notify property owners who have significant threats identified on his/her property. To make this consultation effective, the AR should include sufficient mapping to outline vulnerable areas, their scoring and what activities are considered significant threats. It is important for PMs to work with neighbouring PMs early on to determine how to effectively map vulnerable areas and to be prepared to develop future policies on drinking water threats.

3. Answer

There is no requirement to do this. It may be worthwhile for SPCs to share this type of information and to work together. Given we do not specify this, an SPC can defer to the SPC where the water system is located. For consultation purposes, the affected property owners will need to have an opportunity to review the information from the neighbouring SPC. The neighbouring SPC may be tasked with this consultation if the ToR assigns this work to them.

4. Answer

Ministry staff recommend that PMs start sharing their vulnerable area delineations and compare each others timetables. Where SPCs are working on significantly different timelines and will not be able to share the desired information in advance of issuing their draft and proposed ARs, SPCs should document the missing information as an information gap in the ARs and indicate that it will be reported in the neighbouring SPCs report and consultation will be completed by the SPC or neighbouring SPC when the work is complete.



8.2 Threats and Issues

8.2.1 Question: threats look-up tables

Why are there circumstances in the look-up tables that are not in the master?

Response:

All circumstances were assessed as those found to be “negligible” threats (i.e. ≤ 40 risk score), were deleted from the master table.

8.2.2 Question: threats tables and circumstances

Why do the number of circumstances in the master and/or provincial list tables not match the total number of records listed under “Provincial_Lists_Circumstances_v7.1.xls table’s “Potential Circumstances” column or in the EBR_..._Master tables?

Response:

In the legal Tables 1 and 2, circumstances are grouped by reference numbers in terms of the risk posed within vulnerable scoring areas; however, in the database there is a unique record for every threat circumstance risk assessment (chemicals). For pathogens, there may be many land uses associated with one circumstance, which will result in many records being associated with one circumstance.

8.2.3 Question: potential circumstances (threats tables)

Why do the Provincial_Lists_Circumstances have a “Potential Circumstances” column name if these are not unique circumstances?

Response:

This inconsistency was recently noted, and subsequent revised tables are being posted to the Conservation Ontario FTP server (Provincial_Lists_Circumstances_v7.1_Rev2.xls) where there is a new column called “Total Records v7.1”.

8.2.4 Question: chemical and pathogen circumstances

Can there be more than 1943 chemical circumstances or 28 pathogen circumstances in one vulnerable scoring area zone?

Response:

Though theoretically this is possible, it is unlikely. However, as the threats logical data model indicates, there can be many activity sites within one vulnerable scoring area, and each activity site can be associated with one-to-many threat assessment which can be related to 0-to-many enumerated records at that one site.



8.2.5 Question: circumstances

For the “is or would be” list of circumstances by vulnerable area, should the total number of potential records be listed if these are not actually the total number of circumstances?

Response:

For the Assessment Report (AR) the information requirements set out by the Province (MOE) advised that the report may refer to the applicable parts of the Table of Drinking Water Threats that sets out the set of circumstances that makes an activity a significant, moderate or low drinking water threat according to technical rule 118.1. To facilitate this effort the Province is producing standard “provincial list” tables for reference. These tables and table names will be provided by the MOE via their website in the near future. In the interim, for draft AR purposes list the name of the make-table provincial list query’s table name (e.g., make-table query “qmakChemical_IPZ_10_Moderate” produces table “tblChemical_IPZ_10_Moderate”) and change the name of this table to the provincial standard when it is provided.

8.2.6 Question: agricultural circumstance technical language

How are the current errors with agricultural circumstance technical language being resolved in version 7.1?

Response:

There were some errors found with the chemical technical circumstance text associated with some agricultural threats (i.e., ChemQuantityCircumstance values). These errors have been corrected and a new version 7.1.2 database ZIP package is being released via the Conservation Ontario FTP server on Dec 16, 2009. Note that this new ZIP package will contain various updated files such as:

Provincial_Lists_Circumstances_v7.1_Rev2.xls

SWP-Threats_0-6_2009-12-15_Threats_LUT_v7-1-2_UserGuide.pdf

SWP-Threats_2009-12-15_Threats Updates v7-1 to 7-1-2.pdf

Threats and Issues Logical Version 7_1.pdf (logical data model for local data management)

Threats_LDM_Report_15Dec2009.pdf (data dictionary for logical data model and database)

Threats_LUT_v7-1-2_Communique.doc

Threats_LUT_v7.1.2.mdb (Threats LUT DB v7.1.2)

ThreatsVersion7_1.eap (UML file with Threats business process model (workflow) and logical data model)

8.2.7 Question: Is an issue and issue if it is treatable?

Is an issue an issue if it's treatable?



Response:

Essentially once flagged as a potential issue, the SPC needs to look at each case individually in consultation with the operating authority (and/or municipality). There will likely be different results for the same parameters in different areas according to the local realities, especially for parameters like turbidity and pathogens (i.e. it CAN be treated, but is it costing the municipality extra money and time to deal with treating the issue). If this is the situation the SPC can choose to elevate that parameter to an issue and an Issue Contributing Area (ICA) would be completed.

8.2.8 Question: issues naturally occurring, partially & non-anthropogenic

How does a SPC deal with issues that are naturally occurring or partially anthropogenic and non-anthropogenic?

Response:

Naturally occurring parameters can be identified as an issue within the draft assessment report. The technical rules will not allow the committee to identify an issue contributing area (ICA) for naturally occurring issues as it does not meet the tests in Rule 114 and Rule 115 and therefore, the issue will not move forward in the assessment report. It is important to note that if any issue does not meet the tests in rule 114, they must document the issue as per rule 115.1 (list the parameters of concern and an explanation of the nature of the issue and the possible cause of the issue). But this does allow the committee to identify issues that the public is concerned about and ensure they are documented. If a parameter is determined to be linked to both anthropogenic and non-anthropogenic sources an SPC could identify the parameter as an issue and an ICA must be delineated and threats identified as per rule 115 developed to address the human activities on the landscape that contribute to that issue.

8.2.9 Question: pathogen drinking water threats table and municipal sewers

Does item # 1957 of the Pathogen Drinking Water Threats Table refer to a municipal sanitary sewer line and not the residential sanitary hook-up line which is covered under the Building Code Act?

Response:

Yes, item #1957 refers to a municipal sanitary line and includes the sanitary hook-up line up to the plumbing in the house which is covered by the Building Code Act or until they reach the property line at a minimum.

If there is uncertainty, Source Protection Authorities should check with municipal staff to confirm where the municipal sanitary hook-up ends.



8.2.10 Question: lists of drinking water threats – organic solvents

In the threats tables, under the threat of 17: the handling and storage of an organic solvent, there is only reference numbers and circumstances for storage, and none at all for handling. Is this an oversight?

Response:

Handling and storage was separated into different circumstances for a few activities (for example fuel handling and storage and DNAPLS) as regulations or instruments related to that activity often treat them differently. With organic solvents and pesticides and others, this was not the case, so the threat of handling and storage was lumped into one group. The threat remains handling and storage where the storage is xxx (whatever the circumstance is). If you have a situation where the storage is below ground, but the handling is above ground, the committee can request local circumstances be added for that source protection area so that the activity can be adequately assessed.

8.2.11 Question: off-site contamination

Do the amended Technical Rules require evidence of off-site contamination in order to identify a condition as a drinking water threat?

Response:

Technical Rule 139 (1) requires evidence that the condition is causing off-site contamination before assigning it a hazard rating of 10. In vulnerable areas where the vulnerability score is 8 or greater, conditions with a hazard rating of 10 and subsequently a risk score equal to 80 or greater are a significant drinking water threat.

Where there is no evidence of off-site contamination, the condition would have a hazard rating of 6 until evidence is provided suggesting otherwise. Conditions in vulnerable areas with risk scores equal to or greater than 60 but less than 80 would be a moderate drinking water threat. The absence of evidence of off-site contamination does not prevent a known condition from being identified as a drinking water threat except where the vulnerability score is too low (risk score of 40 or less).

The local source protection plan has the option of setting out policies to address conditions that have been identified as significant, moderate or low drinking water threats under the Clean Water Act. In addition, source protection plans are required to include policies that monitor significant conditions. Source protection plans must also include policies to monitor moderate conditions if and where it is advisable to do so.



8.2.12 Question: fuel handling circumstances – threats tables

Fuel tanks - at a gas station: tanks storage is below grade if underground (ref# 312), but delivery and usage would be above grade, so handling is above grade (ref# 192)? Or am I to assume that below grade storage would also be below grade handling?

What about at a private residence with the storage below grade (ref# 282), the delivery would be above grade (ref# 172), but usage would be both below (ref# 182) and above grade, so which reference/circumstances would be appropriate?

Response:

Handling would be above grade in cases where the delivery is above ground. The Ministry put below grade handling in for cases where there was an inside handling area that was below grade – there are cases in large industry where this would happen.

For a residence the handling is above ground during the delivery. The usage is part of the storage – so both would fall into the below ground. Not sure of the above grade usage at a residence with a below ground tank. Residences can't have pumps above ground. If for some reason both exist, then both circumstances exist.

8.2.13 Question: phosphorus (blue green algae) as a water quality issue

Some of our clients have a specific interest in assessing Phosphorus as a potential water quality issue; despite it not being listed under Schedules 1, 2, 3 or Table 4 of the ODWS. To this point, we have considered using Microcystin-LR as a “surrogate” for Phosphorus.

Response:

Phosphorus can not be identified as an issue as it is not a parameter listed in Schedules 1, 2, 3 or Table 4 of the Ontario Drinking Water Standards. Our understanding around the requests to include phosphorous is that SPCs and municipalities are concerned about blue green algal blooms and the potential for the presence of Microcystin_LR. Due to limited water quality data on Microcystin-LR (the toxic cyanobacteria present in blue-green algal blooms during die-off), most SPCs will not be able to confirm the presence of the parameter in these blooms, and we recognise that samples do not always accurately indicate the presence/absence of this toxin. Therefore, the ministry would be supportive of an alternative approach that uses the presence of blue green algal booms as an indicator of Microcystin -LR. Therefore, the SPC could identify Microcystin-LR as an issue. When identifying activities that contribute to blue-green algal blooms in the source water, SPCs can identify human activities that contribute to phosphorous loading in the area as this is known to be linked to the development of these algal blooms.



8.2.14 Question: DNAPLs and LNAPLs - threats tables

How was the list of DNAPLs and LNAPLs generated – what about the others not identified in the threats table? Does MOE not consider them a threat and can they be added as a local threat?

Response:

The current threats table includes chemicals within DNAPLs that are of greatest concern (had the highest hazard scores), including tetrachloroethylene (PCE), trichloroethylene (TCE), and vinyl chloride. The same logic is used for the chemicals listed with LNAPLs.

If an SPC is concerned that activities associated with other chemicals within DNAPLs and LNAPLs are not already addressed through the existing list of activities and circumstances, they can request the addition of local activities or local circumstance to address that threat. It is important to note, that within the DNAPLs circumstances, VC, PCE and TCE, and any chemical that breaks down to VC, PCE or TCE are included already.

8.2.15 Question: moderate & low threats in SGRAs and HVAs

If activities within Significant Groundwater Recharge Areas and Highly Vulnerable Aquifers can only be identified as moderate or low threats under the Clean Water Act, what policy approaches can municipalities consider to reduce the risk posed by these threats?

Response:

The answer lies in what types of activity is being undertaken/considered and whether it is on the list of prescribed threats in Ontario Regulation 287/07 Section 1.1 or has been identified as a local threat.

Source Protection Plans may include policies to address drinking water threats (i.e., activities and conditions) in vulnerable areas that are moderate or low drinking water threats.

The policy approaches available would include:

- education and outreach programs
- incentive programs
- land use planning approaches* (e.g. official plans, zoning by-laws, site plan controls)
- New or amended provincial instruments prescribed in regulation under the CWA*

*note: during implementation, public bodies need “have regard to” these policies, as opposed to “conform with”, which is the case for significant threat policies. When “having regard”, if the public body decides to make a change to an OP or zoning, or to provincial instruments, then that change is legally binding on the individuals affected.

Refer to “Source Protection Plans under the Clean Water Act, 2006: A Discussion Paper on Requirements for the Content and Preparation of Source Protection Plans, 2009” for more detailed explanation of each approach.



8.2.16 Question: pesticide application in vulnerable area

Can you confirm the application area for pesticide application is the area within the vulnerable area, and not the gross application area?

Response:

Yes, that is correct.

8.2.17 Question: privately owned septic system in a WHPA-A

According to the threats analysis tool a privately owned septic system in a WHPA-A with a vulnerability scoring of 10 is flagged as a significant chemical threat. The tool specifies that the type of threat is “The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage within the meaning of the Ontario Water Resources Act.” Upon further review, private septic systems do not fall within the Ontario Water Resources Act guidelines instead the privately owned system falls within the requirements of the Ontario Building Code Act, which therefore means the threat is not significant?

Response:

The actual prescribed threat is called “The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage”. The Ontario Water Resources Act reference is incorrect on the reference site and MOE staff are trying to get that fixed. Therefore, there are a number of circumstances under the prescribed threat that apply to systems regulated under the building code. These include:

Septic systems under the building code.

Chemicals are covered under threat reference

numbers 831 to 836. None of these are significant drinking water threats. The circumstances are:

1. The system is an earth pit privy, privy vault, greywater system, cesspool, or a leaching bed system and its associated treatment unit.
2. The system is subject to the Ontario Building Code Act, 1992.
3. There is a list of chemicals under circumstance 3.

The pathogen threat reference is 1955 and the activity is significant in an area that scores 10. The circumstances are:

1. The system is an earth pit privy, privy vault, cesspool, or a leaching bed system and its associated treatment unit and is a sewage system as defined in section 1 of O. Reg. 350/06 (Building Code) made under the Building Code Act, 1992 or a sewage works as defined in section 1 of the Ontario Water Resources Act.



2. A discharge from the system may result in the presence of one or more pathogens in groundwater or surface water.

Holding tanks under the building code.

Chemicals are covered under threat reference numbers 843 to 854. Some of these are significant drinking water threats:

1. The system requires or uses a holding tank for the retention of hauled sewage at the site where it is produced before its collection by a hauled sewage system.
2. The system is subject to the Ontario Building Code Act, 1992.
3. There is a list of chemicals under circumstance 3.

The pathogen threat is reference #1956 and the activity is significant in an area that scores 10. The circumstances are:

The system requires or uses a holding tank for the retention of hauled sewage at the site where it is produced before its collection by a hauled sewage system.

A spill from the tank may result in the presence of one or more pathogens in groundwater or surface water.

8.2.18 Question: private residences fuel oil onsite vs. farms with liquid fuel

Please confirm that private residences with fuel oil onsite fall within the definition of facility as defined in O. Reg 213/01 (fall within the “facility” circumstances of the drinking water threats tables. But farms with liquid fuel would fall within the “bulk plant” circumstances of the threats tables?

From the drinking water threats tables bulk plant as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, or a facility that manufacturers or refines fuel vs. facility as defined in section 1 of O. Reg. 213/01 (Fuel Oil) made under the Technical Standards and Safety Act, 2000 or a facility as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, but not including a bulk plant.

Ontario Regulation 213/01 - “facility” means an installation where fuel oil or used oil, when such oil is used as a fuel, is handled, but does not include a facility referred to in Ontario Regulation 217/01 (Liquid Fuels).

Ontario Regulation 217/01 - “facility” means a permanent or mobile retail outlet, bulk plant, marina, cardlock/keylock, private outlet or farm where gasoline or an associated product is handled other than in portable containers.



Response:

1. Please confirm that private residences with fuel oil onsite fall within the definition of facility as defined in O. Reg 213/01 (fall within the “facility” circumstances of the drinking water threats tables).

Correct, home heating fuel tanks fall under the definition of facility as defined in TSSA O. Reg. 213/01.

2. But farms with liquid fuel would fall within the “bulk plant” circumstances of the threats tables?

Fuel storage on farms falls under the definition of facility as defined in TSSA O. Reg. 217/01, where facility is defined as "a permanent or mobile retail outlet, bulk plant, marina, cardlock/keylock, private outlet or farm where gasoline or an associated product is handled other than in portable containers".

Therefore, for both home heating fuel tanks, and gasoline storage on farms, the circumstance descriptor that applies to both is:

"A facility as defined in section 1 of O. Reg. 213/01 (Fuel Oil) made under the Technical Standards and Safety Act, 2000 or a facility as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, but not including a bulk plant".

The circumstance that applies to large scale facilities (bulk plants, manufacturing / refining facilities) where there would be extremely large volumes of fuel is: "A bulk plant as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, or a facility that manufactures or refines fuel."

8.2.19 Question: application of NASM as a threat

To classify a Non Agricultural Source Material threat, such as biosolids, to the Tables it is necessary to relate the mass loading in terms of an equivalent livestock density of < 0.5 NU/ acre; between 0.5 and 1 NU /acre or >1 NU/acre. Has there been, or can you provide, any guidance about how to relate application rates to NU/acre?

Response:

To determine if the application of NASM is a threat, you do not need to relate NASM to the mass loading or equivalent NUs. The circumstances under the application of NASM in the Threats Table are:



- The agricultural source material non agricultural source material is applied to land located in a vulnerable area that has a managed land percentage that is [(more than 80%) or (at least 40%, but not more than 80%) or (less than 40%)]; and
- A livestock density that is sufficient to annually apply nutrients at a rate that is [(more than 1.0 nutrient units per acre) or (at least 0.5 nutrient units per acre but not more than 1.0 nutrient unit per acre) or (less than 0.5 nutrient units per acre)].

To apply these circumstances, you are required to use the maps from the watershed characterization (rule 16) to determine the managed land percentage and the livestock density for the area in question. Whether or not NASM application is a significant, moderate, or low drinking water threat will depend on these two maps and the vulnerability of the area in question. The amount of NASM applied is not considered in the circumstances.

8.2.20 Question: delineation of issue contributing area

We are beginning to address the question of how to delineate Issue Contributing Areas and require guidance on how to do so.

At the training session held in Belleville in June, there was mention of tracing the issue back to its potential source(s). The problem we're facing is how to do so without bias where we have very little or no data "upstream" of the great lakes intakes or in surrounding wells. Many of the intakes we are concerned with and pretty ubiquitous problems (e.g. salt and total coliform) so it's doubtful that more data would help narrow down our scope much. We were wondering to what extent can we use local knowledge if we don't have water quality test results to back it up. Can we simply trace lines upstream of know water contributing areas within the delineated IPZ/WHPA? Can we look at known potential contributors within the vulnerable area and trace back from there (e.g. current land uses)? ...OR since we lack scientific data, do not even attempt to delineate the issue contributing areas, cite it as a data gap and follow the instructions on slide 42 of the June training session (make a plan for tracing issues back, list data sources to be reviewed, and commit to a timeline for delineating Issue contributing areas)?

The August Liaison newsletter also mentions lake-wide issues (their example was nitrogen)... has there been any further development? Do you know of other SPA/SPRs that are suggesting lake-wide issues for the development of great lakes targets? Would total coliform qualify (identified as an Issue at all surface water intakes in the CSPAs)?

Response:

If there is no information available to identify the issue contributing area, the rules require that you include a plan to identify the area within the assessment report and a timelines for implementation. You can not infer where the lines should be drawn unless you have some



information to back this up. The plan can include sampling to identify the upstream area where appropriate.

With respect to great lakes targets, we will only make decisions on GL targets once we review the assessment reports. SPCs are required to identify issues they can not deal with locally within their assessment reports as the threats are outside the vulnerable areas associated with their drinking water systems.

8.3 Source Protection Planning

8.3.1 Question: policies related to application of road salt

Can policies be developed in the source protection plans that require the Ministry of Transportation to address road salt threats?

Response:

Note that this is a revised Q&A based on recent legal opinion. The original question initially appeared in the May 2009 Progress Update. More recently legal advice regarding Section 104 of the CWA has changed and a new up-to-date answer to the question has been provided below.

Policies in a source protection plan (SPP) are “required” only for activities identified as significant drinking water threats (SDWT) in an approved assessment report. Section 104 of the CWA stipulates that “This Act Binds the Crown”. As such, where the crown is the person engaged in a SDWT activity identified in an approved AR, then policies in a SPP to address this significant threat would also be applicable to the Crown. If Part IV powers in the CWA are prescribed for this particular threat in future regulations under the CWA, then a RMP would be an eligible policy approach to address the SDW. Regardless of the approach utilized in a SPP policy, engaging and consulting with the person engaged in the activity are key elements of the policy development process and advisable prior to a draft SPP being circulated. Mechanisms for SPCs to approach provincial ministries and for developing policies around crown activities are still to be developed.

8.3.2 Question: risk management officials

Risk Management Officials - Who they will be, what powers will they have, when can Source Protection Committees expect to see legislation.

Response:

Under Section 47 of the Clean Water Act (CWA), it directs the council of a municipality for enforcement of risk management plans. It also directs the council of a municipality to appoint a risk management official and risk management inspectors. In the CWA the



municipalities also have the option of delegating the authority of risk management plans to conservation authorities, planning boards, health boards and as such those agencies would employ risk management officials and inspectors.

Risk management officials and inspectors appointed as per the CWA are bound by the requirements/process laid out in the CWA. In addition, risk management officials are required to take training (a Director-approved course) in order to enter property for the purpose of inspections under Section 62. They will also be required to have the qualifications which will be prescribed in a future regulation. A draft regulation is anticipated to be released winter of 2010.

Risk management plans are site-specific plans that address significant threat activities by formally setting out actions that will be taken by the person(s) who is engaging (or in the case of future threats, proposing to engage) in the activity to reduce the level of risk. The details of the actual risk management plan itself are intended to be agreed on collectively by the person(s) engaging in the activity and a risk management official. The risk management plan can also be imposed as a “last resort” by the risk management official if required and can be imposed by issuance of an order from the risk management official. For your reference, Section 56 of the CWA relates to interim risk management plans and Section 58 outlines the process/requirements/powers with regards to risk management plans after the source protection plan has been approved by the Minister.

It must be noted that risk management plans may only be used for activities that are prescribed by regulations and for activities that are identified as significant threats in the approved assessment report. Also, the approved source protection plans must specify the activity(ies) and the area(s) which the policy designates as subject to the application of risk management plans.

8.3.3 Question: OBC and mandatory re-inspection of septic beds

The source protection discussion paper indicates that the Ontario Building Code will be amended to include a mandatory re-inspection of septic beds in vulnerable areas. Will the definition vulnerable area in the Ontario Building Code be the same as that defined in the Clean Water (i.e. Significant Recharge Area, Highly Vulnerable Area, Wellhead Protection Area, and Intake Protection Zone)?

Response:

The proposed Building Code draft regulation on mandatory and discretionary re-inspection programs for on-site sewage systems (septic) will apply throughout Ontario.



Municipalities will have flexibility to determine the areas subject to discretionary re-inspection.

However, it is proposed that the mandatory five year re-inspection program will apply to the following areas:

- i) All lands located within 100m of the Lake Simcoe shoreline and lands located within 100m from the shoreline of any permanent stream flowing into Lake Simcoe.
- ii) Areas designated as Wellhead Protection Areas (WHPAs) A & B and Intake Protection Zone (IPZ) -1s as defined in the Assessment Report for that source protection region or area.

The definition of these terms is the same as under the Clean Water Act. It is proposed that the draft regulation amending the Building Code will generically reference vulnerable areas and would likely refer to an approved Assessment Report and the Director approved Technical Rules. The proposed timeline for posting of the draft is late 2009 with the expectation to have a final regulation in place by summer 2010.

(NOTE: This question was revised to reflect that the proposed Building Code amendments are on going and this question needed to reflect this “under consideration” situation.)

8.3.4 Question: prohibition policies - future land uses & ownership change

If an activity is identified as a significant threat and a risk management plan implemented and a prohibition policy developed for future land uses - if the property was sold or there was a change in ownership could that activity or operation be prohibited or would the risk management plan be transferred to the new owner?

Response:

Risk management plans (RMP) are negotiated locally between the individual carrying out the threat activity and the risk management official (RMO). If a change in business or land ownership results in the person carrying out the activity also changing, then the activity would not be permitted to continue until the new person carrying out the activity had a RMP in place. It is not automatically transferable.

The RMO is able to include provisions in an RMP that, for example, requires the RMO be notified in the event of a change of ownership, which may assist the RMO in keeping track of such changes. However, the legal responsibility to have an RMP rests with the person carrying out the threat activity to which the source protection plan policy applies.

For clarification, a “future” significant threat activity is one that is not yet established, but would be significant if established in the future. An “existing” activity that undergoes a



change of ownership is still considered an “existing” activity, therefore the “existing” threat policies in a source protection plan would continue to apply.

8.3.5 Question: Northern Ontario source protection planning process

Is the source protection planning process the same in Northern Ontario as it is in the rest of the province?

Response:

The Clean Water Act, 2006 (the Act) came into effect on October 19, 2006. The purpose of the Act is to protect existing and future sources of drinking water through the development of collaborative, locally driven, science-based protection plans.

The Act provides for two different processes for undertaking drinking water source protection. The first type of process applies to areas of Ontario that are within source protection area boundaries and involves the entire source protection planning process set out in s. 7 to 25 of the Act and the applicable regulations.

The second type of process can be used if the Minister enters into an agreement with a municipality to undertake a scoped process for source protection planning. This second, scoped process is expected to be the typical approach when working with northern municipalities.

The Source protection Programs Branch is developing a discussion paper to seek input on different approaches to undertaking scoped drinking water source protection planning in northern Ontario (areas outside of existing source protection areas).

There are six areas where the province will be seeking input:

- should the work be done on a watershed scale or some other scale;
- municipal partnership arrangements;
- need for a locally based committee and possible structure of this committee;
- agreement type;
- First Nations involvement; and
- the possibility of including systems other than municipal residential systems.

The discussion paper will be posted on the Environmental Bill of Rights Environmental Registry for public comment.

A number of pilot studies are also underway and these pilots and the discussion paper would be used to inform the program design for northern Ontario.



8.3.6 Question: private landowner & liability insurance

Can a Source Protection Committee require a private landowner to carry liability insurance through a Source Protection Plan?

Response:

At this time, staff believe that a SPC can prepare a source protection plan policy that requires a private landowner to carry liability insurance or financial assurance only if the policy is part of a policy that requires a Risk Management Plan (RMP) under S. 58 of the Clean Water Act (CWA) be established for a significant drinking water threat activity identified in the Assessment Report (AR). More specifically, the activities on a particular site would have to be identified as a significant drinking water threat activity. It is important to note that individuals are not bound by Source Protection Plan (SPP) policies per say, unless they are carrying out an activity that the SPP policy designates S. 57 (prohibition) or S. 58 (risk management plans) of the CWA to apply. As with all policies being considered for inclusion in SPP, consultation with the affected persons is anticipated to be required under future regulations governing the preparation of source protection plans. In developing draft policies, SPC should consider if the policy is feasible and where it is intended to be applied. Future regulations are also contemplating requiring supporting rationale to substantiate the SPCs policy decision be submitted with the SPP.

In summary, until future regulations clarify this, staff are of the opinion that the concept of “liability insurance / financial assurance” may therefore be seen as a type of risk management measure or mitigation measure which may be cited as one of the contents of a future RMP.

8.3.7 Question: NM plan & farm size or quantity of the source material

Can a source protection plan policy require a landowner to develop a nutrient management plan regardless of the farm size or quantity of the source material?

Response:

The requirement for nutrient management plans is set out in the Nutrient Management Act (NMA). The thresholds set out in the NMA (i.e. farm size, quantity of source material) that determine when a farmer is required to develop and get ministry approval of a nutrient management plan now are not changed if the nutrient management plan is prescribed to the CWA. When instruments are prescribed to the CWA, through regulation, it does not change the instrument’s existing powers or thresholds that trigger the need to apply for or develop the instrument.

Where there is a prescribed instrument under the CWA that will manage the significant threat activity then the SPC can write a policy that requires the crown to make changes to



the terms and conditions within an existing instrument or that would be required to be included in the future issuance of new instruments. If the instrument does not manage the activity identified as a significant threat (i.e. because it is below the thresholds set out in the NMA that would require a nutrient management plan) then the SPC could use other approaches to manage the risk, such as risk management plans (site specific plans that address significant threat activities by formally setting out actions that will be taken to reduce the risk), education and outreach, etc.

The ministry is still developing the regulation that will prescribe instruments to the CWA and any guidance to accompany that regulation.

8.3.8 Question: OMB appeal from an official plan from SPP

If there was an OMB appeal against something in an Official Plan which came from a SPP how does MOE think this would be dealt with and how would MOE consult with MMAH?

Response:

An appeal to the OMB on an amendment to the municipal official plan (OP), zoning by-law or any other municipal planning document or policy instrument can be made when the application to amend the municipal planning policy document is in process, meaning that the planning decision made by council/planning board or MMAH can be appealed to the OMB.

The Planning Act allows for an appeal to the OMB within 20 days of passing of a municipal land use planning decision.

If no appeal has been received on the 21st day after the decision was made, the opportunity to appeal is over and the decision stands. The application is now approved. After approval, no appeals can be made as the matter is considered closed.

Once a source protection plan (SPP) is approved, the municipality will be given time to incorporate the SPP policies into the municipal official plan through the OP conformity exercise provided for in section 39 of the Clean Water Act (CWA). This exercise will be treated as an official plan update which is technically an amendment to the official plan. Also Sections 40 and 42 of the CWA talk about Planning Act decisions conforming to the significant threat policies and designated Great Lakes policies in the Source Protection Plan, and that municipal OPs or zoning by-laws would have to be amended to conform with these.

During this process, council's decision can be appealed by the public to the OMB.

If there is an appeal, either one of the following two scenarios will be true:

- if MMAH is not the approval authority for the OP, then MOE does not have to talk to MMAH;
- if MMAH is the approval authority for the municipal/planning board OP, then MOE becomes involved as a One Window partner in the land use planning process. Both MMAH and MOE will have to deal with the appeal.



8.4 Ontario Drinking Water Stewardship Program (ODWSP)

8.4.1 Question: funding and source protection planning

What funding has been committed for source protection planning costs to date? How is source protection implementation going to be funded? Will the costs be downloaded to municipalities?

Response:

To date the crown has funded the planning phase of the source protection program. This funding, which totals approximately \$150 million from 2004/05 until 2009/10, has included all work related to the preparation of the terms of references and assessment reports as well as funding to establish and maintain Source Protection Committees and technical and project staff for Source Protection Authorities. Additional Funding provided during the planning phase will also include policy work related to the preparation of source protection plans (SPPs).

In addition to technical funding and capacity building funding, funding has been provided to landowners, farmers, municipalities, small and medium businesses, Conservation Authorities and NGOs through the Ontario Drinking Water Stewardship Program (ODWSP), established by the Clean Water Act, 2006. ODWSP funds have been provided for projects and initiatives, undertaken voluntarily before source protection plans are in place, related to the protection of drinking water sources. Financial assistance in the amount of \$14 million will be made available over the next two years until 2011. This year \$7 million in financial assistance is currently available for the following key areas:

- Education and Outreach
- Special Projects, and
- Early Actions

Beginning in late 2009, source protection planning in Ontario reaches a milestone. Science-based assessment reports being prepared by Source Protection Committees will begin to be issued in draft for public review and comments. At this point, the ODWSP will be at a critical junction as the assessments reports identify threats to drinking water sources and properties or activities that may contain or cause those threats.

Changes will be made to the ODWSP in 2010-11 to focus on addressing significant drinking water threats that are identified and to reduce the risk to our drinking water supplies. It is anticipated that the future ODWSP components will be posted on the Ministry's website in Spring 2010.

As Source Protection Authorities begin to submit assessment reports on behalf of Source Protection Committees over the next year for review and approval by the ministry, the



Source Protection Committees, Source Protection Authorities and the province will have a more realistic picture of the number of threats to source water. From this, estimations of the potential cost of implementing SPPs can be made. As there is still uncertainty on the cost of implementation of the SPP, provincial decisions on funding for SPP implementation beyond March 31, 2011 have not yet been made. Stewardship funding will also be available until that date, with no decisions yet about future funds under the ODWSP.

While the assessment reports are being completed, threat activities will be identified. The assessment reports may identify threats on private, provincial and municipal property and Source Protection Committees have various policy development approaches to address these threats. The final policy to address a significant threat may require work by an individual, for example by undertaking risk management measures on his/her property; by the province, for example by updating a Certificate of Approval; or, by the municipality, for example by hiring a risk management inspector to work with affected landowners to administer risk management plans. Individuals, the province and municipalities will all be affected by the policies in the SPP. As a result, the cost of implementation is anticipated to be shared among all parties.

Source Protection Committees will be expected to weigh the cost of implementing various policy options as they develop their SPP. In the case of municipalities, the CWA allows for incurred costs related to the administration of Part IV of the CWA (risk management plans, restricted lands uses, etc) to be recovered.

In addition, full cost accounting and water pricing for water protection, treatment and supply are also available as revenue sources for municipalities. It is recommended that the Source Protection Committees consider the cost of implementing various policy options in their evaluation of the advantages and disadvantages of each as they develop their SPP.

The province recognizes that there may be “hardship” cases, and is considering this as it assesses the need for financial assistance either broadly or on a case-by-case basis.

Going forward, the key to successful implementation of the program is municipalities’ vigilant participation and constructive input to meaningfully affect policy outcomes, and acknowledgment that the protection of our water supplies is a shared responsibility.

8.4.2 Question: interim risk management & stewardship program

What is Interim Risk Management with regards to the Stewardship program?



Response:

A Risk Management Plan (RMP) as defined in Section 2.0 of the Clean Water Act (CWA) is “a plan for reducing a risk prepared in accordance with the regulations and the rules”. An Interim Risk Management Plan is one prepared to cover the interim period between the approval of an assessment report and approval of the source protection plan, requiring a person engaged in an activity or proposing to engage in an activity to take such steps during that interim period to address a significant drinking water threat within a surface water intake protection zone or wellhead protection area. The activities and circumstances for interim risk management plans will be prescribed by the regulations.

In the context of the Ontario Drinking Water Stewardship Program (ODWSP), stewardship funds may be available in the interim period (after the AR is drafted but before the SPP is developed) for landowners taking specific actions to address an identified significant drinking water threat. This could include significant drinking water threats that the municipality is addressing through an Interim Risk Management Plan. Where the municipality and a landowner have negotiated an Interim Risk Management Plan, the landowner may be eligible for financial assistance to implement the risk management measures set out in the Interim Risk Management Plan.

8.5 Water Budget

8.5.1 Question: water budget process and the PTTW programs alignment

The permit to take water program is regulated using maps to depict Average Annual Flow Conditions and Summer Low Flow Conditions in High Use Water sheds. Could you please provide some information on how the source protection water budget process and the PTTW programs are aligned – specifically the mapping used for the current program and the maps generated from the source protection program.

Response:

The PTTW program and the high use watersheds designations can be informed by the work being undertaken under the Clean Water Act (CWA) in parts of the province. One of the rationales for seeking funding for advanced water budgets was that the advanced work could be used to update the mapping used for the high use watershed designations and support the review of applications for PTTW using a tool that will allow the consideration of cumulative impacts, growth, and drought. The limitation is that CWA work is only completed in 38 source protection areas in the province so it provides no information for the remaining watersheds. It is also based on a tiered process where advanced water budget work is only completed in areas where there are municipal drinking water systems and where the higher level water budgets indicate that the subwatersheds are stressed.

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We compared the requirement for water budgets under the technical rules to the 2004 Aqua Resource's report, which was used to inform the PTTW program. There are a few subtle differences/similarities as described below:

1. The primary differences are with the scale of evaluation (Tertiary Watershed for the high use watershed maps vs. Subwatershed for the CWA water budgets) and the method of determining consumptive water use (surface water consumption in Tertiary Watershed vs. water takings in specific aquifers and water bodies). The PTTW assessment also relied heavily on the OFAT tool to evaluate the Water Supply and Water Reserve terms in the evaluation and we have since developed more refined tools/techniques to evaluate these components of the water budget.
2. Water Supply – The high use watershed work under the PTTW were based on the surface water flows at the outlet(s) of a Tertiary Watershed the PTTW and assumes that these flows are representative of both the surface water and groundwater domains under steady state conditions. The assumption was that almost all groundwater flow eventually discharges to surface water at the outlet(s) of a Tertiary Watershed. Therefore, the assessment was performed at a scale that incorporated both surface water (supply and demand) and groundwater (supply and demand) into the estimate of “Percent Water Use” simultaneously. Under the Clean Water Act, water budgets are done for both groundwater and surface water components of the subwatersheds and consider both groundwater and surface water inputs.
3. The PTTW “Percent Water Use” evaluation did not perform separate evaluations of the surface water and groundwater domains for the reason stated in Comment 2 above. The “Percent Water Use” thresholds were evaluated for Average Annual and Summer Low Flow conditions. These thresholds are identical to the thresholds we have used for the groundwater domain. Because we are evaluating the groundwater and surface water domains separately our program has added the monthly maximum surface water thresholds which are similar to, but slightly different from, the groundwater thresholds. SPPB has been working with OPs to update staff and management on the science being used for the development of the water quantity risk assessment, so that they are aware that there is newer information available when making decisions in regard to PTTW. We are looking at options for OPs to have access to final approved water budgets and will be including OPs in the review and approval of water budgets.

Ultimately we anticipate that PTTW assessments will consider the more comprehensive water budget work under the CWA (delete: as Tier 1, and any Tier 2 and Tier 3 water budgets may) to inform where watersheds are potentially under hydrologic stress, either with respect to drinking water supplies or other uses. Thus, these water budgets can be



used to build in newer information and update what would have been used to create the PTTW maps for the same areas.

8.5.2 Question: Great Lakes Charter

Under the Great Lakes Charter work, are water budgets / water quantity analyses being done for the Great Lakes? If so, how does this work relate to source protection planning?

Response:

Basin-wide water budget and quantity analyses are not currently being looked at under the Great Lakes Charter and the Great Lakes - St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement). As part of the information and science commitments of the Agreement, the Great Lakes states and provinces are at present preparing a framework for the regional reporting of local water use information. The Agreement commits the Great Lakes states and provinces over time to provide leadership for the development of a collaborative science strategy that will support an improved understanding of the basin's water resources and the impacts of withdrawals.

The Source Protection Program does not currently require the preparation of water budgets at the scale of the Great Lakes Basin; however, watersheds subject to the Clean Water Act including those draining to a Great Lake will have a water budget prepared (a tier 1 for all watersheds/subwatersheds; a tier 2 for some subwatersheds; a tier 3 for specific local areas).

8.6 Other

8.6.1 Question: difference between Ammonia and Ammonium

1. What is the difference between Ammonia and Ammonium since Ammonia has an Ontario Water Quality Objective while Ammonium does not. Do they have the same land use sources?

2. Is Ammonia captured in Organic Nitrogen? Ammonia and Ammonium do not have Ontario Drinking Water Standards but Organic Nitrogen does. I understand that Organic Nitrogen is the difference between total Kjeldahl nitrogen and ammonia as stated in the MOE technical Support Document for the Ontario Drinking Water Standards, Objectives, and Guidelines. Does this mean that if either TKN or Ammonia has a high concentration, then Organic Nitrogen is also high, but if both are high or both are low Organic Nitrogen concentrations would be low? Does the later ever happen? Is there a situation where a separate Ontario Drinking Water Standard for Ammonia is ever useful?



Response:

Answer #1:

Nitrogen occurs in surface waters in numerous forms. This includes dissolved organic nitrogen (N_2), un-ionized ammonia (NH_3), ammonium ion (NH_4^+), nitrite (NO_2^-) and nitrate (NO_3^-). The predominant form of nitrogen present in a water body is dependent on a number of factors, including pH, temperature, oxygen availability, plant uptake, and mineralisation rates of organic nitrogen. Unionized ammonia (NH_3) is the form of nitrogen most toxic to aquatic organisms (specifically fish), and that is why a Provincial Water Quality Objective has been developed for this form. In aquatic environments, an equilibrium exists between unionized ammonia (NH_3) and the ammonium ion (NH_4^+), and the predominant species is dependent on both pH and temperature. With increasing pH as well as increasing temperature, one would see an increase in the concentration of unionized ammonia (NH_3).

Answer#2:

Ammonia is present in water as a result of the biological breakdown nitrogenous organic matter (e.g. amines and amino acids). Other sources of ammonia include industrial waste discharges. Ammonia is a form of inorganic nitrogen. Total Kjeldahl nitrogen (TKN) is the sum of organic nitrogen and ammonia nitrogen (where total ammonia nitrogen is the sum of NH_3 and NH_4^+). Total nitrogen is the sum of organic and inorganic forms usually calculated as the sum of TKN and total nitrates, where total nitrates equals NO_2^- plus NO_3^- . Therefore, if TKN levels are high, this does not automatically mean that organic nitrogen levels are high. And if ammonia levels are high, this does not mean that organic nitrogen levels are high (since ammonia is a form of inorganic nitrogen).

Drinking Water Guidelines have been developed for the following forms of nitrogen:

- 1) inorganic nitrate or NO_3^- (related to increased risk of methaemoglobinaemia in infants and small children),
- 2) inorganic nitrite or NO_2^- (related to increased risk of methaemoglobinaemia in infants and small children), and
- 3) organic nitrogen (since organic nitrogen frequently contain amine groups which can react with chlorine to reduce its disinfectant power).

8.6.2 Question: Oak Ridges Moraine (ORM)

In the following scenario is there a potential for legislative conflict and if so, how should it be dealt with – what is the provincial perspective on this?

For the source protection areas/regions that contain some portion of the Oak Ridges Moraine (ORM) there will be two, potentially very different, versions of highly vulnerable aquifer (HVA) area maps. If we assume that the source water protection versions of these



maps are technically superior based upon the methods used and improved data sources since the creation of the ORM maps then there are a couple of options available to address these two versions as follows:

For the ORM area, combine the highly vulnerable aquifer areas from the Ministry of Natural Resources (MNR) layer and the source water protection (SWP) layer (this would result in more geography covered in the net product than either of the inputs, which could be a significant portion of the ORM).

Acknowledge the improvement in the product provincially, and replace the ORMCP version of vulnerable aquifer mapping with the SWP version

Does the clause in the CWA regarding conflicts (i.e. that which is most protective of water prevails) apply here?

Response:

There are two aspects of the question that need to be answered – the first being the mapping requirements and the second being whether there is potential for legislative conflict between the requirements of the ORM Act and those of the CWA.

To answer the first part - the science under the Clean Water Act (CWA) should incorporate and improve on the ORM science so you should use the Clean Water Act Science and not the ORM science (regardless of the fact that the ORM mapping covers a larger area).

Secondly the conflict provision from the CWA does not apply here at this stage. The potential for the conflict provision to apply is relevant at the implementation stage. In other words it is not the maps themselves that provide protection to waters but the implementation of policies. When policies are being implemented under an approved source protection plan, should they conflict with a policy under the ORMP such that both cannot be complied with then the "most protective" conflict provision (i.e. of Section 105 of the CWA) applies.

This same advice would apply to all SPRs/SPAs that overlap with the Oak Ridges Moraine.

If the ORM mapping is to be updated using the outcomes from the CWA science they will have to look at the requirements of the ORM legislation.