

**Guideline for Implementing Spill Prevention and
Contingency Plans Regulatory Requirements
(O. Reg. 224/07)**

May 2007

Please note that the Spill Prevention and Contingency Plans regulation (O. Reg. 224/07) will take precedence where a conflict or ambiguity exists between this Guideline and the requirements of the regulation. While every effort has been made to ensure the accuracy of the information contained within this Guideline, and that it is consistent with the regulation, it should not be construed as legal advice.

Table of Contents

1.0	Definitions.....	1
2.0	Audience.....	3
3.0	Purpose and Context	3
4.0	Scope of the Regulation.....	4
4.1	Plants Subject to the Regulation (s. 1).....	4
4.2	Exemptions (s. 1(3))	5
4.3	Media	5
4.4	Thresholds and Target Chemicals	5
4.5	Implementation Timeline (s. 3(3))	6
5.0	Plan Components.....	6
5.1	Administrative Requirements.....	6
5.1.1	General Information (s. 4)	6
5.1.2	Plan Retention at the Plant (s. 7)	7
5.1.3	Plan Harmonization (s. 8).....	8
5.1.4	Summary of Plans (s. 11)	8
5.2	Spill Prevention Plans (s. 5).....	9
5.2.1	Prevention Planning: Hazard Identification (s. 5(1) paragraph 1).....	9
5.2.2	Prevention Planning: Analysis of Likelihood (s. 5(1), paragraphs 2 & 3)	11
5.2.3	Prevention Planning: Analysis of Adverse Effect (s. 5(1), paragraphs 4, 5 & 6).....	12
5.2.4	Prevention Planning: Risk Analysis and Priority Ranking (s. 5(1), paragraph 7).....	14
5.2.5	Prevention Planning: Risk Management Steps (s. 5(1), paragraphs 8 & 9, s. 5(2)).....	15
5.3	Spill Contingency Plans (s. 6)	16
5.3.1	Contingency Planning: Spill Preparedness	16
5.3.1.1	Requirements for All spills (s. 6(1), paragraph 5)	17
5.3.1.2	Spills with Potential Adverse Effects (s. 6(1), paragraphs 1 & 2).....	17
5.3.1.3	Non-Reportable Spills (s. 6(1), paragraphs 3 & 4, s. 6(2)).....	18
5.3.2	Contingency Planning: Spill Response	19
5.3.2.1	Response Procedures (s. 6(1), paragraphs 6 & 7)	19
5.3.2.2	Restoring the Natural Environment	20

5.4	Plan Review and Update	21
5.4.1	Review and Update after a Spill (s. 9).....	21
5.4.2	Annual Review and Update (s. 10)	21
5.4.3	Statement of Accuracy and Effectiveness (s. 10, paragraph 7).....	22
Appendix A – Spill Prevention and Contingency Plans Components		23
Appendix B – Sample Spill Prevention and Contingency Plans Table of Contents.....		25
Appendix C – Select Definitions of Places to be Mapped		30

1.0 DEFINITIONS

The following are definitions of terms used in this guideline.

Adverse Effect:	s. 1(1) of the <i>Environmental Protection Act</i> (EPA) defines adverse effect as one or more of the following: <ul style="list-style-type: none">• Impairment of the quality of the natural environment for any use that can be made of it.• Injury or damage to property or to plant or animal life.• Harm or material discomfort to any person.• An adverse effect on the health of any person.• Impairment to the safety of any person.• Rendering any property or plant or animal life unfit for human use.• Loss of enjoyment of normal use of property.• Interference with the normal conduct of business.
Contaminant:	Any solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of them resulting directly or indirectly from human activities that causes or may cause an adverse effect (s. 1(1) of the EPA).
DNAPLs:	This refers to Dense Non-Aqueous Phase Liquids.
EESLAA:	This refers to the <i>Environmental Enforcement Statute Law Amendment Act, 2005</i> , S.O. 2005, c. 12.
Environmental Penalty:	A penalty order that may be given to a regulated person who violates a provision of the EPA or <i>Ontario Water Resources Act</i> (OWRA) specified in regulation. (s. 182.1 of the EPA; s.106.1 of the OWRA).
EPA:	This refers to the <i>Environmental Protection Act</i> , R.S.O. 1990, c. E. 19, as amended.
EP Regulation:	This refers to Environmental Penalties, O. Reg. 222/07.
Hazard:	The potential to cause harm or adverse effects. In this document, the term hazard identification is used to refer to the process required by subsection 5(1), paragraph 1 of O. Reg. 224/07; namely, a written identification of all spills that: <ul style="list-style-type: none">i. may occur at the plant or relate to the operations of the plant,ii. are reasonably foreseeable; and,iii. have the potential to cause adverse effects.
Ministry:	Ministry of the Environment.
MISA:	This refers to Municipal Industrial Strategy for Abatement.

Non-Reportable Spills:	Spills that are exempt from the requirement to report under clauses 92(1) (a) and (b) and subsections 92(3) and (4) of the EPA by satisfying exemption criteria listed in O. Reg. 675/98 – “Classification and Exemption of Spills and Reporting of Discharges”.
OWRA:	This refers the <i>Ontario Water Resources Act</i> , R.S.O. 1990, c. O. 40, as amended.
Pollutant:	Means a contaminant other than heat, sound, vibration or radiation, and includes any substance from which a pollutant is derived (s. 91(1) of the EPA).
Plans:	This refers to spill prevention and contingency plans.
Plant:	Means an industrial facility and the real property, waste disposal sites and wastewater treatment facilities associated with it (s. 2 of O. Reg. 222/07).
Spills:	When used with reference to a pollutant, means a discharge into the natural environment, from or out of a structure vehicle or container, and that is abnormal in quality or quantity in light of all the circumstances of the discharge (s. 91(1) of the EPA).
Regulation:	This refers to the Spill Prevention and Contingency Plans, O. Reg. 224/07.
Risk:	Combination of the likelihood of a spill occurring and the extent of any adverse effects. (subsection. 5(1), paragraph 7 of O. Reg. 224/07).
Risk Management:	Coordinated activities directing an organization’s actions with regard to reduction of risk.
Spill Contingency Plans:	Documented procedures and actions to be taken during and after a spill event in order to eliminate or reduce the consequences or adverse effects of a spill. (section 6 of O. Reg. 224/07).
Spill Prevention Plans:	Documented procedures and actions to be taken prior to a spill event in order to eliminate or reduce the likelihood of a spill occurring. (section 5 of O. Reg. 224/07).

2.0 AUDIENCE

This Guideline is primarily for those subject to the Spill Prevention and Contingency Plans, O. Reg. 224/07 (“Regulation”); that is, those that meet the criteria in section 1 of the regulation. In general, the regulation applies to plants in sectors subject to the Municipal Industrial Strategy for Abatement (“MISA”) regulations made under the EPA. However, this Guideline also has broader application for those not subject to the regulation (i.e., commercial businesses, non-MISA industries, municipalities, etc.) seeking a Class X reporting exemption under Ontario Regulation 675/98 (see Part 5.3.1.3 of this document) or as a reference for those seeking to implement prevention and/or contingency plans as part of efforts to minimize the impacts and risks of spills.

3.0 PURPOSE AND CONTEXT

In June 2005, the *Environmental Enforcement Statute Law Amendment Act* (EESLAA) was passed, which amended the *Environmental Protection Act* (EPA) and the *Ontario Water Resources Act* (OWRA). In addition to the numerous amendments that strengthened abatement and enforcement related aspects of the legislation, the EESLAA enabled the Ministry to require the regulated community to develop and implement spill prevention and contingency plans (“Plans”) through the following two mechanisms:

1. An order issued by a designated Director (EPA section 18(1), paragraph 7) or Provincial Officer (EPA section 157.1)
2. By regulation, but only to a class of persons prescribed in the regulation (EPA section 91.1)

The primary objective of these Plans is to help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result. These plans provide detailed information and guidance on actions important for the prevention of spills and procedures to detect and respond to them when they occur.

The Ministry has developed, after extensive consultation with stakeholders representing the MISA sectors, the Regulation under section 91.1 of the EPA. This Regulation defines a class of persons that is subject to the Regulation, as well as the requirements for developing and implementing Plans. The design of this Regulation is consistent with the principles of risk management of environmental emergencies (i.e., prevention, planning, response, restoration and review).

The purpose of this Guideline is to provide the regulated community guidance on the development and implementation of Plans, as prescribed by the Regulation by explaining the meaning of key terms of the Regulation and providing details on the minimum

ORDERS TO DEVELOP PLANS

- An order requiring development of a Plan may be given to any person so as to prevent or reduce the risk of a discharge into the natural environment or to prevent or minimize an adverse effect where a discharge has occurred.
- When drafting an order to develop a Plan, Ministry staff may consider including the requirements, in whole or in part, of the Regulation.
- Where a Plan already exists (i.e., due to an order, as part of an approval or by regulation), and a deficiency is noted, an order may be issued to amend the Plan (s.18 of the EPA).

requirements for prevention and contingency planning for spills. Other sectors may also look to this document as a guide for the preparation of Plans.

Please note that the Regulation will take precedence where a conflict or ambiguity exists between this Guideline and the requirements of the Regulation. While every effort has been made to ensure the accuracy of the information contained within this Guideline, and that it is consistent with the Regulation, it should not be construed as legal advice.

4.0 SCOPE OF THE REGULATION

4.1 PLANTS SUBJECT TO THE REGULATION (S. 1)

In general, the Regulation applies to those persons who are or were at any time subject to environmental penalties (EPs). Section 3(1) of O. Reg. 222/07 (“EP Regulation”) prescribes the class of persons, known as “regulated persons” who are subject to the EP Regulation. Generally speaking, this includes those persons who own or operate an industrial plant that falls within one of the nine MISA industrial sectors, and that discharge to a surface water body or private sewage works. Note that regulated person is defined in section 1 of the EPA to mean, among other things, a person who holds or is required to hold an approval. As such, both O. Reg. 222/07 and O. Reg. 223/07 are to apply to corporations as opposed to individuals.

For ease of reference in this document, persons subject to the Regulation are referred to as “plants”.

LINKAGES BETWEEN ENVIRONMENTAL PENALTIES AND THE SPILL PREVENTION & CONTINGENCY PLAN REGULATION

- Section 3(1) of the EP Regulation defines regulated persons as those plants listed in Table 1 of the regulation, metal mines as defined in O. Reg. 560/94 or those plants that discharge effluent to a surface water body or private sewage works and meet specified sector criteria. All of these plants are required to develop spill prevention and contingency plans.
- Section 16 of the EP Regulation under the EPA (section 15 of the OWRA regulation) outlines the reductions that a regulated person can receive for preventive and mitigative measures when a penalty is being assessed. Many of the factors considered for reductions are also components that are considered as part of the spill prevention and contingency plan.

Note that the requirements of the Regulation will continue to apply to a plant, even if that plant is subsequently exempted from the EP Regulation (e.g., ceases to discharge to a surface water body or private sewage works). See Part 4.2 of this Guideline for a discussion on the exemption requirements for the Regulation.

Plans must address the entire plant, as defined in section 2 of the Regulation. In the cases where a regulated plant has leased portions of the plant to entities that do not have a regulatory requirement to develop plans, the regulated plant must consider impacts of spills from the lessee, including the appropriate response. However, if the operations

occurring on the leased portions of the plant are integrated into the operations of the plant that is subject to the Regulation (e.g. where the lessee produces the necessary raw materials for the plant to function), then operations of the lessee must be included in the overall Plans.

4.2 EXEMPTIONS (S. 1(3))

The requirements of the Regulation continue to apply to plants as long as there are Ministry approvals (Certificates of Approval and permits) in force, even if the plants are temporarily or permanently closed. For these plants the details of the plans should be updated to reflect the operating status of the plant and the possibility of spills occurring at the site due to factors other than those related to when it was in operation (i.e., vandalism, storm events, etc.).

Those plants that have permanently closed or permanently changed operations may request to have their approvals revoked. If a plant can demonstrate that it has had the relevant Ministry approvals revoked, it will no longer be subject to the requirements of the Regulation. The relevant approvals that must be revoked prior to satisfying the exemption include:

- Section 53 OWRA sewage works approvals
- Section 9 EPA air approvals
- Section 27 EPA waste approvals
- Section 34 OWRA permits to take water

If a plant is exempt due to the provisions above and restarts production, it is subject to the Regulation as soon as it is required to obtain new approvals (under the EPA or OWRA), as long as it continues to meet the definition of “regulated person” under section 3(1) of the EP Regulation.

Note that mining operations which are inactive or not operating, either temporarily or permanently, and that are subject to a closure plan under the *Mining Act*, remain subject to the requirements of the Regulation until the approvals noted above have been revoked. However, these mines may choose to harmonize relevant aspects of their closure plan with the requirements of the Regulation (see Part 5.1.3 of this Guideline).

4.3 MEDIA

Plans developed under the Regulation must include an analysis of spills to all media – air, land and water.

4.4 THRESHOLDS AND TARGET CHEMICALS

The Regulation does not specify minimum threshold levels or target chemicals for which the requirement to develop Plans would be triggered. As discussed in more detail in following parts of this Guideline, the Regulation requires that Plans be developed and implemented to prevent and mitigate spills of any pollutant that satisfies criteria prescribed in paragraph 1 of section 5(1) of the Regulation (i.e., may occur at the plant, are reasonably foreseeable and have the potential to cause an adverse effect). Part 5.2.1 of this Guideline provides guidance on some of the chemicals and compounds that must be considered in the plans.

4.5 IMPLEMENTATION TIMELINE (S. 3(3))

For plants that are currently subject to the Regulation, Plans must be developed and implemented by September 1, 2008. For new plants that come into operation after September 1, 2008, Plans must be developed and implemented by the first date the plant comes into operation.

5.0 PLAN COMPONENTS

The following parts of the Guideline discuss in detail the components of both spill prevention and contingency plans. A diagram of the major components of the Plans is included in Appendix A.

5.1 ADMINISTRATIVE REQUIREMENTS

5.1.1 GENERAL INFORMATION (S. 4)

The “General Information” section (section 4) defines the common requirements for both spill prevention plans and spill contingency plans at the plant. In general, the Plans must have the following information:

1. *Identification of the plant and plant contact information (section 4, subparagraph 1).*

This includes, the plant name (legal and operating, if different), owner name, mailing address, property location, plant telephone numbers, and the name of the person responsible for ensuring compliance with the regulation as a whole. Some items to note:

 - The requirement for property location information (section 4, subparagraph 1 iv) is primarily intended for locating plants situated in remote locations. Information that may satisfy this requirement includes, but is not limited to identifying the plant entrance with a street address, latitude and longitude or UTM coordinates.
 - The Regulation requires contact information (name, e-mail and telephone number) of persons at the plant who are typically involved as part of a spill response, which must include, where applicable: the plant manager, spill response coordinator and alternate (as referenced under subsection 6(1), subparagraph 5 i), security, environmental coordinator, health and safety coordinator, internal and external persons responsible for spill response (i.e. response team, mutual aid teams), emergency services coordinator and any relevant external contractors (e.g. waste disposal contractors, emergency response contractors, etc.). The plant should add any additional contacts, as appropriate, to provide a comprehensive listing in support of the prevention and contingency plans.
 - The person identified as responsible for ensuring compliance with the Regulation (section 4, subparagraph 1 viii) should at a minimum be at the level of a plant manager (or its equivalent). This person may or may not be the same person who makes a written statement regarding the accuracy and effectiveness of the Plans (subsection 10(1), paragraph 7). For example, the plant manager may be responsible for ensuring compliance with the Regulation, but a corporate officer may be responsible for making the statement in regards to the accuracy and effectiveness of the Plans. Alternatively, the corporate officer may be identified as the person responsible for both requirements.

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2. *Actions or requirements for gaining access to the site, both during hours of operation and off-hours (section 4, paragraph 2).* This may include, but is not limited to, identification of plant entrances, health and safety requirements (i.e. personal protective equipment required, etc.), plant security contact information and general access procedures, etc. When developing the Plans, a determination should be made as to the appropriate level of information that provides enough detail to access the plant without compromising security.
 3. *Scaled property plans and drawings showing structures and plant features that may be relevant to spill prevention and response (section 4, paragraph 3).* The Regulation specifies which structures are to be identified in the site plans including: storage, handling, processing and disposal areas of the plant, discharge points, floor drains that have the potential to discharge into the natural environment, above and below ground storage tanks, etc.

The drawings must be done at a scale where the features identified are accurately shown and discernable. Scaled plans of outdoor features may include the use of either drawn site plans or annotated aerial photography or satellite imagery. Scaled plans of indoor features may include annotated engineering or architectural drawings.

The Ministry strongly recommends that certain processes and locations be identified on the drawings and plans required under section 4. Processes which use compounds that, due to their nature, are a concern to human health or the environment (e.g. referenced in the EP Regulation as a toxic substance, dense non-aqueous phase liquids, etc.) should be identified. Similarly, the locations in which such substances are stored, handled or transferred should be identified.

5.1.2 PLAN RETENTION AT THE PLANT (S. 7)

The most up to date version of the plans must be retained at the plant. As part of its abatement activities, the Ministry may inspect the Plans for compliance with aspects of the Regulation.

Note that the prevention plans and the contingency plans may be operationally divided throughout the plant in order to maximize the effectiveness of its implementation. For example, personnel at a particular process may only require the section of the Plan pertaining to their operations (i.e. procedures to respond to the types of spill that are associated with the process). Ideally, a consolidated copy of the Plans (particularly the contingency plan) should be available for reference by plant personnel for version tracking, review and update and for assisting emergency responders when responding to plant-level incidents.

5.1.3 PLAN HARMONIZATION (S. 8)

The Regulation recognizes that there are other environmental emergency plans that may be mandated by industry organizations or other levels of government. Similarly, plants may have voluntarily developed and implemented Plans. The Regulation allows those plans to be used wholly or in part to satisfy the requirements of the Regulation.

Examples of plans that may be harmonized include, but are not limited to:

- Federal Environmental Emergency Plans (E2) under Part 8 of CEPA
- Plans developed under an existing Environmental Management System (i.e., ISO 14001, Responsible Care)
- Other national or international standards on emergency planning and response (i.e., CAN/CSA-Z731, NFPA 1600)
- Closure plans under the *Mining Act*

5.1.4 SUMMARY OF PLANS (S. 11)

The Regulation requires that a summary of the plans be available on request to the following:

1. A municipal emergency control group established under section 12 of Ontario Regulation 380/04 standards made under the *Emergency Management and Civil Protection Act*,
2. A municipal by-law inspector,
3. The local fire department,
4. The local police department,
5. The medical officer of health; and,
6. Environment Canada Environmental Emergencies Officer

At a minimum, the summary should include the following:

1. All of the general information included under section 4 of the Regulation.
2. A summary of the likelihood and extent of adverse effects that may occur for spills identified under subsection 5(1) of the Regulation.
3. The map of places that may be affected by a spill under subsection 5(1), paragraph 4.
4. A summary of the preventive steps identified under subsection 5(1), subparagraph 8 ii.
5. A summary of the steps identified under subsection 6(1), paragraph 1 on preventing or minimizing adverse effects from spills.
6. Any other information or procedures that may be relevant regarding the response to a spill, particularly those that have off-site environmental or human health impacts.

The plant should consult with the requesting organization in regards to which aspects of the plans should be included in the summary that is provided.

5.2 SPILL PREVENTION PLANS (S. 5)

The purpose of the spill prevention plans is to document and assess the risk of spills happening at a plant so as to institute procedures and actions to reduce the risk of those spills from occurring.

The analysis of spills, for the purposes of prevention planning, looks at two factors when determining the appropriate course of action:

1. The likelihood of the spill occurring
2. The nature and extent of adverse effect from the spill

By considering the likelihood of the spill and the nature and extent of any potential adverse effects, the regulation requires the plant to take a risk management approach when considering spill events at the plant.

Effective implementation of spill prevention planning is an important proactive component for minimizing the risks posed by spills at a plant. By implementing effective spill prevention, the risk of spills can be reduced in magnitude and perhaps even avoided. Further, by planning to prevent spills in the first place, it reduces the risk of causing an adverse effect (e.g. due to failure of spill response to minimize adverse effects). It is therefore vital that, as part of the plant's risk management activities, adequate time and resources be spent on developing, implementing and maintaining comprehensive and robust spill prevention plans.

5.2.1 PREVENTION PLANNING: HAZARD IDENTIFICATION (S. 5(1) PARAGRAPH 1)

Prior to any consideration of risk, there needs to be an identification of the spill hazards at the plant. During the hazard identification phase, the plant must identify spills that meet all of the following three (3) criteria (subsection 5(1), paragraph 1):

1. The spill is such that it may occur at the plant or be related to the operations of the plant.
2. The spill is such that it is reasonably foreseeable (i.e., the circumstances leading to the spill can be anticipated to occur).
3. The spill is such that it causes, or may cause (or "has potential to cause") an adverse effect.

Other spills noted during the hazard identification process (i.e., ones that may occur at the plant, that are foreseeable, but do not have the potential to cause an adverse effect), may be included in the analysis, at the plant's discretion.

Procedurally, the plant may choose to identify hazards by incorporating the following steps into their approach:

1. Identify the compounds and chemicals at the plant that once released have the potential to cause an adverse effect (e.g. due to their nature, quantities used, etc.), the locations they are stored, handled or transferred and the processes in which they are used.
2. Identify potential routes into the natural environment in proximity to where those compounds and chemicals are stored, transported, used and processed (e.g. nearby drains leading to surface waters, vents, etc.).

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3. Identify the specific scenarios and circumstances (e.g. quantity that would need to be spilled, failures in control mechanisms that would have to occur, etc.) under which identified compounds may enter the natural environment through the routes identified above and thus potentially cause an adverse effect.

Please note that it may be useful to incorporate the above information into the plans and drawings completed for the purposes of section 4, paragraph 3.

Using the above approach, the plant needs only to consider those aspects of the plant that would allow contaminants to enter the natural environment, with the potential to cause an adverse effect.

To assist in identifying compounds and spill scenarios that may lead to adverse effects, the plant must refer to existing literature detailing pollutants, their chemical and physical properties, environmental fate and potential adverse effects (e.g. Material Safety Data Sheets, scientific journals etc.). As a starting point, the Ministry recommends that the presence, use or discharge of the following substances must be considered when conducting the hazard identification (note: the following is not an exhaustive list, and any spills of compounds not listed below that meet the three regulatory criteria noted above must be identified):

- **Dense Non-Aqueous Phase Liquids (“DNAPLs”)** – DNAPLs are compounds with a specific gravity greater than that of water and are relatively immiscible. These compounds include a number of petroleum products and chlorinated solvents (e.g. dichloromethane, ethylene glycol, trichloroethane, trichloroethylene, etc.). When released in the environment, DNAPLs have the potential to cause significant adverse effects in groundwater.
- **Air Toxics** – Air toxics include compounds identified in the Ministry’s *“Summary of O. Reg 419/05 Standards and Point of Impingement Guidelines and Ambient Air Quality Criteria (AAQCs)”* as amended from time to time and in other standard setting Ontario air regulations and guidelines. Compounds which, when released into the environment, approach or exceed a listed standard, point of impingement value or air quality criteria with the potential to result in an adverse effect must be considered. In particular, special attention should be paid to volatile and semi-volatile organic compounds, polycyclic aromatic hydrocarbons, heavy metals, refrigerants and aldehydes.
- **Toxic Substances under the EP Regulation** – The term “toxic substance” is defined in section 2 of O. Reg 222/07 to include compounds that are listed in the “Environmental Penalties – Code of Toxic Substances”. These listed compounds are considered to be inherently toxic and persistent, or inherently toxic and bioaccumulative when released into the natural environment.

5.2.2 PREVENTION PLANNING: ANALYSIS OF LIKELIHOOD (S. 5(1), PARAGRAPHS 2 & 3)

Those spills that satisfy the three regulatory criteria during the hazard identification phase must be further analysed to determine the likelihood of occurrence. This analysis must consider a number of factors related to the operations of the plant and how potential pollutants are handled. These include the consideration of:

1. The type of pollutants used or created at the plant, their characteristics and properties, and the maximum quantities used or created.
2. How the pollutant is used at the plant (i.e., storage, handling, processing and disposal). This would include the mechanisms (i.e., equipment, material, processes, etc.) used to store, handle, process and dispose of pollutants.
3. Where, in a geographic and physical sense, the pollutant is used at the plant (i.e., proximity to a surface water body, near a floor drain, within a containment structure, indoors, etc.). As stated previously, it may be useful to incorporate this information into the plans and drawings completed for the purposes of paragraph 3 of section 4.
4. The history of spills at the plant in order to provide insight into the frequency of spills and the possibility of similar spills in the future. The historical spill analysis should go far enough back to provide a sufficient amount of data while still being relevant to the current processes at the plant.
5. Any other factors that the plant may consider relevant

For each estimate of likelihood, there must be a documented explanation of how likelihood was determined in the plan. However, this may be included as an appendix. The methodology to determine likelihood may differ from spill to spill, depending on the availability of supporting data and the type of spill being analysed. It is recommended, however, that regardless of the approach used to estimate likelihood, all spills should ultimately be analyzed on a common scale for comparative purposes. (Please refer to the “Estimating Likelihood” sidebar).

EXAMPLE: ESTIMATING LIKELIHOOD

The probability of a spill occurring may be estimated using a variety of means. For example, the analyst may consider any one of the following in conjunction with the factors listed in the Regulation:

- Historical weather data
- Equipment failure rates (historic and manufacturer)
- Preventative maintenance data
- Professional judgment
- Human error analysis

Regardless of the approach taken to estimate the probability of a spill, it is recommended that all spills be analysed on a common scale for comparative purposes. The following table provides an example of a scale for categorizing the likelihood of an event.¹

Likelihood/Probability	Description
Very Unlikely	Less than 1 event every 200 years
Unlikely	At least 1 event every 200 years
Possible	At least 1 event every 30 years
Very Possible	At least 1 event every 10 years
Certain	1 or more event every year

¹ NERAM (2003) “Basic Frameworks for Risk Management”

5.2.3 PREVENTION PLANNING: ANALYSIS OF ADVERSE EFFECT (S. 5(1), PARAGRAPHS 4, 5 & 6)

Along with the analysis of likelihood, an analysis of the extent of potential adverse effects, or impacts, must be conducted (subsection 5(1), paragraphs 4 & 5).

The first step in the analysis of adverse effects is to identify, using a map, the places that may be impacted by each of the prescribed spills from the plant. The specific places that must be identified are listed in the Regulation, and include:

1. Health care facilities.
2. Senior citizen’s and long-term care facilities.
3. Child care facilities.
4. Educational facilities.
5. Dwellings.
6. Places of business.
7. Transportation corridors.
8. Vulnerable areas defined under subsection 2(1) of the *Clean Water Act, 2006*.
9. Sensitive ground water and surface water features identified in an instrument under the *Planning Act*.
10. Wells and/or intakes to drinking water systems.
11. Flood plain areas.
12. Fish and wildlife habitat areas.

For each of the twelve places identified above, the plant must determine the type of adverse effect, if any, and the extent of that adverse effect at each of the places. (refer to Appendix C of this Guideline for more detailed descriptions of some of the above places).

When determining the type and extent of adverse effect, the plant must consider the range of possible scenarios, including the “worst-case” scenario (i.e. where

EXAMPLE: ASSESSING ADVERSE EFFECTS

The potential adverse effects of a spill may be estimated using a variety of means. For example, the analyst may consider any one or more of the following:

- Physical and chemical characteristics of the pollutant
- Which media the pollutant is released to (i.e., air, land or water)
- Known human health and environmental threats posed by the pollutant
- Professional judgment
- Characteristics of the receptor

Regardless of the approach taken to estimate the adverse effects, it is recommended that all spills be analysed on a common scale for comparative purposes. The following table provides an example of a scale for categorizing the adverse effects of a spill event.

Impact	Description
Catastrophic	May cause fatalities
Severe	Impacts to health (non-fatal) or widespread injury or damage to the environment that is difficult to remediate
Moderate	Material discomfort or localized impacts to property or the natural environment that can be remediated.
Low	Easily remediated impacts to individual property.
None	No impact

an uncontrolled release of a maximum amount occurs). As part of this analysis, the plant should consider its accident history and determine if previous releases that were similar to the worst-case (if any) resulted in adverse effects. Where the worst-case scenario does not indicate any possible adverse effects, that scenario does not need to be considered as part of the spill prevention plans. However, where the worst-case scenario does indicate the possibility of adverse effects, the plant should then consider any potential alternative scenarios. These scenarios, assuming any exist, would typically be those that are more likely to occur while still having the potential to cause an adverse effect (i.e. where controls are only partially effective). As part of this analysis, the plant can again consider its accident history, this time to identify the possible alternative scenarios and the resulting adverse effects. All of these scenarios (worst case and alternative(s)) must be included in the prevention plans and assessed as part of the risk analysis and priority ranking process (Part 5.2.4 of this Guideline) to determine the appropriate risk management planning activities for the plant.

As with estimating likelihood, the methodology to determine adverse effects may differ from spill to spill, depending on the availability of supporting data and the type of spill being analysed. It is recommended, however, that regardless of the approach used to estimate potential adverse effects, all spills should ultimately be analyzed on a common scale for comparative purposes. (Please refer to the “Assessing Adverse Effects” sidebar) Also, the methodology used to determine the type and extent of adverse effect must be documented. This document may be included as an appendix.

**EXAMPLE: WORST-CASE
VS. ALTERNATIVE**

An example of a worst-case scenario versus an alternative for a chemical storage tank:

Worst Case: Entire tank explodes or ruptures, releasing all stored chemicals at once. No control measures able to mitigate release.

Alternative #1: Main tank valve fails, releasing chemical at a given rate over a longer period of time.

Alternative #2: Secondary containment or other control measures are able to only partially mitigate the release.

Alternative #3: And so on...

5.2.4 PREVENTION PLANNING: RISK ANALYSIS AND PRIORITY RANKING (S. 5(1), PARAGRAPH 7)

Based on the likelihood and adverse effect analyses, the plant must assess the relative risk posed by each spill scenario that has the potential to cause adverse effects. The risk posed by a spill is determined by considering the likelihood of the spill occurring in conjunction with the extent of the potential adverse effects. As an example, Figure 1 illustrates a simple, high-level analysis of relative risk, based on the scales for likelihood and adverse effect shown in Parts 5.2.2 and 5.2.3 of this Guideline. Note that the specific methodology chosen by the plant to determine risk must be documented as part of the Plans.

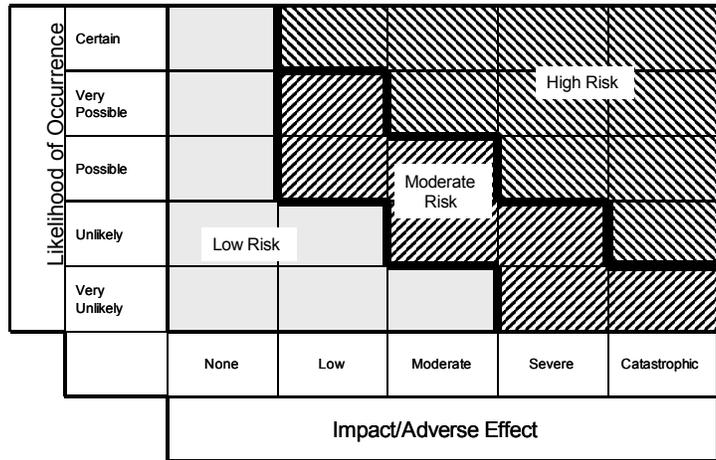


Figure 1: Risk analysis matrix.

Based on the methodology used to determine risk, the plant must priority rank spill events from highest risk to lowest risk in order to better plan its actions with regards to spill prevention.

After determining the relative risk posed by each spill, the plant must:

1. Determine the threshold level of risk above which spills are considered to pose a “significant” risk. As an example, using Figure 1, the Ministry would expect that all “high” risk and a substantive proportion of “moderate” risk spills would, at a minimum, be identified as those posing a “significant” risk.
2. Based on all the scenarios considered (including both worst-case and alternative scenarios as discussed in Part 5.2.3 of this Guideline) identify all the spill scenarios that qualify as posing a “significant” risk.

The following two documents, as updated from time to time, provide some guidance on the methodology for determining risk and appropriate risk management planning. Note, that even though these documents are primarily focussed on releases to air and their associated risks, the methodology used to determine appropriate scenarios for risk management planning purposes may be useful:

- “General Guidance on Risk Management Programs for Chemical Accident Prevention (40 CFR Part 68)”, United States Environmental Protection Agency, (April 2004)
- “Risk Management Guide for Major Industrial Accidents, Intended for Municipalities and Industry”, Conseil pour la Reduction des Accidents Industriels Majeurs (CRAIM) (July 2002)

Aside from the above, other industry specific guidance or equivalent standards may also be used to determine appropriate scenarios and levels of risk for the purposes of risk management planning. As stated previously, whichever methodology is used, the approach must be documented in the plans as required by paragraphs 3 and 6 of section 5(1).

5.2.5 PREVENTION PLANNING: RISK MANAGEMENT STEPS (S. 5(1), PARAGRAPHS 8 & 9, S. 5(2))

For those spills identified as having a significant risk during the risk assessment required by subsection 5(1), paragraph 7, the plant must identify all the possible risk management steps that could be taken by the plant to prevent or reduce the risk posed (subsection 5(1), subparagraph 8 i). These steps should include a broad range of actions that a plant could take to reduce the potential of a spill (e.g. training, redirecting traffic, etc.) and should include an investigation of industry best practices in regards to spill prevention and risk reduction.

Next, of all the risk management steps that have been identified, the plant must list those that will be or have already been taken to prevent or reduce the risk of spills (subsection 5(1), subparagraph 8 ii). It is recommended that for planning purposes, the plant should indicate the expected implementation dates for each of the steps that have been identified as ones that will be taken.

In addition, the Regulation requires that, at a minimum, the plant must also consider appropriateness of taking each of the following actions to reduce the risk posed by a spill that poses a significant risk (subsection 5(2)):

1. Constructing or installing containment structures to prevent spilled material from entering the natural environment.
2. Installing and maintaining equipment that monitors the operations of the plant – this may include installation of alarm systems or other notification systems that will alert operators that a spill is imminent.
3. Changing industrial processes (including installing equipment) that may reduce the risk of a spill (i.e., substituting materials in the production process for less hazardous compounds, etc.).
4. Instituting preventive maintenance programs to avoid spills resulting from equipment or infrastructure failure.

For any steps that will not be taken, the plant must then provide written documentation explaining the rationale for not taking the steps identified in subsection 5(1), subparagraph 8i. After a reportable spill occurs, if steps were not identified in subsection 5(1), paragraph 8 ii, or if steps were identified but have not yet been implemented, the plant must review its risk assessment to ensure it is adequate with respect to the prevention of spills.

As noted in Part 5.2.3 of this Guideline, the plant should have identified the worst-case scenario and any pertinent alternative scenarios for a particular pollutant or process. The plant may determine that the worst-case scenario is inappropriate for further risk management steps (e.g. the likelihood of occurrence puts it below the “significant” risk threshold, all possible risk management steps have already been taken, there are no feasible risk management steps that exist, etc.) while the alternative scenarios are more appropriate for risk management planning purposes (e.g. more likely to occur, possible risk management steps exist to reduce the risk, etc.). In this case, the plant would identify appropriate risk management steps to reduce the risk of the applicable alternative scenario(s) occurring. Conversely, the plant may, as part of its analysis determine that the worst-case scenario is significant and warrants risk reduction, whereas the alternative scenarios fall below the “significant” threshold (i.e. adverse

effects are low). The assessment of which risks need to be addressed by risk management steps must be done by the plant on a case-by-case basis.

Where a risk management step has been identified in subsection 5(1), paragraph 8 ii, subsection 5(1), paragraph 9 of the Regulation also requires procedures be developed that ensure that:

1. Any installed or constructed equipment, structure, or mechanism be monitored and maintained in good repair.
2. Personnel be trained in the operation, maintenance and monitoring of any installed or constructed equipment, structure or mechanism.
3. Personnel be trained in implementing the risk prevention step.

5.3 SPILL CONTINGENCY PLANS (S. 6)

The purpose of the spill contingency plans is to document and implement procedures that prevent or minimize any adverse effects that result or may result once a spill has occurred by facilitating a suitable, timely and adequate response. The Regulation requires specific procedures be developed that:

1. Prepare the plant for spills (i.e. have the appropriate resources and procedures)
2. Provide the appropriate response (i.e. use the spill response resources effectively)

Whereas prevention plans are a proactive approach to avoiding spills, contingency plans must deal with incidents where preventive measures were unable to fully preclude the spill from occurring or where the spill was not a foreseeable event and as such could not be prevented.

In general, the contingency plans should aim to achieve the following:

- Immediate notification within the plant to ensure that an appropriate and timely response is initiated;
- Compliance with legal notification requirements to the Ministry, municipal entities and other provincial and federal regulatory agencies, as applicable;
- The earliest possible response with available or contracted resources;
- An efficient and effective deployment of response resources;
- Timely liaison with regulatory and, if required, municipal authorities at the spill;
- A response consistent with remedial measures that are required; and,
- Establishment of a response structure with adequate decision-making authority.

5.3.1 CONTINGENCY PLANNING: SPILL PREPAREDNESS

As part of spill preparedness, the plant should have in place procedures that will help it prepare for all types of spills at a plant prior to their occurrence.

5.3.1.1 Requirements for All spills (s. 6(1), paragraph 5)

In preparation for a spill, the plant must have written procedures which include:

1. Identification of an individual who is responsible for implementing the plans (spill response coordinator). This individual would be the person who will coordinate the spill response effort.
2. An analysis, based on the circumstances and potential adverse effects, of potential spills so as to determine the appropriate level of response that might be required, including whether or not a spill response team needs to be established. This requirement anticipates the potential spills at the plant and effectively establishes a decision-making and response structure so that the appropriate response is apparent should a spill occur.
 - o The level of response includes consideration of the degree of involvement required for the response, and the type of resources required for the response.
 - i. *Degree of involvement* – For example, a small, local spill may only require personnel in the immediate vicinity to respond. For a spill that involves larger portions of the plant, a plant-wide spill response team may need to be established to respond. For a spill with serious or wide-spread off-site impacts, a response including assistance from outside the plant may be necessary (i.e., fire department, other companies which have mutual aid agreements, etc.).
 - ii. *Type of resources* – Depending on the circumstances of the spill, this may include the type of spill response equipment, material and personnel that would be required to respond to a spill.
3. Establishment of a spill response team, if it is determined to be necessary. The plant should determine under which circumstances a spill response team is necessary and who should be on the team. For example, it may be determined that a team should be established only for plant-wide incidents. Alternatively, it may be determined that a team be established for all incidents, with the size of team and resources changing based on the circumstances of the spill.
4. Documentation of the roles and responsibilities of personnel responding to a spill.
5. Personnel are trained in their roles and responsibilities as well as in the use of the spill response equipment required to deal with a specified spill event.
6. The equipment and material required to respond to an incident is inspected and maintained in a state of readiness to respond to a spill.

5.3.1.2 Spills with Potential Adverse Effects (s. 6(1), paragraphs 1 & 2)

In addition to the general aims for contingency plans that were set out in Part 5.3.1.1 of this Guideline, the Regulation prescribes specific requirements for those spills that were identified during the hazard identification process (subsection 5(1), paragraph 1). Due to the potential risks posed from these spills, the Regulation requires that the contingency plans identify specific steps to prevent or minimize the associated adverse effects should the spill occur (subsection 6(1), paragraph 1). In other words, spill contingency plans must be developed for all spills that meet the three criteria set out in subsection 5(1), paragraph 1 of the Regulation. As part of this process, consideration must be made regarding the appropriateness of taking one or more of the following steps:

1. Acquiring spill response equipment to specifically deal with the spill, and
2. Installing a system that would alert plant operators of a spill when it occurs.
3. Installing a system that would alert members of the public who may be adversely effected of a spill when it occurs.

The purpose of this requirement is to specifically require a plant to analyze the steps needed to deal with those spills that meet the three criteria of subsection 5(1), paragraph 1 (i.e. may occur at the plant, is reasonably foreseeable and has the potential to cause an adverse effect), so as to have the appropriate measures in place whenever one such spill may occur.

In addition, for these same spills, the plant must identify the steps that will be taken to monitor the movement of pollutants resulting from these spills and their potential to cause an adverse effect (subsection 6(1), paragraph 2). Monitoring the movement of pollutants may include continuous or grab sampling, environmental modelling or a combination thereof.

5.3.1.3 Non-Reportable Spills (s. 6(1), paragraphs 3 & 4, s. 6(2))

Under subsection 6(1), paragraph 3 of the Regulation, the plant identifies those potential spills that are minor in nature and as a result pose little risk to human health or the environment. By identifying these spills, the circumstances under which they may occur and the quantity and quality of the spilled material, the plant may take advantage of the Class X exemption for Non-Reportable Spills under the “Classification and Exemption of Spills and Reporting of Discharges Regulation”, O. Reg. 675/98, as amended. In order for a spill to be classified as “non-reportable”, it must satisfy all of the following criteria (subsection 6(2):

1. The spill is to land or air. All spills that are likely to enter water (including groundwater) are considered “reportable”.
2. It is determined, based on experience or other information, that the spill (under the specified circumstances, quantity and

LINKAGES BETWEEN SPILL PREVENTION & CONTINGENCY PLAN REGULATION AND REPORTING OF DISCHARGES REGULATION (O. REG. 675/98)

- Any plant, municipality, or business may seek a Class X exemption under O. Reg. 675/98 for reporting specific spills, if the spill was identified in subsection 6(2) of the Regulation.
- Despite the provisions in the Regulation which classify a spill as “non-reportable”, a spill becomes reportable under O. Reg. 675/98 immediately upon any of the following occurring:
 - The quantity of the spill is more than what is specified in the plan as non-reportable
 - The spill was deliberate
 - The spill does causes adverse effects aside from those readily remediated through cleanup and restoration of paved, gravelled or sodded surfaces
 - Any remediation that is required is not undertaken immediately
 - The spill enters waters, as defined under the OWRA

quality) would not cause any adverse effects other than those that can be easily remediated by cleaning up pavement, soil, etc.

3. That the circumstances of the spill and the quantity and quality of the spilled material were referred to in the plans. For example, if a spill occurs that, although minor in nature, was not included in the plans as non-reportable, it must be reported to the Ministry. However, if the plans are updated to include this type of spill, it becomes non-reportable if it recurs. The Ministry must be able to confirm at any point in time which spills are non-reportable, and as such, records must be kept of any non-reportable spill for a minimum of 5 years, as per O. Reg. 675/98.

The plant must develop written procedures ensuring that notification is given in accordance to the requirements under O. Reg. 224/07.

5.3.2 CONTINGENCY PLANNING: SPILL RESPONSE

As part of spill response, the plant should have in place procedures that will help it respond appropriately to spills when they occur.

5.3.2.1 Response Procedures (s. 6(1), paragraphs 6 & 7)

The Regulation requires procedures to be developed ensuring that once a spill occurs:

1. Section 92 (duty to report a spill) and section 93 (duty to restore the natural environment after a spill) of the EPA are complied with.
2. The relevant persons at the plant (i.e., the response coordinator, spill response team, security, etc.) are notified of the spill.
3. The appropriate level of response is implemented, including deployment of a spill response team, if appropriate. The response coordinator is responsible for ensuring the appropriate implementation of the plans in response to the spill.
4. Members of the public who may be directly affected by the spill, particularly those who may be at a place identified in subsection 5(1), paragraph 4, are notified of the spill. Where appropriate, updated contact lists should be available where direct contact with individuals/businesses or community leaders is required. Notification may be conducted in a number of ways, including:
 - a. Radio/television broadcasts
 - b. Community alarms/warning systems
 - c. Contacting community leaders
 - d. Direct contact (i.e., phone calls, text messaging, etc.)

The method for notifying the public should be reflective of the seriousness of the spill and immediacy of the adverse effects. Where a serious incident dictates immediate contact with individuals a means of direct contact may be appropriate. Where the incident dictates immediate notification of the broad community, community alarms or radio/television broadcasts may be appropriate. In other circumstances, where immediate notification on an individual level is not required, contacting community leaders may be more appropriate.

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5. Any alarm system or notification system is operated appropriately. This may include internal plant alarms alerting plant operators or other plant personnel of a spill or emergency, or it may also include external alarms alerting the community in general of an incident.
 6. The appropriate material, equipment and personnel are available to monitor the movement of pollutants and their potential adverse effects for spills that have been previously identified as having a potential for adverse effects.
 7. The appropriate material, equipment and personnel are available to respond to the spill. Depending on the circumstances of the spill, this may include resources that are on-site or resources that are brought from off-site locations (i.e., as a result of mutual aid agreements between companies). However, use of off-site resources must not delay the response to the spill, particularly in regards to duties under section 93 of the EPA.
 8. The spill contingency plans must also detail the procedures for the classification and disposal of wastes generated as a result of the spill response (i.e. recovered materials, absorbent pads, contaminated soil, etc.). These procedures may include:
 - Location and method for the temporary storage of wastes, including maximum duration for storage prior to permanent disposal.
 - Options for permanent disposal of wastes, including identifying approved waste management contractors, waste disposal sites, etc.
 - Regulatory requirements for the management and disposal of wastes (i.e. O. Reg. 347 requirements).
 9. Finally, procedures should be developed that ensure that any records relating to spill response be retained at the plant for 5 years.

5.3.2.2 Restoring the Natural Environment

Under section 93 of the EPA, the owner and controller of a spilled pollutant that causes or is likely to cause an adverse effect has a forthwith duty to “do everything practicable to prevent, eliminate and ameliorate the adverse effect and to restore the natural environment”. The owner and controller, therefore, have an obligation to restore the natural environment to the conditions prior to the spill event. The spill contingency plans provide the documented procedures and actions that should be taken in order to satisfy the duty under section 93 for all spills.

In the case of spills identified as non-reportable, the section 93 EPA requirement to restore the natural environment remains in effect. For these spills, restoration will involve the ready cleanup of paved, gravelled or sodded surfaces (i.e. by deploying absorbent pads or excavating and replacing contaminated surface material). Impacts requiring restoration beyond what is readily remediated on paved, gravelled or sodded surfaces will trigger the requirement to report the spill under section 92 of the EPA. The spill contingency plans should detail the procedures and equipment required to remediate impacts from non-reportable spills, as well as identify the triggers that would require the reporting of a spill that was initially determined to be non-reportable.

5.4 PLAN REVIEW AND UPDATE

The Plans are continually evolving documents and should reflect the current operations at the plant so as to prevent and minimize the potential impacts of spills. As a result, the Regulation requires regular and comprehensive reviews of the Plans and plant operations in regards to spill prevention and mitigation.

5.4.1 REVIEW AND UPDATE AFTER A SPILL (S. 9)

After a spill event occurs and spill response is complete, the lessons learned provide invaluable insight into the steps taken regarding its prevention and the effectiveness of the response. As a result, after any spill that requires notification under section 92 of the EPA, the plant must review the Plans and determine if they were adequate in preventing and/or responding to the spill. In the case of prevention plans, if steps were not identified in subsection 5(1), paragraph 8 ii, or if steps were identified but have not yet been implemented, the plant must review its risk assessment to ensure it is adequate with respect to identifying steps for the prevention of spills.

If deficiencies are noted in the plans or their implementation (e.g. prevention plans did not address it as a significant spill, response equipment is not deployed according to the plans), then they must be updated accordingly. The review and update of the Plans should start within a week after a spill has been dealt with (i.e. after the immediacy of the response has passed) and completed in a reasonable timeframe in order to accurately capture and implement the knowledge and lessons learned from the incident.

5.4.2 ANNUAL REVIEW AND UPDATE (S. 10)

Independent of reviews resulting from a spill incident, the Plans must be reviewed and updated on an annual basis to ensure that they comply with the requirements of the Regulation. In regards to spill prevention, the review must include an evaluation of any changes to the risk profile of spills occurring at the plant and a determination of what actions should be taken to further reduce risk and prevent spills.

In addition, the effectiveness of the implementation of the contingency plans must also be tested on an annual basis. This requires the plant to conduct tests of its operations to determine if:

1. The plant's response satisfies the requirements under the contingency plans section of the regulation (section 6). For example, confirm that the plant has the specified resources, personnel and material to respond to the spill and that the internal and external notification and communication systems are functioning correctly.
2. The response would be adequate to prevent or minimize the adverse effects of a spill.

If any deficiencies are noted as a result of the testing above (i.e., the response to the spill is not effective in preventing or reducing adverse effects), the prevention plans and/or contingency plans must be updated. Some important aspects to note regarding the testing of plant operations include:

- The testing of operations at the plant may include table top exercises, computer simulations as well as live emergency drills. All of these activities should be structured such that participants are required to respond to a situation as if it were an actual spill by taking action, solving problems and making team decisions to respond to the spill as per the plans. The Ministry recommends referring to Annex K of the Canadian Standard CAN/CSA-Z731-03 (as updated from time to time), or

similar international standard on the subject, for a more detailed discussion on developing and conducting exercises.

- Since the testing of operations also provides a plant with the opportunity to train staff and better prepare for spills, a live exercise must be conducted at a minimum frequency of once every 2 years (subsection 10(1), paragraph 5).
- It may not be feasible to test all of the operations of the plant on an annual basis. As a result, at least a portion of the plant operations must be tested annually (i.e., process unit, building, etc.) to confirm compliance with the plans. Cumulatively, over a 5 year period, all of the plant operations must be tested (subsection 10(1), paragraph 4).

5.4.3 STATEMENT OF ACCURACY AND EFFECTIVENESS (S. 10, PARAGRAPH 7)

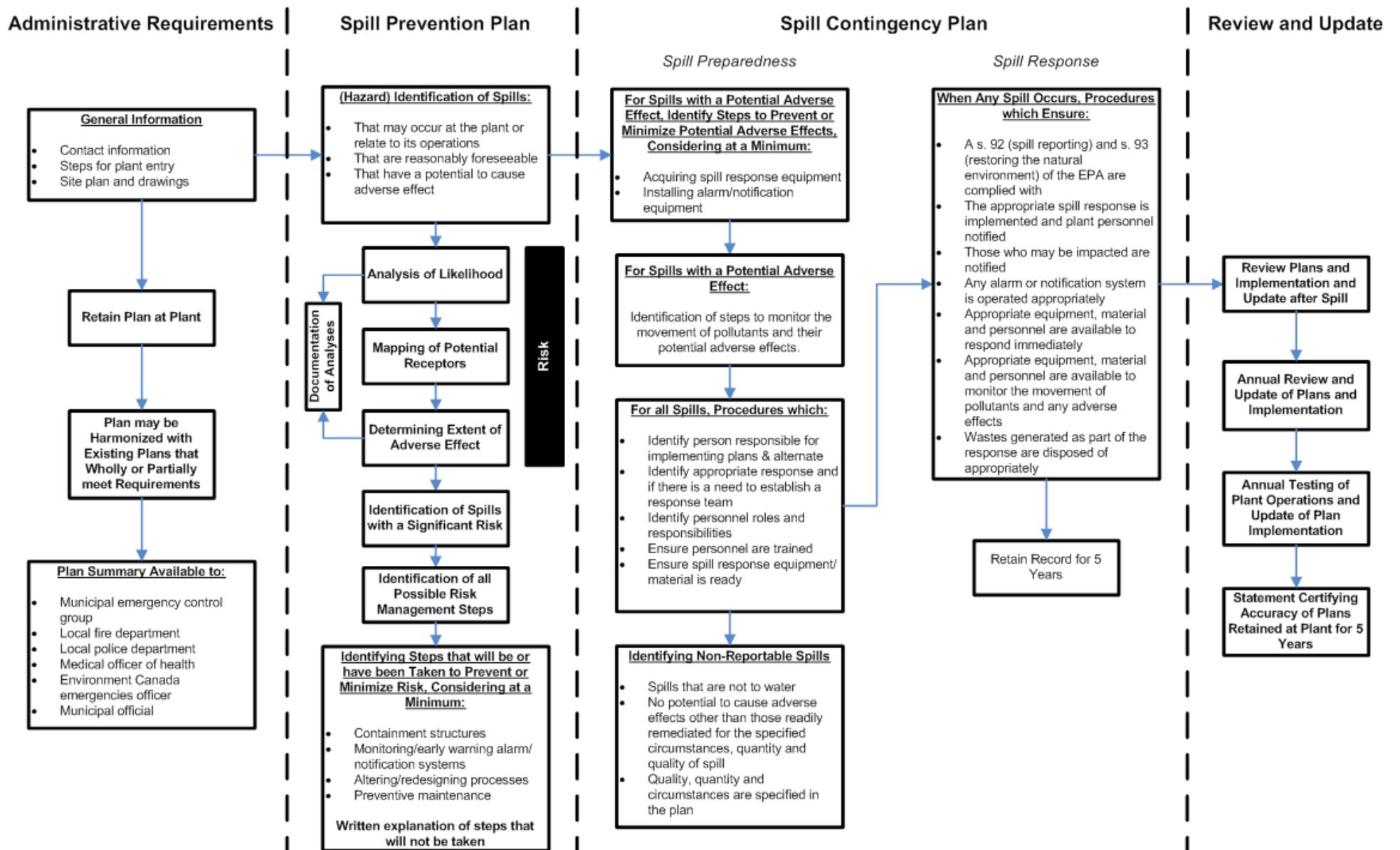
On January 1 of every year after 2008, an officer or director of the corporation must sign a written statement regarding the accuracy and effectiveness of both the Plans. The statement must include:

1. The dates that the annual review, testing and update were performed.
2. Statement that the plans were accurate, were effective in preventing or reducing the risk of spills at the plant, and were effective at preventing or minimizing any adverse effects that may result from a spill at the plant, should one occur.

The above statement must be retained at the plant for a minimum of 5 years.

APPENDIX A – SPILL PREVENTION AND CONTINGENCY PLANS COMPONENTS

Components of the Spill Prevention and Contingency Plans Regulation



**APPENDIX B – SAMPLE SPILL PREVENTION AND CONTINGENCY PLANS TABLE OF
CONTENTS**

The following is a generic table of contents for the Plans required by the Regulation. Please refer directly to the Regulation and relevant parts of this Guideline for details on what the regulatory requirement is for a particular section in the plans.

Plan Section	Description	Regulatory Requirement
1.0 Administration		
1.1 Revision Date	The date of the latest revision of the plans.	s. 9(2) & 10(1) 1
1.2 Statement of Accuracy and Effectiveness	Statement by officer or director of the corporation that the plans are accurate and effective.	s. 10(1)7
1.3 Purpose of the Plan	High-level description of the intent and scope of the plans	Optional
1.4 Plan Review and Maintenance	Procedure for review of the plans annually and after a spill, including who will perform the review and update. This may also include procedures for version control.	ss. 9 & 10
1.5 Plan Distribution	Listing of those persons or organizations that have copies of the plans, so that updates may be provided	Optional
1.6 Plan Harmonization	If the plans are harmonized with existing plans, a listing of the cross references between these plans and other plans.	Optional
1.7 Testing of Plans and Operations	Frequency and types of testing and drills that will be performed to determine the effectiveness of the plans in preventing and responding to spills. If the testing of operations is multi-year, an indication of which portions of the operations will be tested on a yearly basis.	s. 10(1)3, 4 & 5
2.0 General Information		
2.1 Plan Scope	Identification of the plant for which the plans are applicable	s. 4
2.2 Contact Information	Listing of contact information, including the person(s) responsible for coordinating the spill response, spill responders, security, etc.	s. 4
2.3 Plant Access	Description of the general entry requirements to the plant	s. 4

Plan Section	Description	Regulatory Requirement
2.4 Site Drawings	Scale drawing(s) of the plant showing features relevant to spill prevention and response	s. 4
3.0 Spill Prevention Plan		
3.1 Hazard Identification	Identification of all the spill hazards that may occur at the plant, are reasonably foreseeable and have the potential to cause an adverse effect.	s. 5(1) 1
3.2 Map of Receptors	Identification of places that may be affected by spills	s. 5(1) 4
3.3 Likelihood and Consequence Analysis	For each spill identified in Part 3.1, a statement on the likelihood of its occurrence, and the extent of adverse effect on the places mapped in Part 3.2.	s. 5(1) 2 & 5(1) 5
3.4 Risk Analysis and Priority Ranking	Identification of spills that pose a “significant” risk.	s. 5(1) 7
3.5 Risk Management	Identification of steps to be implemented in order to manage the risk of spills occurring from spills that pose a “significant” risk.	s. 5(1) 8 & 5(2)
3.6 Training	Procedures to ensure personnel are trained in the operation, monitoring and maintenance of any preventive measure to be taken	s. 5(1) 9 ii
4.0 Spill Contingency Plan		
4.1 Adverse Effect Spills	This Part should detail the procedures for the prevention, elimination or amelioration of adverse effects from the spills identified in the prevention plans as having an adverse effect.	s. 6(1) 1
4.2 Incident Evaluation and Level of Response	For each type of spill incident, this Part should detail procedures to evaluate the incident (i.e., material spilled, location, extent, adverse effects, etc.) and the appropriate level of response, including whether or not to mobilize a spill response team.	s. 6(1) 5 ii

Plan Section	Description	Regulatory Requirement
4.3 Mobilization and Response	<p>This Part should detail the procedures for mobilizing personnel and resources to respond to the spill based on the evaluation performed in the previous part. This may include mobilization of a centralized spill response team.</p> <p>This Part should also identify the procedures to be taken to mitigate the spill, including deployment of personnel and equipment to stop the spill (if on-going), contain the spilled material and recover spilled material before it migrates.</p>	s. 6(1) 5 iii & 6 iii
4.4 Pollutant and Adverse Effect Monitoring	This Part should identify the procedures, equipment, personnel and material required to monitor the movement of pollutants and their potential adverse effects from spills that have a potential to cause an adverse effect.	s. 6(1) 2
4.5 Roles and Responsibilities	This Part should identify the roles and responsibilities of personnel responding to a spill, including identification of the person responsible for coordinating the spill response.	s. 6(1) 5 iv
4.6 Resources and Equipment	This Part should identify the resources and equipment (both on-site and off-site) that are available for the spill response.	s. 6(1) 6 vi & vii
4.7 Training	This Part should identify the necessary training requirements for all personnel involved in spill response. This should include training on procedures as well as on the use of equipment and material.	s. 6(1) 5 v
4.8 Maintenance	This Part should identify the required maintenance for spill response equipment and material to ensure that it is in a state of readiness.	s. 6(1) 5 vi

Plan Section	Description	Regulatory Requirement
4.9 Notifications and Alarms	This Part should identify the persons (both internal to the plant and external) that should be notified. This Part should also detail the procedures for activating any alarms or other notification systems as part of a spill response.	s. 6(1) 6 i, ii, iv & v
4.10 Clean-up and Restoration	This Part should identify the procedures and actions to be taken in order to restore the natural environment to its pre-spill conditions.	s. 6(1) 6 i
4.11 Waste Disposal	This Part should detail the procedures for the appropriate disposal of wastes generated as a part of the spill response.	s. 6(1) 6 viii
4.12 Non-Reportable Spills	Identification of spills, and the circumstances under which they occur, that are considered to be non-reportable.	ss. 6(1) 3, 4 & 6(2)
5.0 Appendix A	Methodology to determine the likelihood of spills.	s. 5(1) 3
6.0 Appendix B	Methodology to determine the likelihood and extent of adverse effects.	s. 5(1) 6
7.0 Appendix C	Rationale for not conducting steps identified under s. 5(1) 8i.	s. 5(1) 8iii

APPENDIX C – SELECT DEFINITIONS OF PLACES TO BE MAPPED

Below are detailed definitions of some of the places that must be identified as per subsection 5(1), paragraph 4 of the Regulation.

- Vulnerable area:** Means a significant groundwater recharge area, a highly vulnerable aquifer, a surface water intake protection zone, or a wellhead protection area (s. 2(1) of the *Clean Water Act*).
- Sensitive:** In regard to surface water features and ground water features, means areas that are particularly susceptible to impacts from activities or events including, but not limited to, water withdrawals, and additions of pollutants (Provincial Policy Statement, 2005 made under s. 3 of the *Planning Act*).
- Ground water feature:** Refers to water-related features in the earth's subsurface, including recharge/discharge areas, water tables, aquifers and unsaturated zones that can be defined by surface and subsurface hydrogeologic investigations (Provincial Policy Statement, 2005 made under s. 3 of the *Planning Act*).
- Surface water feature:** Refers to water-related features on the earth's surface, including headwaters, rivers, stream channels, inland lakes, seepage areas, recharge/discharge areas, springs, wetlands, and associated riparian lands that can be defined by their soil moisture, soil type, vegetation or topographic characteristics (Provincial Policy Statement, 2005 made under s. 3 of the *Planning Act*).
- Well:** Means a hole made in the ground to locate or to obtain ground water or to test or to obtain information in respect of ground water or an aquifer, and includes a spring around or in which works are made or equipment is installed for collection or transmission of water and that is or is likely to be used as a source of water for human consumption (s. 35(1) of the OWRA).
- Flood plain:** For river stream, and small inland lake systems, means the area, usually low lands adjoining a watercourse, which has been or may be subject to flooding hazards (Provincial Policy Statement, 2005 made under s. 3 of the *Planning Act*).
- Fish habitat:** Means spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes (s. 34(1) of the *Fisheries Act*).
- Wildlife habitat:** Means areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species (Provincial Policy Statement, 2005 made under s. 3 of the *Planning Act*).