

PART 8B

AP – AQUIFER PROTECTION OVERLAY ZONE

8B.1 INTENT

The Aquifer Protection Overlay zone is intended to protect:

- (a) the Regina aquifer system from contamination from development activities; and
- (b) ground water resources from contamination in accordance with the Official Community Plan.

8B.2 APPLICATION

- (1) The standards and regulations in this Subpart shall apply to those portions of the Regina Aquifer system lying within the City of Regina and shown on Figure 8B.F.1.
- (2) The overlay zone shall be in addition to and shall overlay all other zones where it is applied so that any parcel of land lying in the overlay zone shall also lie in one or more of the other zones provided for by this Bylaw. The effect is to create a new zone, which has the characteristics and limitations of the underlying zones, together with the characteristics and limitations of the overlay zone.
- (3) Unless specifically exempted, the regulations, standards and criteria of the overlay zone shall also supplement and be applied in addition but not in lieu of any regulations, standards and criteria applicable to the underlying zone.
- (4) In the event of conflict between the requirements of the overlay zone and those of the underlying zone, the overlay zone requirements shall apply, unless specifically exempted.
- (5) In the event of conflict between the requirements of this overlay zones and another overlay zone, the overlay zone with the most stringent requirements shall apply, unless specifically exempted.

8B.3 LAND USE REQUIREMENTS FOR THE AQUIFER PROTECTION OVERLAY ZONE

3.1 PERMITTED LAND USES

Subject to section 8B.4, all permitted uses in the underlying zone are also permitted in this zone.

3.2 DISCRETIONARY LAND USES

Subject to section 8B.4, all discretionary uses in the underlying zone are also discretionary in this zone.

3.3 PROHIBITED LAND USES

Subject to section 8B.4, all prohibited uses in the underlying zone are also prohibited in this zone.

8B.4 DEVELOPMENT STANDARDS FOR THE AQUIFER PROTECTION OVERLAY ZONE

4.1 ALL DEVELOPMENT

The development standards of the applicable underlying zone shall apply to all development in the Aquifer Protection Overlay zone.

8B.5 ADDITIONAL DEVELOPMENT REGULATIONS

5.1 PERFORMANCE REGULATIONS

- (1) The City shall regulate a development in the Aquifer Protection Overlay zone based on the applicable Aquifer Sensitivity zone of the proposed site, as defined in Chapter 2. The Aquifer Sensitivity zones are:
 - (a) Aquifer Protection zone, High Sensitivity
 - (b) Aquifer Protection zone, Moderate Sensitivity
 - (c) Aquifer Protection zone, Low Sensitivity
- (2) In addition to regulations provided elsewhere in this Bylaw, all uses in the Aquifer Protection Overlay zone shall be developed in accordance with the standards specified in Table 8B.T1, Table 8B.T2 and Tables 8B.T3.

Developments may be prohibited or approved in accordance with such Tables notwithstanding any contrary provision applicable to the underlying zone.

- (3) The performance standards shall be completed to the satisfaction of the Development Officer.

5.2 CHALLENGE TO AQUIFER SENSITIVITY ZONE DESIGNATION

- (1) An applicant for a proposed development in any of the Aquifer Sensitivity zones shown in Figure 8B.F1 may challenge the inclusion of the land in a particular Aquifer Sensitivity zone by providing the City with an engineering evaluation prepared by a registered professional engineer licensed to practice in Saskatchewan.
- (2) The engineering evaluation mentioned in subsection 8B.5.2(1) shall demonstrate the aquifer sensitivity characteristics of the area in which the proposed site is located.
- (3) If the City agrees with the findings of the evaluation mentioned in subsection 8B.5.2(1), the development will be placed in the applicable Aquifer Sensitivity zone and the requirements of that Sensitivity zone, shall apply to the land.
- (4) Subsection 8B.5.2(3) shall not exempt the applicant from complying with any of the requirements of any other Aquifer Sensitivity zone on which the engineering evaluation confirms that the land is situated.

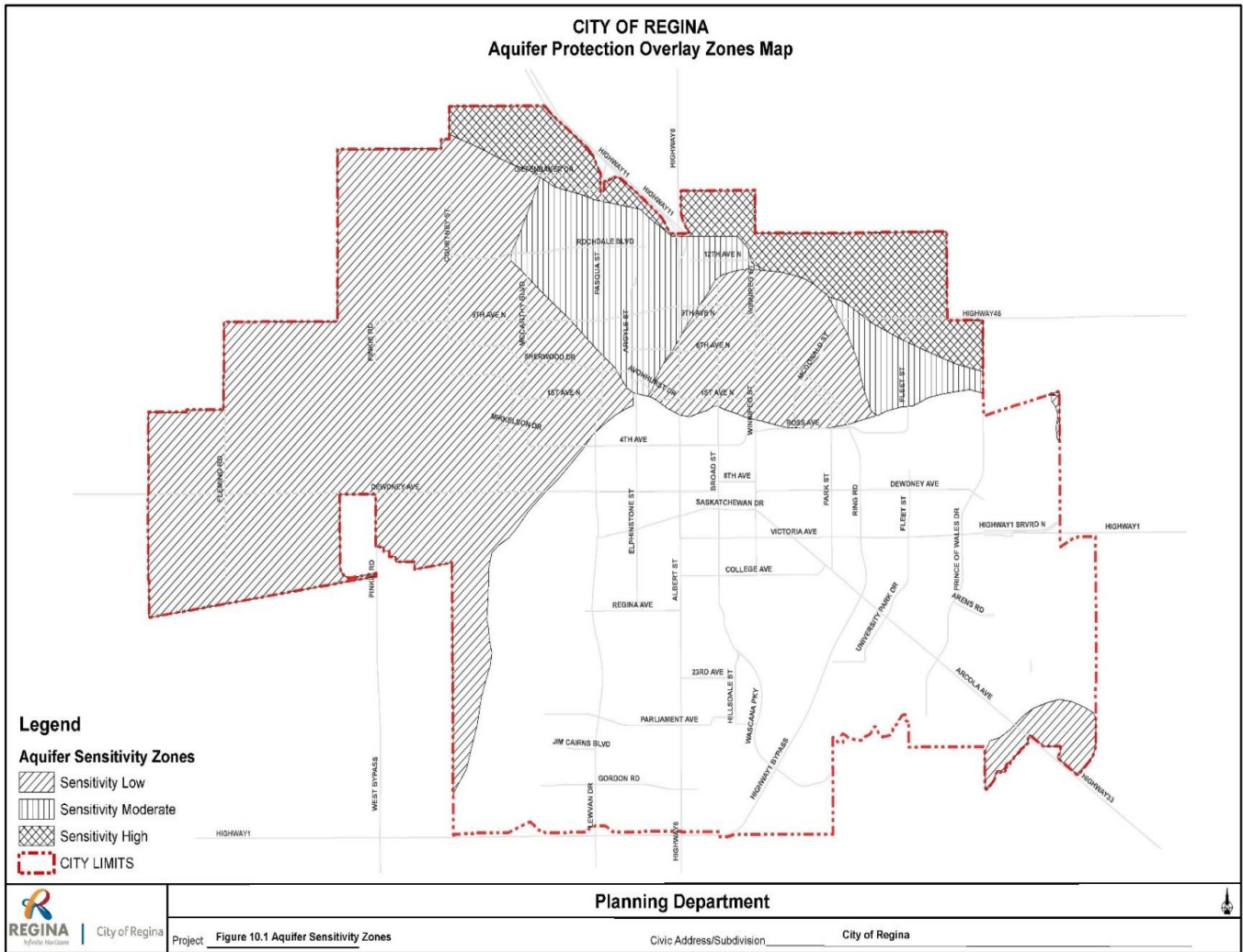


Figure 8B.F1: Aquifer Protection Overlay Zones

TABLE 8B.T1: PERFORMANCE REGULATIONS FOR HIGH SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	TYPE OF DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T1.1	All dryland land uses in the Agriculture Land Use Class.	<p>(1) Use must minimize the application of salt, manure, herbicides, insecticides, fungicides and fertilizers.</p> <p>(2) All new storage tanks and all storage tank replacements <u>shall be above ground</u>, shall have secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system.</p>	
T1.2	<ul style="list-style-type: none"> • All land uses in the Industry Land Use Class; and • All land uses in any Land Use Class that involves, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials, hazardous waste or waste dangerous goods. 	New developments prohibited	<p>(1) The following shall apply to all existing land uses in section T1.2 of this Table:</p> <p>(a) Existing developments shall be limited to modification and replacement only;</p> <p>(b) All new storage tanks and all storage tank replacements shall be above ground, shall have a secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system;</p> <p>(c) Excavations shall not exceed three metres in depth, including excavation for the purpose of accommodating water/sewer/storm services. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially;</p> <p>(d) Industrial onsite runoff containment ponds shall be constructed to minimize any seepage into any underlying aquifers;</p> <p>(e) All holes created by the removal of piles, foundations, drilling, or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers; and</p> <p>(f) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p>

TABLE 8B.T1: PERFORMANCE REGULATIONS FOR HIGH SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	TYPE OF DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T1.2	<ul style="list-style-type: none"> • All land uses in the Industry Land Use Class; and • All land uses in any Land Use Class that involves, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials, hazardous waste or waste dangerous goods. 		<p>(2) In addition to the requirements in subsection (1), the following shall apply to all land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in Chapter 2:</p> <p>(a) All existing storage tanks shall have leak detection and/or a monthly statistical reconciliation analysis system; and</p> <p>(b) All facilities shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction.</p> <p>(3) In addition to the requirements in subsection (1) and (2), the following shall apply to all land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>:</p> <p>(a) The site shall be prepared with a minimum of one metre of unfractured low permeability soil or the equivalent thereof (1×10^{-7} cm/sec when subjected to a head of 0.305 metres of water); and</p> <p>(b) The site shall be located where the continuous thickness of native material having suitable permeability (minimum average 1×10^{-6} cm/sec when subjected to a head of 0.305 metres of water) is ten metres or greater, or the equivalent.</p>
T1.3	Compressed gas pipelines	<p>(1) New rights-of-way for new pipelines are permitted.</p> <p>(2) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p>	<p>(1) For new pipelines within existing rights-of-way, the following regulations apply:</p> <p>(a) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p>

TABLE 8B.T1: PERFORMANCE REGULATIONS FOR HIGH SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	TYPE OF DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T1.4	Liquid petroleum and oil pipelines.	New rights-of-way for new pipelines are prohibited.	<p>(1) For new pipelines within existing rights-of-way, the following regulations apply:</p> <p>(a) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially;</p> <p>(b) All development applications shall be accompanied by plans to detect contamination of the aquifer; and</p> <p>(c) All facilities handling and/or storing hazardous materials of any type shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction.</p>
T1.5	Petroleum storage terminals.	New petroleum storage terminals are prohibited.	<p>(1) Existing developments shall be limited to modification and replacement only.</p> <p>(2) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p> <p>(3) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p> <p>(4) All new storage tanks and all storage tank replacements shall be above ground, shall have a secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system.</p> <p>(5) All existing storage tanks shall have leak detection and/or a monthly statistical reconciliation analysis system.</p>

TABLE 8B.T1: PERFORMANCE REGULATIONS FOR HIGH SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	TYPE OF DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
			(6) All holes created by the removal of piles, foundations, drilling, or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.
T1.6	All land uses in the Dwelling Land Use Class.	<p>(1) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p> <p>(2) Minimize the application of salt, manure, herbicides, insecticides, fungicides and fertilizers.</p> <p>(3) Only holding tanks shall be allowed in the development of private sewage facilities.</p> <p>(4) All major development applications (over 4 hectares) shall be accompanied with plans to detect contamination of the aquifer.</p>	
T1.7	All land uses in the Open Space Land Use Class.	<p>(1) Minimize the application of salt, manure, herbicides, insecticides, fungicides and fertilizers.</p> <p>(2) All new storage tanks and all storage tank replacements <u>shall be above ground</u>, shall have a secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system.</p> <p>(3) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p>	
T1.8	Industrial site storm ponds	<p>(1) Impervious liners/equivalent shall be used in all containment devices.</p> <p>(2) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p>	
T1.9	Waste containment pools	New developments prohibited unless technically necessary.	<p>(1) Impervious liners/equivalent shall be used in all containment devices.</p> <p>(2) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p>
T1.10	Wastewater sewers	All new wastewater sewers shall be constructed to force main standards.	
T1.11	Pilings	All pilings shall not exceed three metres in depth except where a geo-technical report acceptable to the City demonstrates the need and details the necessary mitigative measures to protect the aquifer.	All pilings shall not exceed three metres in depth except where a geo-technical report acceptable to the City demonstrates the need and details the necessary mitigative measures to protect the aquifer.

TABLE 8B.T1: PERFORMANCE REGULATIONS FOR HIGH SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	TYPE OF DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T1.12	All developments, except those in T1.1 to T1.11 of this table.	<p>(1) All new storage tanks and all storage tank replacements shall be above ground, shall have a secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system.</p> <p>(2) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p> <p>(3) All holes created by the removal of piles, foundations, drilling, or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.</p>	<p>(1) All new storage tanks and all storage tank replacements shall be above ground, shall have a secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system.</p> <p>(2) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p> <p>(3) All holes created by the removal of piles, foundations, drilling, or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.</p>

TABLE 8B.T2: PERFORMANCE REGULATIONS FOR MODERATE SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T2.1	All dryland land uses in the Agriculture Land Use Class.	<p>(1) Minimize the application of salt, manure, herbicides, insecticides, fungicides and fertilizers.</p> <p>(2) All new underground storage tanks and all storage tank replacements, <u>at a minimum</u>, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, a monthly statistical inventory reconciliation analysis and a daily inventory reconciliation.</p>	
T2.2	<ul style="list-style-type: none"> • All land uses in the Industry Land Use Class; and • All land uses in any Land Use Class that involves, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials, hazardous waste or waste dangerous goods. 	<p>(1) The following shall apply to all new land uses in section T2.2 of this Table, except those involving, as a principal operation, the storing, warehousing, processing or manufacturing of hazardous materials, hazardous waste or waste dangerous goods as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>:</p> <p>(a) All new underground storage tanks and all storage tank replacements, <u>at a minimum</u>, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, and a monthly statistical inventory reconciliation analysis;</p> <p>(b) All above ground storage tanks shall have secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system;</p> <p>(c) Excavations shall not exceed 4.5 metres in depth, except in that portion of the zone lying in the S ½ 7-18-19-2 where excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially;</p> <p>(d) Industrial onsite runoff containment ponds shall be</p>	<p>(1) The following shall apply to all existing land uses in section T2.2 of this Table:</p> <p>(a) All new underground storage tanks and all storage tank replacements, at a minimum, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, and a monthly statistical inventory reconciliation analysis;</p> <p>(b) All above ground storage tanks shall have secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system;</p> <p>(c) Excavations shall not exceed 4.5 metres in depth, except in that portion of the zone lying in the S ½ 7-18-19-2 where excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially;</p> <p>(d) Industrial onsite runoff containment ponds shall be constructed to minimize any seepage into any underlying aquifers; and</p> <p>(e) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.</p>

TABLE 8B.T2: PERFORMANCE REGULATIONS FOR MODERATE SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T2.2		<p>constructed to minimize any seepage into any underlying aquifers; and</p> <p>(e) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.</p> <p>(2) In addition to the requirements in subsection (1), the following shall apply to all new land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in Chapter 2:</p> <p>(a) Pursuant to 1(b), each tank shall have an over-fill or spill prevention system;</p> <p>(b) Liquid hazardous material storage facilities are prohibited;</p> <p>(c) All development applications shall be accompanied by plans to detect contamination of the aquifer; and</p> <p>(d) All facilities shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction.</p> <p>(3) All new development that involves, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials, hazardous waste or waste dangerous goods as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i> are prohibited.</p>	<p>(2) In addition to the requirements in subsection (1), the following shall apply to all existing land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in Chapter 2:</p> <p>(a) Pursuant to 4(b), each tank shall have an over-fill or spill prevention system;</p> <p>(b) Expansion of liquid hazardous material storage facilities is prohibited except for petroleum storage subject to applicable performance standards for petroleum storage and terminals in the Moderate Sensitivity Aquifer Protection Overlay zone;</p> <p>(c) All existing underground storage tanks shall have leak detection and/or a monthly statistical inventory reconciliation system;</p> <p>(d) All development applications shall be accompanied by plans to detect contamination of the aquifer; and</p> <p>(e) All facilities shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction.</p> <p>(3) In addition to the requirements in subsection (1) and (2), the following shall apply to all existing land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>:</p> <p>(a) Notwithstanding 5(b), expansion of liquid hazardous material facilities is prohibited;</p> <p>(b) All existing underground storage tanks shall have leak detection and/or a monthly statistical inventory reconciliation analysis system;</p>

TABLE 8B.T2: PERFORMANCE REGULATIONS FOR MODERATE SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T2.2			<p>(c) The site shall be prepared with a minimum of one metre of unfractured low permeability soil or the equivalent thereof (1×10^{-7} cm/sec when subjected to a head of 0.305 metres of water); and</p> <p>(d) The site shall be located where the continuous thickness of native material having suitable permeability (minimum average 1×10^{-6} cm/sec when subjected to a head of 0.305 metres of water) is ten (10) metres or greater, or the equivalent.</p>
T2.3	Compressed gas pipelines	<p>(1) New rights-of-way for new pipelines are permitted.</p> <p>(2) Excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p>	<p>(1) For new pipelines within existing rights-of-way, the excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p>
T2.4	Liquid petroleum and oil pipelines	<p>(1) Excavations shall not exceed 4.5 metres in depth, except in that portion of the zone lying in the S ½ 7-18-19-2 where excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p> <p>(2) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p> <p>(3) All facilities handling and/or storing hazardous materials of any type shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction.</p>	
T2.5	All land uses in the Dwelling Land Use Class.	<p>(1) Excavations shall not exceed 4.5 metres in depth, except in that portion of the zone lying in the S ½ 7-18-19-2 where excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p> <p>(2) Only holding tanks shall be allowed in the development of private sewage facilities.</p>	
T2.6	All land uses in the Open Space Land Use Class.	Minimize the application of salt, manure, herbicides, insecticides, fungicides and fertilizers.	
T2.7	Industrial site storm ponds	Compacted clay liners, or an equivalent, shall be used for all containment devices.	
T2.8	Waste containment ponds	<p>(1) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p> <p>(2) Impervious liners/equivalent shall be used for all waste containment.</p>	

TABLE 8B.T2: PERFORMANCE REGULATIONS FOR MODERATE SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T2.9	Petroleum storage terminals and petroleum storage.	<p>(1) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p> <p>(2) All new storage tanks and all storage tank replacements <u>shall be above ground</u>, shall have secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system.</p> <p>(3) All existing storage tanks shall have leak detection and/or a monthly statistical inventory reconciliation analysis system.</p> <p>(4) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.</p> <p>(5) Excavations shall not exceed 4.5 metres in depth, except in that portion of the zone lying in the S ½ 7-18-19-2 where excavations shall not exceed three metres in depth. Where the overburden is less than 3 metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p> <p>(6) All facilities handling and/or storing hazardous materials of any type shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction.</p>	
T2.10	All developments other than those in T2.1 to T2.9 of this Table.	<p>(1) All new underground storage tanks and all storage tank replacements, <u>at a minimum</u>, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, and a monthly statistical inventory reconciliation analysis.</p> <p>(2) All above ground storage tanks shall have secondary containment with dykes, impervious liners, leak detection and/or a monthly statistical inventory reconciliation analysis system.</p> <p>(3) Excavations shall not exceed 4.5 metres in depth, except in that portion of the zone lying in the S ½ 7-1-19-2 where excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p>	<p>(1) All new underground storage tanks and all storage tank replacements, <u>at a minimum</u>, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, and a monthly statistical inventory reconciliation analysis.</p> <p>(2) All above ground storage tanks shall have secondary containment with dykes, impervious liners, leak detection and/or a monthly statistical inventory reconciliation analysis system.</p> <p>(3) All existing underground storage tanks shall have leak detection and/or a monthly statistical inventory reconciliation analysis system.</p>

TABLE 8B.T2: PERFORMANCE REGULATIONS FOR MODERATE SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE			
Sec.	DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T2.10		(4) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.	(4) Excavations shall not exceed 4.5 metres in depth, except in that portion of the zone lying in the S ½ 7-1-19-2 where excavations shall not exceed three metres in depth. Where the overburden is less than three metres, the excavations shall not expose the aquifer or reduce the overburden substantially. (5) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.

TABLE 8B.T3: PERFORMANCE REGULATIONS FOR LOW SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
T3.1	<ul style="list-style-type: none"> • All land uses in the Industry Land Use Class excepting those involving Industry, Salvaging Light, Industry, Salvaging Heavy and those involving, as a principal operation, the storing, warehousing, processing or manufacturing of hazardous materials, hazardous waste or waste dangerous goods as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>; and • All land uses in any Land Use Class that involves, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials, hazardous waste or waste dangerous goods as defined in Chapter 2. 	<p>(1) The following shall apply to all new land uses in section T3.1 of this Table:</p> <ul style="list-style-type: none"> (a) All new underground storage tanks and all storage tank replacements, at a <u>minimum</u>, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, and a monthly statistical inventory reconciliation analysis. (b) All above ground storage tanks shall have secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. (c) Excavations shall not exceed six metres in depth. Where the overburden is less than six metres, the excavations shall not expose the aquifer or reduce the overburden substantially. (d) Industrial onsite runoff containment ponds shall be constructed to minimize any seepage into any underlying aquifers. (e) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers. <p>(2) In addition to the requirements in subsection (1), the following shall apply to all new land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in Chapter 2:</p> <ul style="list-style-type: none"> (a) All development applications shall be accompanied by plans to detect contamination of the aquifer. (b) All facilities shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction 	<p>(1) The following shall apply to all existing land uses in section T3.1 of this Table:</p> <ul style="list-style-type: none"> (a) All new underground storage tanks and all storage tank replacements, at a <u>minimum</u>, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, and a monthly statistical inventory reconciliation analysis. (b) All above ground storage tanks shall have secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. (c) All existing underground storage tanks shall have leak detection and/or a monthly statistical inventory reconciliation analysis system. (d) Excavations shall not exceed six metres in depth. Where the overburden is less than six metres, the excavations shall not expose the aquifer or reduce the overburden substantially. (e) Industrial onsite runoff containment ponds shall be constructed to minimize any seepage into any underlying aquifers. (f) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers. <p>(2) In addition to the requirements in subsection (1), the following shall apply to all new land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in Chapter 2:</p>

TABLE 8B.T3: PERFORMANCE REGULATIONS FOR LOW SENSITIVITY AQUIFER PROTECTION OVERLAY ZONE

Sec.	DEVELOPMENT	PERFORMANCE REGULATIONS FOR NEW DEVELOPMENTS	PERFORMANCE REGULATIONS FOR MODIFICATIONS TO EXISTING DEVELOPMENTS
			<p>(a) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p> <p>(b) All facilities shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction.</p>
T3.2	<ul style="list-style-type: none"> • All land uses in the Industry Land Use Class or any other Land Use Class that involves, as a principal operation, storing, warehousing or processing of hazardous waste/ waste dangerous goods as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>; • Industry, Salvaging Light; and • Industry, Salvaging Heavy. 	<p>(1) The following shall apply to all new land uses in section T3.2 of this Table:</p> <p>(a) All proposed developments shall prepare a detailed environmental impact report(s) with appropriate mitigative measures. All mitigative measures shall be subject to the approval of the City and any federal and provincial agencies having jurisdiction;</p> <p>(b) All development applications shall be accompanied by plans to detect contamination of the aquifer;</p> <p>(c) All new storage tanks and all storage tank replacements <u>shall be above ground</u>, shall have secondary containment with dykes, impervious liners/equivalent, leak detection and/or monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system;</p> <p>(d) Excavations shall not exceed six metres in depth. Where the overburden is less than six metres, the excavations shall not expose the aquifer or reduce the overburden substantially;</p> <p>(e) All facilities handling and/or storing hazardous materials of any type shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction; and</p> <p>(f) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers.</p>	<p>(1) The following shall apply to all new land uses in section T3.2 of this Table:</p> <p>(a) All new storage tanks and all storage tank replacements <u>shall be above ground</u>, shall have a secondary containment with dykes, impervious liners/equivalent, leak detection and/or a monthly statistical inventory reconciliation analysis system. In addition, each tank shall have an over-fill or spill prevention system;</p> <p>(b) All development applications shall be accompanied by plans to detect contamination of the aquifer;</p> <p>(c) Excavations shall not exceed six metres in depth. Where the overburden is less than six metres, the excavations shall not expose the aquifer or reduce the overburden substantially;</p> <p>(d) All holes created by the removal of piles, foundations, drilling or any other similar activity shall be properly sealed in a manner that minimizes seepage into any underlying aquifers;</p> <p>(e) All facilities handling and/or storing hazardous materials of any type shall provide annual soil test reports and/or other early contamination detection measure reports to the City, and federal and provincial agencies having jurisdiction; and</p> <p>(f) All existing underground storage tanks shall have leak detection and/or a monthly statistical inventory reconciliation analysis system.</p>

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T3.2	<ul style="list-style-type: none"> • All land uses in the Industry Land Use Class or any other Land Use Class that involves, as a principal operation, storing, warehousing or processing of hazardous waste/ waste dangerous goods as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>; • Industry, Salvaging Light; and • Industry, Salvaging Heavy. 	<p>(2) In addition to the requirements in subsection (1), the following shall apply to all new land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>:</p> <p>(a) Industrial onsite runoff containment ponds shall be constructed to minimize any seepage into any underlying aquifers;</p> <p>(b) The site shall be prepared with a minimum of one metre of unfractured low permeability soil or the equivalent thereof (1×10^{-7} cm/sec when subjected to a head of 0.305 metres of water); and</p> <p>(c) The site shall be located where the continuous thickness of native material having suitable permeability (minimum average 1×10^{-6} cm/sec when subjected to a head of 0.305 metres of water) is 10 metres or greater, or the equivalent.</p> <p>(3) In addition to the requirements in subsection (1), the following shall apply to all new Industry, Salvaging Light and Industry, Salvaging Heavy:</p> <p>(a) The surface runoff management scheme shall incorporate holding tanks, settling ponds or similar retention areas, or equivalent, on site and shall be designed to remove particulate and contaminant levels to meet standards specified by the City for discharge into a storm sewer, storm channel or creek;</p> <p>(b) Site runoff contaminant ponds shall be designed and constructed to minimize seepage into any underlying aquifers; and</p> <p>(c) For all facilities handling and/or storing hazardous materials of any type, the operators shall provide annual soil test reports and/or other early contamination measure reports to the City, as well as to federal and provincial agencies having jurisdiction.</p>	<p>(2) In addition to the requirements in subsection (1), the following shall apply to all new land uses involving, as a principal operation, storing, warehousing, processing or manufacturing of hazardous materials as defined as defined in <i>The Hazardous Substances and Waste Dangerous Goods Regulations</i>:</p> <p>(a) Industrial onsite runoff containment ponds shall be constructed to minimize any seepage into any underlying aquifers;</p> <p>(b) The site shall be prepared with a minimum of one metre of unfractured low permeability soil or the equivalent thereof (1×10^{-7} cm/sec when subjected to a head of 0.305 metres of water); and</p> <p>(c) The site shall be located where the continuous thickness of native material having suitable permeability (minimum average 1×10^{-6} cm/sec when subjected to a head of 0.305 metres of water) is 10 metres or greater, or the equivalent.</p> <p>(3) In addition to the requirements in subsection (1), the following shall apply to all new Industry, Salvaging Light and Industry, Salvaging Heavy:</p> <p>(a) The surface runoff management scheme shall incorporate holding tanks, settling ponds or similar retention areas, or equivalent, on site and shall be designed to remove particulate and contaminant levels to meet standards specified by the City for discharge into a storm sewer, storm channel or creek; and</p> <p>(b) Site runoff contaminant ponds shall be designed and constructed to minimize seepage into any underlying aquifers;</p>

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			<p>(c) The site shall be located where the continuous thickness of native material having suitable permeability (minimum average is 1×10^{-6} cm/sec when subjected to a head of 0.305 metres of water) is 6 metres or greater, or the equivalent; and</p> <p>(d) All new wastewater sewers, other than those exclusively for domestic wastewater, shall be constructed to force main standards.</p>
T3.3	All land uses in the Dwelling Land Use Class.	Excavations shall not exceed six metres in depth. Where the overburden is less than six metres, the excavations shall not expose the aquifer or reduce the overburden substantially.	
T3.4	Industrial site storm ponds	Clay liners shall be used in all containment ponds.	
T3.5	Waste containment ponds	<p>(1) Impervious liners shall be used for all waste containment.</p> <p>(2) All development applications shall be accompanied by plans to detect contamination of the aquifer.</p>	
T3.6	All land uses other than those in T3.1 to T3.5 of this table.	<p>(1) All new underground storage tanks and all storage tank replacements, <u>at a minimum</u>, shall have ULC 603.1 cathodically protected steel or ULC 615 FRP single-wall tanks and lines, leak detection, over-fill or spill prevention systems, drip trays, in-line vertical check valves, cathodic protection monitoring terminals, a monthly statistical inventory reconciliation analysis, and a daily inventory reconciliation.</p> <p>(2) Excavations shall not exceed six metres in depth. Where the overburden is less than six metres, the excavations shall not expose the aquifer or reduce the overburden substantially.</p>	