

VMC Chapter 14.26

WATER RESOURCES PROTECTION ORDINANCE

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14.26.100 Purpose

A. The purpose of this Chapter is to protect water resources in the City by establishing development regulations and minimum standards to reduce the risks of contaminants entering water resources as defined at VMC Section 14.26.110MM.

B. In furtherance of this purpose, the City prohibits the discharge of contaminants to water resources as set forth in VMC Section 14.26.117 and requires certain operations to utilize best management practices as set forth in VMC Sections 14.26.120, .125, and .130.

C. The City also recognizes that achieving successful pollution control must include a water resources pollution prevention education component for businesses, industries, and the general public. In implementing this Chapter, the City will offer education and technical assistance to businesses, industries, and the general public to explain how to implement water resource protection and pollution control practices. Enforcement actions will normally be implemented when:

1. Education and technical assistance measures are unsuccessful at protecting the public interest;
2. Best management practices are not followed; or
3. Persons willfully contaminate the water resources of the City.

D. It is not the intent of this Chapter to have the City pursue enforcement actions against businesses, industries, or persons whose actions or activities result in the discharge of de minimus amounts, as defined at VMC Section 14.26.110I herein, of contaminants into the water resources of the City.

E. The City finds this Chapter is necessary to protect the health, safety and welfare of the residents of the City and the integrity of the City's water resources for the benefit of all by:

1. Minimizing or eliminating surface and ground water quality degradation;
2. Preserving and enhancing the suitability of waters for recreation, fishing, wildlife habitat, aquatic life and other beneficial uses; and
3. Preserving and enhancing the aesthetic quality and biotic integrity of the water.

F. The City recognizes the importance of maintaining economic viability while providing necessary environmental protection. This Chapter helps achieve both goals.

14.26.105 Interpretation

The provisions of this Chapter shall be liberally construed by the City to serve the purposes of this Chapter.

14.26.110 Definitions

A. BMP(s) or Best Management Practice(s).

Maintenance measures and operational practices that are considered the most effective, practical means of preventing or reducing pollution from nonpoint or point sources. BMPs are defined by trade organizations, government agencies, and other organizations involved in pollution prevention and environmental regulation.

B. Bulk Petroleum Fuel Operation.

An operation that manages a cumulative total of 12,000 gallons or more of petroleum fuel on-site in tanks capable of holding volumes of at least 4,000 gallons.

C. Sewage Disposal Cesspool.

A lined excavation in the ground which receives the discharge of a drainage system, designed to retain solids and organic matter while permitting liquids to seep through the sides and bottom.

D. Chemical Lagoons and Pits.

Any earthen basin or uncovered concrete basin or depression containing hazardous materials.

E. City.

The City of Vancouver, the City Manager or his/her designees, as appropriate.

F. Closure of Operation.

The cessation of activity such that hazardous materials are no longer managed at the operation. For the purposes of this Chapter, an operation is considered closed if it has been non-operational for a continuous period of 2 years.

G. Container.

Any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

H. Dangerous Waste.

Waste designated in the Washington State Dangerous Waste Regulations (WAC 173-303) as dangerous or extremely hazardous due to its physical, chemical or biological properties.

I. De minimus Amounts.

A small or miniscule amount of contaminant in a discharge that is demonstrated to be non-harmful to the environment.

J. Discharge.

The release of materials such that the materials may enter or be emitted to the air, land, or water resources.

K. Disposal.

Discharging, discarding, or abandoning materials into or on any land, air, or water resources.

L. Disposal Site.

An area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application site as defined at VMC Section 14.26.110S herein, surface impoundment, injection well, or waste pile.

M. Drywell.

A precast concrete manhole with perforations and installed with drain rock or other material for exfiltration of surface water runoff or other drainage to the subsurface.

N. Existing Operations, Uses, Activities.

Operations, uses, or activities established prior to the effective date of this Chapter.

O. Ground water.

Water that exists beneath a land surface or beneath the bed of any stream, lake, reservoir or other body of surface water. It is water in a geological formation or structure that stands, flows, percolates or otherwise moves.

P. Hard Chrome Plating.

Chrome plating applied in a sufficient thickness to provide a hardened protective surface rather than merely a decorative surface. A hard chrome shop is more likely to be a large single-purpose plating shop with higher quantities of hazardous plating materials onsite, whereas facilities which do decorative plating may do so as just one of the steps in their manufacturing process.

Q. Hazardous Material.

Any product, substance, commodity, or waste in liquid, solid or gaseous form that exhibits a characteristic that presents a risk to water resources. Risk may be due to ignitability, toxicity, reactivity, instability, corrosivity, or persistence. This definition extends to all “dangerous wastes” and “hazardous substances” that are defined in WAC 173-303 (State Dangerous Waste Regulations). It also includes the chemicals and/or substances that are defined in the federal Emergency Planning and Community Right to Know Act (EPCRA) and/or the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

R. Infiltration Facility.

For the purposes of this Chapter, any mechanism that is intended to direct stormwater or process wastewater directly into the ground without providing treatment in accordance with VMC

Chapters 14.10 and 14.25 shall be considered an infiltration facility. Examples include drywells, ponds, trenches and perforated pipe systems.

S. Land Application Site.

A place where wastes such as sludge or gray water are applied to the land.

T. Leachable Constituents.

These constituents are determined using the Toxicity Characteristic Leaching Procedure (TCLP), Test Method 1311 in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846.

U. Manage.

A general term that includes, but is not limited to, the use, transfer, storage, processing and re-packaging of materials. This does not include the active or immediate transportation of materials.

V. Municipal Water Supply Well.

A City- or Clark Public Utility (CPU)-owned drinking water well meeting the definition of a Group A Community water system as defined by WAC 246-290-020. Locations of such wells are depicted on the Water Resources Protection Ordinance Critical Area and Special Protection Area map as maintained by the City.

W. New Operations, Uses, Activities.

Operations, uses, or activities established on or after the effective date of this Chapter. Development or activities requiring a building or other permit are new operations, uses, or activities. In addition, when a change in an operation places that operation into a higher classification per VMC Table 14.26.125A, the operation shall be considered and treated as a new operation.

X. Operation(s).

Industrial, commercial, institutional, or residential activity that may be publicly- or privately-owned and operated, and may involve the use of stationary facilities, equipment, transport vehicles, or transfer equipment. To the extent allowed by state or federal law, this definition includes all federal, state, or local government entities.

Y. Outdoor Wood Preservation.

The act of pressure treating wood products for weather resistance and outdoor use, using organic-based preservatives such as creosote or pentachlorophenol, typically used to treat poles or heavy timbers, and inorganic-based preservatives such as chromium, copper and arsenic, typically used to treat dimension lumber.

Z. Person.

Any human being, firm, labor organization, partnership, corporation, unincorporated association, trustee, trustee in bankruptcy, receiver, or any other legally recognized entity.

AA. Petroleum Fuel.

Petroleum-based liquid products that are refined from crude oil specifically for fuel purposes. Fuel includes, but is not limited to, all grades of automotive gasoline, aviation gasoline, diesel, heating oils, and kerosene.

BB. Potentially Harmful Materials.

Hazardous materials as defined at VMC Section 14.26.110Q as well as other materials such as the following which, if discharged or improperly disposed, may present a risk to water resources:

Petroleum products including but not limited to petroleum fuel and petroleum based coating and preserving materials; Oils containing PCB's; Antifreeze and other liquid automotive products; Metals, either in particulate or dissolved form, in concentrations above established regulatory standards; Flammable or explosive materials; Radioactive material; Used batteries; Corrosives, acids, alkalis, or bases; Paints, stains, resins, lacquers or varnishes; Degreasers; Solvents; Construction materials; Drain cleaners and other toxic liquid household products; Pesticides, herbicides, fungicides or fertilizers unless applied in accordance with local, state and federal standards; Steam cleaning and carpet cleaning wastes; Car wash water; Laundry wastewater; Soaps, detergents, ammonia; Swimming pool backwash; Chlorine, bromine, and other disinfectants; Heated water; Domestic animal wastes; Sewage; Recreational vehicle waste; Animal carcasses, excluding salmonids; Food wastes; Collected lawn clippings, leaves or branches; Trash or debris; Silt, sediment, or gravel; Dyes; and Untreated or unapproved wastewater from industrial processes.

CC. Process Wastewater.

Wastewater discharged from one or more industrial processes or industrial cleanup procedures.

DD. Releasing or Release.

Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including but not limited to the abandonment or discarding of barrels, containers, and other closed receptacles.

EE. Responsible Government Official.

A person employed by the federal, state, or a local government with authority to protect the public health and safety or water resources. Examples include, but are not limited to persons employed by the police and fire departments, and employees of the Washington State Department of Ecology, the United States Environmental Protection Agency, Clark County, and the Southwest Washington Health District.

FF. Stormwater.

Water derived from a storm event or conveyed through a storm sewer system.

GG. Stormwater Manual.

"Stormwater Manual" means the most recent edition of the State of Washington Department of Ecology's "Stormwater Management Manual for Western Washington" including any and all updates and errata sheets issued for correction or clarification.

HH. Stormwater Treatment Facility.

A facility that is intended to remove pollutants from stormwater. A few examples of treatment facilities are detention ponds, oil/water separators, biofiltration swales, and constructed wetlands.

II. Surface Water.

Water that flows across the land surface, in channels, or is contained in depressions in the land surface, including but not limited to ponds, lakes, rivers, and streams.

JJ. Tank.

A stationary device designed to contain liquids used or stored at an operation which may include hazardous materials, chemicals or dangerous wastes, and which is constructed primarily of non-earthen materials to provide structural support.

KK. Toxicity.

Having properties that cause or significantly contribute to death, injury, or illness in humans or wildlife. A material exhibits the characteristic of toxicity if it contains certain leachable constituents at sufficient concentrations to be considered dangerous to human health and the environment. Leachable constituents and toxicity concentrations are referenced in the Toxicity Characteristic List of WAC 173-303-090(8) as amended.

LL. Transfer Warehouse.

Any enclosed and covered transportation-related warehouse where shipments of products, which may be hazardous materials but not dangerous wastes, are held in portable containers for transfer.

MM. Water Resources.

Water resources include surface water, stormwater, and groundwater.

14.26.112 Authority

The City shall retain the authority to require implementation of any portion of this Chapter, as defined herein and as necessary to protect water resources when the City becomes aware of and documents specific circumstances concerning the operation which demonstrate that the measures are necessary to protect public health and safety. The City may impose additional requirements whenever documented specific circumstances applicable to the operation threaten water resources.

14.26.115 Scope and Applicability

A. Operations.

All operations are subject to the provisions of this chapter. Each operation shall meet the Minimum Standards defined in VMC Section 14.26.120. Operations that manage hazardous materials may also be required to meet the Greater Standards for Hazardous Materials Management, as defined in VMC Sections 14.26.125 and .130.

B. Designated Areas.

1. Critical Aquifer Recharge Area.

The entire area within the boundary of the City of Vancouver (as it exists on the effective date of this Chapter and as it may exist in the future) is designated as a Critical Aquifer Recharge Area. The provisions of this Chapter shall apply to all areas within the City.

2. Special Protection Areas.

a. Special Protection Areas are defined inside the Critical Aquifer Recharge Area (inside the City boundary), to include property within one thousand nine hundred feet (1900') of any municipal water supply well. The locations of these wells are depicted on the Water Resources Protection Ordinance Critical Area and

Special Protection Areas map (or the equivalent update) that is maintained by and available from the City.

b. The City shall apply development restrictions as defined in VMC Section 14.26.135 to activities inside the Special Protection Areas.

C. Prohibitions.

Regardless of operating status or location, the following uses and activities shall be prohibited within the City:

1. Hard Chrome Plating Operations
2. Outdoor Wood Preservation Operations
3. Chemical Lagoons and Pits
4. Sewage Disposal Cesspools
5. Hazardous Material Disposal Sites
6. Radioactive Waste Disposal Sites
7. Municipal Waste Disposal Sites

D. Emergency Response Exclusion.

Emergency response activities shall be excluded from the requirements of this Chapter, if such an activity is initiated and completed within a timeframe too short to allow for full compliance with this Chapter. This exclusion shall only apply to immediate actions that are undertaken in response to an imminent threat to water resources, public health or safety. This exclusion shall not apply unless a responsible government official as defined at VMC Section 14.26.110EE is notified and agrees that the event is a qualifying emergency.

14.26.117 Discharges to Water Resources

A. Prohibited Discharges.

No person or operation shall discharge any potentially harmful materials as set forth at VMC Section 14.26.110BB herein into the water resources of the City. Persons or operations shall use all known, available, and reasonable means to prevent the discharge of any potentially harmful materials into the water resources of the City.

B. Unauthorized Connections.

1. Any connection that could allow conveyance of any solid, liquid, or gas material not composed entirely of surface and storm water directly to water resources is considered an unauthorized connection and is prohibited, except:
 - a. Connections conveying allowable discharges as set forth at VMC Section 14.26.120C2 herein;
 - b. Connections conveying discharges pursuant to an NPDES permit or a state waste discharge permit; and
 - c. Connections conveying effluent from permitted or authorized onsite sewage disposal systems to subsurface soils.
2. Floor drains shall not be installed inside an operation which stores or uses hazardous materials unless approved by the City for connection to sanitary sewer. Existing floor drains connected to storm drains or to surface water drains located in or near indoor hazardous material storage or use areas are considered unauthorized connections and shall be sealed or removed to prevent liquid entry, piped to the sanitary sewer (with approval and appropriate shut-off valves), be routed to blind sumps, or be

directed to additional containment or treatment systems meeting the standards of this Chapter.

C. Allowable Discharges.

The following types of discharges shall be permitted unless the City determines that these discharges (whether singly or in combination with others) are causing significant contamination of water resources:

1. Potable water;
2. Potable water line flushing;
3. Uncontaminated water from crawl space pumps or footing drains;
4. Lawn watering;
5. Residential car and boat washing;
6. Residential swimming pool and spa water;
7. Materials placed as part of an approved habitat restoration or bank stabilization project;
8. Natural uncontaminated surface water or ground water;
9. Flows from riparian habitats and wetlands;
10. Common discharge practices from water well disinfection;
11. Approved septic system discharges;
12. City-approved dye testing following verbal notification to the City at least one day prior to the date of test. The City and the Clark County Public Works Department are exempt from this requirement;
13. Any discharge allowed by an operation's National Pollution Discharge Elimination System (NPDES) permit or other authorized discharge permit;
14. Any discharge specifically allowed in writing by a local, state or federal agency for remedial action in an agreed order, a consent decree or in a voluntary cleanup effort.

14.26.120 Minimum Standards

A. Operational Best Management Practices (BMPs).

All operations shall adopt the following best management practices to ensure their operations minimize potential risks to water resources.

1. Precautions.

The owner/operator shall take precautions to prevent accidental releases of hazardous materials. Hazardous materials shall be separated and prevented from entering stormwater systems, septic systems, and drywells.

2. Hazardous Materials Management.

Hazardous materials shall be managed so that they do not threaten human health or the environment, or enter water resources.

3. Leaks and Spills.

All leaks and spills of hazardous materials shall be promptly contained and cleaned up. The City is to be notified of any release of hazardous materials in quantities greater than or equal to the reportable quantities referenced in 40 CFR 302.4 (also referenced in Section 103a of CERCLA), or releases of other hazardous materials that clearly impact water resources, as soon as possible but no later than 24 hours after the release.

4. Oil/Water Separators.

Oil/water separators shall be inspected, cleaned and maintained as stipulated in the Stormwater Manual. The City may allow an operation to modify the regularity of

cleanouts if the operation can demonstrate to the City’s satisfaction that the separator operates effectively at less frequent cleaning intervals.

5. Pesticide and Fertilizer Management.

All pesticides, herbicides, fungicides and fertilizers shall be applied and managed according to the “Applicable Operational BMP’s for the Use of Pesticides and Fertilizers” in the Stormwater Manual.

6. Stormwater Treatment Systems.

Stormwater collection and conveyance systems and treatment facilities, including catch basins, detention ponds and vaults, biofilters, settling basins, and infiltration systems, shall be cleaned and maintained according to the “Applicable Operational BMP’s for the Maintenance of Stormwater, Drainage and Treatment Systems” in the Stormwater Manual.

7. Decommissioning Water Wells.

Any water well which is unusable, abandoned, or whose use has been permanently discontinued, or which is in such disrepair that its continued use is impractical or is an environmental, safety or public health hazard shall be decommissioned according to the provisions of the Washington Administrative Code WAC 173-160-381.

8. Operation Closure.

At the closure of an operation, all hazardous materials shall be removed from the closing portion of the operation and disposed of in accordance with local, state and federal laws.

14.26.125 Application of Greater Standards

A. Classifications.

Certain non-residential operations present a greater potential risk to water resources because of the volume and type of hazardous materials that are managed. These non-residential operations are classified in VMC Table 14.26.125A and are subject to the stipulated actions defined in this Section.

Table 14.26.125A – CLASSIFICATIONS	
Classification	Definition
Class I Operations	<p>Operations that at any time within a year time period will or do manage over 220 pounds in total of the following:</p> <p>A. Hazardous materials, including any mixtures thereof, that contain constituents referenced in the Code of Federal Regulations, 40 CFR 302.4 (referenced in Section 103(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)); or</p> <p>B. Hazardous materials, including any mixtures thereof, that contain constituents from the lists specified in VMC Table 14.26.125A, Class II (below).</p> <p><u>Concentration Declassification.</u> A Class I operation shall no longer be a classified operation if the Class I constituents (40 CFR 302.4) contained in a product or waste are individually present at less than 1% by weight for non-carcinogenic hazardous materials, and less than 0.1% by weight for known or suspected carcinogenic hazardous materials. (Operators should review the Material Safety Data Sheet for the</p>

Table 14.26.125A – CLASSIFICATIONS	
Classification	Definition
	<p>hazardous materials to make this determination).</p> <p><u>Consumer Quantity Declassification.</u> A Class I operation shall no longer be a classified operation if both of the following conditions are met:</p> <ul style="list-style-type: none"> A. The operation is focused on research, education, distribution or consumer oriented activities, including but not limited to laboratories, hospitals, schools, cargo handlers, distributors, warehouses, or retailers; and B. Products containing Class I or Class II hazardous materials are managed in closed containers or sealed bags with individual capacities of no more than 10 gallons for a liquid material and no more than 80 pounds for a dry or solid material. <p><u>Metal and Metal Alloy Declassification.</u> Solid metals and solid metal alloys, including but not limited to roll stock, bar stock, sheet stock, and manufactured articles such as equipment, parts, building materials, and piping, that contain one or more metals listed in 40 CFR 302.4 or WAC 173-303-090(8) shall be declassified; EXCEPT, that where machining, forming, grinding, cutting, melting, or other activities produce residues such as shavings, grindings, swarf, fume, or other finely divided particulate forms of a listed metal or metal alloy that may present a threat to water resources, such residues shall not be declassified.</p>
Class II Operations	<p>Operations that at any time within a year time period will or do manage over 2,200 pounds in total of the following:</p> <ul style="list-style-type: none"> A. Hazardous materials, including any mixtures thereof, that exhibit the characteristic of toxicity as defined at VMC Section 14.26.110KK because they contain leachable constituents as defined at VMC Section 14.26.110T from the Toxicity Characteristic List of WAC 173-303-090(8) as amended; or B. Hazardous materials, including any mixtures thereof, that contain constituents that are referenced on the Halogenated Solvent List set forth in VMC Table 14.26.165A. <p><u>Site Cleanup Reclassification.</u> A Class II operation shall be reclassified as a Class I operation if the primary activity is site remediation or cleanup pursuant to an approved settlement agreement or a remedial action under 70.105B RCW.</p> <p><u>Concentration Reclassification.</u> A Class II operation shall be reclassified as a Class I operation if the Class II constituents (from WAC 173-303-090(8) or the Halogenated Solvent List set forth in Table 14.26.165A) are present in the hazardous materials being managed at concentrations of less than 5% by weight.</p>

Table 14.26.125A – CLASSIFICATIONS	
Classification	Definition
	<p><u>Transfer Warehouse Reclassification.</u> A Class II operation shall be reclassified as a Class I operation if the following conditions are met:</p> <ul style="list-style-type: none"> A. The operation is a transfer warehouse as defined in VMC Section 14.26.110LL; and B. Containers of hazardous materials are not opened at the site under any circumstance; and C. Products containing Class II hazardous materials are managed in containers with individual capacities of no more than 400 gallons. <p><u>Consumer Quantity Declassification.</u> A Class II operation shall no longer be a classified operation if both of the following conditions are met:</p> <ul style="list-style-type: none"> A. The operation is focused on research, education, distribution or consumer oriented activities, including but not limited to laboratories, hospitals, schools, cargo handlers, distributors, warehouses, or retailers; and B. Products containing Class I or Class II hazardous materials are managed in closed containers or sealed bags with individual capacities of no more than 10 gallons for a liquid material and no more than 80 pounds for a dry or solid material.

B. Stipulated Actions and Timelines.

Class I and II operations shall adopt the Greater Standards for Hazardous Material Operations defined in VMC Section 14.26.130, according to the following stipulations:

1. New Operations.

New Class I and Class II operations shall adopt the Greater Standards beginning the date of issuance of certificate of occupancy or as otherwise specified in accordance with the provisions of this Chapter.

2. Existing Operations.

Existing Class I and Class II operations shall adopt the Greater Standards (or some portion thereof), within a time period specified by the City, if the City becomes aware of and documents specific circumstances which demonstrate that Greater Standards (or some portion thereof) are necessary to protect public health and safety, or reduce the risk of contamination to water resources.

3. Change of Class or Tenant.

The City shall be notified as soon as possible and no later than 30 days after:

- a. A change in classification of an operation as defined in VMC Table 14.26.125A.
- b. Occupation of an existing Class I or II operation by a new tenant.

14.26.130 Greater Standards for Hazardous Materials Operations

A. Structural Best Management Practices (BMPs).

All new Class I and II operations shall implement the provisions of this Section prior to the date of issuance of the certificate of occupancy.

1. Design and Construction.

Operations shall be designed, constructed, maintained and operated to minimize the possibility of an unplanned release of hazardous materials to soil or water resources.

2. Container/Tank Management.

A container or tank holding a hazardous material shall always be closed, except to add or remove materials. Hazardous materials shall also be managed so that they do not damage the structural integrity of the operation or devices containing the material.

3. Container/Tank Condition.

All containers and tanks shall be maintained in such a manner as to assure effective operation and prevent the release of hazardous materials.

4. Container/Tank Identification.

The owner/operator shall label all containers and tanks containing hazardous materials to identify the major risk(s) associated with the contents. This labeling shall conform to applicable sections of the Uniform Fire Code, Occupational Safety and Health standards, and/or the State of Washington's Dangerous Waste Regulations.

5. Releases and Ancillary Equipment.

Any leaking pipe, pump, or other ancillary equipment shall be repaired or replaced promptly. All hazardous materials that have been released are to be contained and abated immediately. The City is to be notified of any release of hazardous materials in quantities greater than or equal to the reportable quantities referenced in 40 CFR 302.4 (also referenced in Section 103a of CERCLA), or releases of other hazardous materials that clearly impact water resources, as soon as possible but no later than 24 hours after the release. Ancillary equipment associated with hazardous materials shall be supported and protected against physical damage and excessive stress.

6. Compatibility.

The owner/operator shall use a container or tank made of or lined with materials which are compatible with the hazardous materials to be stored.

7. Containment.

Container and tank storage areas shall have a containment system that is capable of collecting and holding spills and leaks. This containment shall:

- a. Be constructed of an impervious surface with sealed joints.
- b. Joints between concrete slabs and slab/foundation interfaces should be eliminated or minimized in the operation;
- c. Provide pollution control measures to protect water resources, including run-off collection and discharge from active areas;
- d. Be designed to provide secondary containment of 110% of the container's or tank's capacity; or in areas with multiple tanks, 110% of the largest tank or 10% of the aggregate tank volumes, whichever is larger. Secondary containment shall be provided in all areas where hazardous materials are loaded/unloaded, transferred, accumulated or stored;
- e. Be compatible with the materials that are being handled; and
- f. Be routinely inspected as defined at VMC Section 14.26.130C.

8. Loading Areas.

Loading and unloading areas shall be designed, constructed, operated and maintained to:

- a. Contain spills and leaks that might occur during loading/unloading;
- b. Prevent releases of hazardous materials to water resources;
- c. Contain wash waters (if any) resulting from the cleaning of contaminated transport vehicles and load/unload equipment; and

d. Allow for removal as soon as possible any collected hazardous materials resulting from spills, leaks, and equipment cleaning.

9. Closure.

At closure of an operation, all remaining structures, containers, tanks, liners, and soil containing or contaminated with hazardous materials at concentrations above state and federal regulatory thresholds shall be decontaminated and properly disposed of or managed.

B. Spill and Emergency Response Plan (SERP).

1. All new Class I and II operations shall develop and implement a Spill and Emergency Response Plan (SERP) within 90 days of the date of issuance of the certificate of occupancy. Other operations may also be required to develop and implement a SERP if the City determines this action will help prevent releases of hazardous materials to water resources.

2. The SERP shall be maintained on site, and shall be made available to the City upon request.

3. The SERP shall be updated at least every 5 years or as needed to reflect significant changes in operation or practices.

4. At a minimum, the SERP shall include the following information:

a. Spill Prevention.

i. Drawings including the layout of the operation, a floor plan, direction of drainage, entrance and exit routes, and areas where hazardous materials are received, stored, transported, handled or used in operations.

ii. Listings of all hazardous materials on site including types, volumes, locations and container types and sizes.

iii. Spill prevention related equipment including equipment which serves to detect releases of potential water resources contaminants.

b. Emergency Response.

i. Chain of command and procedures for spill response.

ii. Phone list of response agencies including federal, state and City emergency contact numbers and environmental cleanup companies.

iii. Procedures for treating and disposing of spilled hazardous materials.

c. Certification.

The SERP shall include a certification signed by an authorized representative of the operation stating: *“I certify that the information provided in this document is to the best of my knowledge true and complete, and the spill prevention equipment and emergency response measures described herein are as stated.”* The signed certificate shall include the authorized representative’s name (printed), title, and contact information.

C. Operational Inspections.

1. All new Class I and II operations shall implement the provisions of this Section upon issuance of certificate of occupancy. Other operations may also be required to implement these provisions if the City determines this action will help prevent releases of hazardous materials to water resources.

2. Schedule.

The owner/operator shall develop a written schedule for inspecting all monitoring equipment, safety or emergency equipment, security devices, and any other equipment that helps prevent, detect, or respond to water resource-related hazards.

3. Regular Inspections.

The owner/operator shall perform site inspections to identify malfunctions and deterioration of equipment or containers, operator errors, discharges, or any other condition that may cause or lead to the release of hazardous materials to water resources. The owner/operator shall conduct these inspections often enough to identify problems in time to correct them before they impact water resources. Inspections shall be completed in all areas where hazardous materials are managed and a written record of those inspections made at least annually.

4. Water Resource-Related Hazard Mitigation.

The owner/operator shall remedy any problems revealed by the inspection. Where a water resource-related hazard is imminent or has already occurred, remedial action shall be taken immediately.

D. Training Program.

1. All new Class I and II operations shall implement the provisions of this Section upon issuance of certificate of occupancy. Other facilities also may be required to implement these provisions if the City determines this action will help prevent releases of hazardous materials to water resources.

2. Operations shall develop a training program or amend an existing program that informs employees at least once each year of any possible risks to water resources associated with on-site operations. The owner/operator shall ensure that employees know or understand:

- a. The location of hazardous materials managed at the operation and the associated potential risks to water resources;
- b. The location of material safety data sheets (MSDS) at the operation;
- c. How employees can detect the presence or release of hazardous materials;
- d. How employees can protect themselves through work practices, emergency procedures, and with personal protective equipment;
- e. How to locate and use the operation's Spill and Emergency Response Plan; and
- f. How to prevent the pollution or contamination of water resources.

E. Closure Plan.

1. Each new Class II operation shall prepare and submit to the City a Closure Plan within 6 months of the date of issuance of the certificate of occupancy. Each existing Class II operation shall prepare and submit such a plan within 6 months of a request by the City. Class II operations shall ensure that their facilities are closed in a manner that prevents the release of hazardous materials during closure, protects water resources, and prevents post-closure escape of hazardous materials to water.

2. Plan Requirements.

The Closure Plan shall detail the means by which the operation will, upon any closure anticipated to be longer than 2-years, remove and properly dispose of hazardous materials, and perform an investigation to confirm the presence or absence of hazardous

materials in the soil and ground water, if potential contamination is indicated. Specifically, the Closure Plan shall include the following:

- a. A listing of the types and quantities of hazardous materials reasonably expected to be present on-site during the operating life of the operation.
- b. A description of the plan for removal and disposal of hazardous materials.
- c. A description of the plan to decontaminate containment systems and ancillary equipment.
- d. An estimate of the cost to implement the Closure Plan, using the assumption that a third party will conduct removal and disposal activities.
- e. A certification signed by an authorized representative of the business/industry submitting the Closure Plan stating, *"I certify that the information provided in this document is to the best of my knowledge accurate and the closure measures described herein will be implemented as stated."* The signed certificate shall include the authorized representative's name (printed), title, and contact information.

3. Report Update.

The owner/operator of an operation shall update the Closure Plan every 5 years or recertify the current information and estimates. The Closure Plan shall also be updated if operating procedures change in such a way that the volume/mass of hazardous material is increased by 25% or more.

F. Engineering and Operating Report.

When the City recognizes and demonstrates a need for additional information on an operation's practices, the City may require the operation to submit an Engineering and Operating Report to accommodate the City's review of operations and to prevent releases of hazardous materials to water resources. If required, the Report shall provide the following:

1. The type of industry or business including the kind and quantity of finished products.
2. A process flow diagram illustrating the process flow of water and materials in a normal operating day. This will include details on the operation's plumbing and piping and where specific chemicals are added to processes.
3. A discussion of any discharges to the municipal sewer system.
4. A discussion of any discharges through land applications, including seepage lagoons, irrigation, and subsurface disposal. As applicable, this discussion should also include the depth to ground water and anticipated overall effects of the operations on the quality of water resources.
5. Provisions for any plans for future expansion or intensification.
6. A certification signed and dated by an authorized representative of the operation stating: *"I certify that the information provided in this document is to the best of my knowledge true and complete."* The signed certificate shall include the authorized representative's name (printed), title, and contact information.

G. Records & Reports.

1. Operations shall maintain records of required inspection, training, cleaning and maintenance events. Where operations are otherwise required by the City or another agency to maintain such records, those records shall satisfy this requirement. All operations shall maintain these records on site for at least 3 years and shall make them available to the City upon request.

2. Plans, reports or other documentation concerning the management of hazardous materials shall also be made available to the City upon request.
3. Information provided to the City will be available to the public. Information may be claimed as confidential by the operation as outlined at VMC Section 14.26.150 herein. If no claim is made at the time of submission, the City will make the information available to the public when requested.

H. Protections for Stormwater.

All new Class I and II operations shall implement the applicable structural Best Management Practices (BMPs) of the Stormwater Manual prior to the date of issuance of the certificate of occupancy.

14.26.135 Restrictions in Special Protection Areas

A. Development Limitation.

1. New Operations. The City shall not approve applications for the following in Special Protection Areas as defined in VMC Section 14.26.115B2:
 - a. New bulk petroleum fuel operations as defined by VMC Section 14.26.110B; or
 - b. New Class II operations as defined in VMC Table 14.26.125A, EXCEPT a new Class II operation may occupy an existing structure or facility appropriate for the use and located between 1,000 and 1,900 feet from a municipal water supply well when:
 - i. All applicable provisions of this Chapter are met; and
 - ii. The owner or operator provides an Engineering and Operating Report described in VMC Section 14.26.130F to the City's satisfaction.
2. Existing Operations.
 - a. Existing bulk petroleum fuel operations are nonconforming uses. However, existing bulk petroleum fuel operations throughout the Special Protection areas may become conforming by:
 - i. Filing such a request with the City; and
 - ii. Taking the necessary action(s) to meet all applicable provisions of this Chapter to the City's satisfaction.
 - b. Existing Class II operations are nonconforming uses. However, an existing Class II operation located between 1,000 and 1,900 feet from a municipal water supply well may become conforming by:
 - i. Filing such a request with the City; and
 - ii. Taking the necessary action(s) to meet all applicable provisions of this Chapter to the City's satisfaction.

B. Septic Systems.

1. The City shall accept no application for approval of a project in the Critical Aquifer Recharge Area defined at VMC Section 14.26.115B1, including the Special Protection Areas defined at VMC Section 14.26.115B2 relying upon installation of a septic system until the system has been approved by the Southwest Washington Health District, or a successor agency responsible for permitting of septic systems.
2. New septic systems and replacement of existing septic systems shall not be permitted in Special Protection Areas. An owner/operator may seek relief from this prohibition by filing with the City a request for relief accompanied by an analysis

prepared by a qualified professional to the City's satisfaction of the potential for groundwater contamination at the site. This analysis may include a soils and groundwater evaluation if deemed necessary by the City.

3. The City shall not approve a project relying upon installation of a septic system in a Special Protection Area unless all of the following findings are made:

- a. Connection to an existing sewer line is impossible or impracticable; and
- b. The property cannot be reasonably developed without use of a septic system; and
- c. The septic system design poses no significant risk of groundwater contamination.

4. The City's decision may be appealed to the Hearings Examiner in accordance with VMC Section 14.26.160.

C. Infiltration Facilities.

1. New infiltration facilities, and replacement of existing infiltration facilities shall not be permitted for Class I and Class II operations in Special Protection Areas. An operation may seek relief from this prohibition by filing with the City a request for relief accompanied by an analysis prepared by a qualified professional to the City's satisfaction of the potential for groundwater contamination at the site. This analysis may include a soils and groundwater evaluation if deemed necessary by the City.

2. The City shall not approve a project relying on installation of an infiltration facility in a Special Protection Area unless the request for relief demonstrates to the City's satisfaction that:

- a. No reasonable alternative exists; and
- b. The infiltration facility poses no significant risk of groundwater contamination.

3. The City's decision may be appealed to the Hearings Examiner in accordance with VMC Section 14.26.160.

14.26.140 Administrative Programs

A. Educational and Technical Assistance Program.

1. The City will work in conjunction with other agencies to implement an Education and Technical Assistance Program to assist property owners, business and industry owners and managers, residents, and other interested parties in understanding the importance of protecting the City's water resources and in employing best management practices in pursuit of that goal.

2. The program directed toward business and industry will include but not be limited to technical assistance visits, informational fact sheets, self-audits or workshops.

3. Additional education and assistance programs aimed at residences, public institutions and low risk businesses shall include:

- a. Education on the proper use of pesticides, herbicides, fungicides, and fertilizers;
- b. Discussions of the impacts of unauthorized discharges to drywells, catch basins, storm basins and sanitary sewer; and
- c. Activities to explain and promote the proper management and disposal of used oil and other contaminants.

B. Compliance Inspections.

1. City personnel may inspect any operation in the City that is known to manage (or may potentially manage) hazardous materials.
2. Inspections may be initiated as the result of a complaint or referral, or as defined by a routine schedule for compliance. Inspections will be used to determine if there is any risk to water resources, and to determine if an operation is in compliance with this Chapter.
3. Inspections may involve a review of process equipment, structures, and operating practices; records or plan review; interviews with operators; photo documentation and sampling. As such, operators shall allow representatives of the City, upon presentation of credentials, to:
 - a. Enter the premises where hazardous materials are being managed, or where records may be kept under the provisions of this Chapter. The owner/operator shall make necessary arrangements to allow access without delay. Unreasonable delay may constitute a violation of this Chapter;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the provisions of this Chapter;
 - c. Inspect at reasonable times any facilities, equipment (e.g., safety, monitoring, operating, or other equipment), practices or operations regulated or required under the provisions of this Chapter;
 - d. Sample and monitor at reasonable times, any substances or parameters at any location for the purposes of assuring compliance or as otherwise authorized by the provisions of this Chapter. This requirement may involve the City's installation or erection of equipment to conduct sampling, inspection, compliance monitoring or metering operations. As such, at the written or verbal request of the City, operators shall remove any temporary or permanent obstruction to safe and easy access to an operation to be inspected and/or sampled. The operator shall not replace such an obstruction without the City's consent.

14.26.145 Enforcement

A. Compliance Violations and Actions.

1. The City may use field notes, observations, photo documentation, sample logs, analytical results or other information to define risk and to establish that an operation is in violation of this Chapter.
2. The City will work cooperatively with an operation to address risks to water resources, and to achieve compliance with the provisions of this Chapter. As necessary, the City will provide a notice of violations, and will establish a reasonable timeline to achieve compliance. If an operation does not take the steps necessary to come into voluntary compliance within a defined period of time, the City may take enforcement action.
3. The City may require the implementation of the operational or structural best management practices, as defined through the provisions of this Chapter. The City may also require the operator to sample and analyze any discharge, surface and storm water, ground water and/or sediment, in accordance with sampling and analytical procedures or requirements determined by the City. If the operator is required to complete this sampling and analysis, a copy of the analysis shall be provided to the City.
4. The City may impose additional requirements whenever documented specific circumstances (applicable to the operation) threaten water resources.

5. Whenever the City determines that any violation of this Chapter poses a hazard to public health, safety or welfare; endangers any property; or adversely affects the safety and operation of City right-of-way, utilities and/or other property owned or maintained by the City; the person holding title to the subject property, and/or other person or agent in control of such property, upon receipt of notice in writing from the City shall within the period specified therein address the cause of the hazardous situation in conformance with the requirements of this Chapter.

6. Notwithstanding any other provisions of this Chapter, whenever it appears to the City that conditions regulated by this Chapter require immediate action to protect the public health and/or safety, the City is authorized to enter such property for the purpose of inspecting and investigating such emergency conditions. The City may without prior notice order the immediate discontinuance of any activity related to the emergency condition.

B. Penalties and Cost Recovery.

1. The City is authorized to carry out criminal and civil enforcement actions pursuant to this Chapter.

a. Criminal violations of this Chapter shall be a misdemeanor and prosecuted pursuant to VMC Title 7. Willful violations of this Chapter shall be punishable as a gross misdemeanor pursuant to VMC Section 7.04.050.

b. Civil violations of this Chapter shall incur a civil penalty up to the amount of \$5,000 per violation per day. Notice of the civil penalty shall include the amount of the civil penalty imposed and shall specify that failure to respond to this notice may be prosecuted as a gross misdemeanor punishable by a fine not to exceed \$5,000 and/or a jail term not to exceed one year. Notice of civil violations of this Chapter shall otherwise be in accordance with VMC 14.20.040. The Civil penalty shall accrue from the date set for correction in such notice.

2. In addition to any other penalty or method of enforcement, the City may bring actions for injunctive or other relief to enforce this Chapter. The owner or operator of an operation subject to enforcement action for a violation of the provisions of this Chapter is liable to the City for all costs incurred or reasonably anticipated, including attorneys' fees, natural resource damages, testing, responding to, containing, cleaning up, or monitoring the cleaning up and disposal of any released hazardous material. VMC Section 14.20.080 applies to the collection of any penalties, costs of abatement, or other charges imposed under this Chapter.

14.26.150 Trade Secrets and Confidential Records

A. Records Availability.

1. All surveys, reports, plans, diagrams, permits, and other documents, information, and data submitted to the City pursuant to this Chapter, or information and data obtained by the City through sampling, monitoring, and enforcement activities shall generally be available for public inspection and copying.

2. Such information shall also not be available for public inspection and copying if protected from public disclosure by the provisions of RCW Chapter 42.17 as amended or other state and federal laws governing the dissemination of public records and information to the public, including but not limited to patent, trademark, and trade secret laws and regulations.

3. In no case shall an employee or agent of the City be liable to a business, industry or person for the public disclosure of any surveys, reports, plans, diagrams, permits, and other documents, information, and data submitted to the City pursuant to this Chapter, or information and data obtained by the City through sampling, monitoring, and enforcement activities; unless such information or data has been marked confidential by the business, industry or person and/or the business, industry or person has requested confidentiality consistent with this Section.

B. Exemption from Disclosure Request.

1. Any business, industry or person may request that specific and particular information or data in the possession of the City be exempted from public inspection and copying. The request shall be in writing and addressed to the City, and the business, industry or person shall bear the burden of establishing that the specific and particular information or data sought to be exempted is protected from public disclosure under VMC Section 14.26.150A2. The City shall determine whether and which portions of such information are protected from public disclosure within 21 days of receipt of a request for confidentiality. The City shall not release for public inspection and copying that information and data for which a business, industry or person has requested confidentiality until such time as the City has made a determination of whether the information is protected from public disclosure, unless the City determines in good faith that the request for confidentiality is frivolous or without merit.

2. The City may withhold records based on VMC Section 14.26.150A2 only if it finds:

- a. The record contains information that reflects valuable research data that has been obtained by the City within 5 years of the date of the request and that disclosure would produce private gain and public loss. For purposes of this finding, "research data" means a body of facts and information collected for a specific purpose and derived from close, careful study, or from scholarly or scientific investigation or inquiring; or
- b. The record contains trade secret information because it includes a formula, pattern, compilation, program, device, method, technique, or process that:
 - i. Derives independent economic value, actual or potential, from not being generally known;
 - ii. The information is the subject of efforts that are reasonable under the circumstances to maintain its secrecy; and
 - iii. The information is not readily ascertainable from another source.

3. As an alternative to the procedures specified in VMC Section 14.26.150B2, the City may decline to make a determination of whether the record is exempt from public disclosure because it contains trade secret information. Where the City declines to make such a determination, the City shall provide the holder of the trade secret a reasonable amount of time, but in no case more than 21 days to obtain an order from the Superior Court preventing disclosure of the record.

4. A business, industry or person submitting information or data to the City for which the business, industry or person intends to claim whole or partial confidentiality shall mark those specific pages and sections of information or data asserted to be confidential with a conspicuous and legible marking indicating "TRADE SECRET" and/or "CONFIDENTIAL". The business, industry or person shall then submit a request for trade secret protection to the City for the marked records within 7 days of submitting such marked information or data.

C. Availability of Confidential Information.

Surveys, reports, plans, diagrams, permits, and other documents, information, and data submitted to the City pursuant to this Chapter, or information and data obtained by the City through sampling, monitoring, and enforcement activities, which the City or a court of competent jurisdiction has determined are trade secrets and exempted from public inspection and copying, shall be available upon written request to local, state, and federal governmental agencies for uses related to this Chapter, the NPDES program, state water quality monitoring and enforcement, and other enforcement proceedings involving the business, industry or person.

D. Procedure for Public Records Request.

Any person seeking to inspect or copy any surveys, reports, plans, diagrams, permits, and other documents, information, and data submitted to the City pursuant to this Chapter, or information and data obtained by the City through sampling, monitoring, and enforcement activities, which are not exempted from public disclosure, shall do so by written request to the City. The request shall be specific enough to permit the City to identify the particular documents, information, or data sought. The City shall respond to each document request in accordance with RCW 42.17.

14.26.152 Alternative Practices

- A. Where appropriate, the City shall accept other local, state or federal approvals, permits or other authorization as satisfying certain provisions defined through this Chapter. The City retains the authority to review plans, permits and operating conditions to determine compliance.
- B. The City will accept an alternative practice, system, plan or structure only if the owner/operator can demonstrate to the City that the alternative will produce the same or a greater level of water resource protection.

14.26.155 Petition for a Special Exception

- A. The owner/operator of a business may petition for a special exception from a standard or requirement of this Chapter if the owner/operator demonstrates to the City's satisfaction that:
 - 1. Strict application of the standard or requirement denies the owner/operator all reasonable economic use of property; or
 - 2. Would create an unreasonable economic burden and would not provide a significantly greater level of water resources protection.

The owner/operator shall file a request for special exception with the City. The City shall appoint a Hearings Examiner pursuant to VMC Chapter 2.51 to conduct a de novo hearing regarding the request for special exception. Notice of the hearing shall be provided in accordance with VMC 20.00.800B.

- B. The Hearings Examiner may modify a standard or requirement of this Chapter when the owner/operator provides clear, cogent and convincing evidence sufficient for the Hearings Examiner to find:
 - 1. Strict application of specific provisions of this Chapter will deprive the property owner of all reasonable use of the property; and
 - 2. Modification of the standard would not present a significant risk to water resources; and

3. The proposed modification is the minimum necessary to allow a reasonable economic use of the property; and
4. Development undertaken pursuant to the modified standard would not cause injury to drinking water wells, water resources, occupiers of the land, other nearby properties, other public resources, or the environment; and
5. The owner/operator has employed measures to avoid and minimize impacts, such as:
 - a. limiting the degree or magnitude of the regulated use or activity;
 - b. implementing best management practices;
 - c. phasing or limiting implementation;
 - d. changing the timing of activities; or
 - e. revising site plans; and
6. The measures employed under the modified standard to avoid and minimize impacts will have the intended effects; and
7. The inability to derive reasonable use of the property is not the result of actions by the owner/operator that created unfavorable business conditions and poor use of the property after the effective date of this Chapter.

C. The Hearings Examiner may modify a standard or requirement of this Chapter when the owner/operator provides clear, cogent, and convincing evidence sufficient for the Hearings Examiner to find:

1. That the standard or requirement creates an unreasonable economic burden; and
2. That the standard or requirement provides no significantly greater level of water resources protection; and
3. Development undertaken pursuant to the modified standard would not cause injury to drinking water wells, water resources, occupiers of the land, other nearby properties, other public resources, or the environment; and
4. The owner/operator has employed measures to avoid and minimize impacts, such as:
 - a. limiting the degree or magnitude of the regulated use or activity;
 - b. implementing best management practices;
 - c. phasing or limiting implementation;
 - d. changing the timing of activities; or
 - e. revising site plans; and
5. The measures employed under the modified standards to avoid and minimize impacts will have the intended effects; and
6. The economic impact imposed on the owner/operator by the standard or requirement of this Chapter is unreasonable because of the availability, effectiveness and feasibility of less burdensome solutions; and
7. The unreasonable economic burden found under VMC Section 14.26.155C1 is not the result of actions by the owner/operator that created unfavorable business conditions and poor use of the property after the effective date of this Chapter.

D. After review of the foregoing, the City shall make a recommendation to the Hearings Examiner to approve, deny, or modify the special exception.

E. In modifying a standard or requirement, the Hearings Examiner may impose reasonable conditions that prevent or mitigate the same harm that the modified regulation was intended to prevent or mitigate.

F. A Hearings Examiner's decision pursuant to this Section shall be final unless appealed to the Superior Court within 30 days of issuance.

14.26.160 Appeals

A. Unless subject to review based on the grounds under VMC Section 14.26.155, the following City actions under this Chapter may be appealed in accordance with the procedures set forth in VMC Section 14.20.070:

1. Notice of a civil violation;
2. Administrative interpretation of this Chapter.

B. Appeals shall be heard by a Hearings Examiner appointed under VMC Section 14.20.050.

C. Appeals shall be de novo.

14.26.165 Halogenated Solvent Table

Table 14.26.165A – HALOGENATED SOLVENT LIST			
Solvent	Synonym(s)	CAS No.	Specific Density (g/cc)
Benzyl chloride	Chloromethylbenzene	100-44-7	1.100
Bis(2-chloroethyl)ether	Bis(-chloroethyl)ether	111-44-4	1.220
Bis(2-chloroisopropyl)ether	Bis(-chloroisopropyl)ether	108-60-1	1.103
Bromobenzene	Phenyl bromide	108-86-1	1.495
Bromochloromethane	Chlorobromomethane	74-97-5	1.934
Bromodichloromethane	Dichlorobromomethane	75-27-4	1.980
Bromoethane	Ethyl bromide	74-96-4	1.460
Bromoform	Tribromomethane	75-25-2	2.890
Carbon tetrachloride	Tetrachloromethane	56-23-5	1.594
Chlorobenzene	Benzene chloride	108-90-7	1.106
2-Chloroethyl vinyl ether	(2-Chlorethoxy)ethane	110-75-8	1.048
Chloroform	Trichloromethane	67-66-3	1.483
1-Chloro-1-nitropropane	Chloronitropropane	600-25-9	1.209
2-Chlorophenol	o-Chlorophenol	95-57-8	1.263
4-Chlorophenyl phenyl ether	p-Chlorodiphenyl ether	7005-72-3	1.203
Chloropicrin	Trichloronitromethane	76-06-2	1.656
m-Chlorotoluene		108-41-8	1.072
o-Chlorotoluene	2-Chloro-1-methylbenzene	95-45-8	1.082
p-Chlorotoluene		106-43-4	1.066
Dibromochloromethane	Chlorodibromomethane	124-48-1	2.451
1,2-Dibromo-3-chloropropane	DPCP	96-12-8	2.050
Dibromodifluoromethane	Freon 12-B2	75-61-6	2.297
1,2-Dichlorobenzene	o-Dichlorobenzene	95-50-1	1.305
1,3-Dichlorobenzene	m-Dichlorobenzene	541-73-1	1.288
1,1-Dichloroethane	1,1-DCA	75-34-3	1.176
1,2-Dichloroethane	Ethylene dichloride, 1,2-DCA	107-06-2	1.235
1,1-Dichloroethene	Vinylidene chloride 1,1-DCE	75-35-4	1.218
trans-1,2-Dichloroethylene	trans-1,2-DCE	156-60-5	1.257
1,2-Dichloropropane	Propylene dichloride	78-87-5	1.560

Table 14.26.165A – HALOGENATED SOLVENT LIST			
Solvent	Synonym(s)	CAS No.	Specific Density (g/cc)
cis-1,3-Dichloropropene	cis-1,3-Dichloropropylene	10061-01-5	1.224
trans-1,3-Dichloropropene	trans-1,3-Dichloropropylene	10061-02-0	1.182
Ethylene dibromide	1,2-Dibromoethane, EDB	106-93-4	2.179
Hexachlorobutadiene	HCBD	87-68-3	1.554
Hexachlorocyclopentadiene	HCCPD	77-47-4	1.702
Methylene chloride	Dichloromethane	75-09-2	1.327
Pentachloroethane	Ethane pentachloride	76-01-7	1.680
1,1,2,2-Tetrabromoethane	Acetylene tetrabromide	79-27-6	2.875
1,1,2,2-Tetrachloroethane	Acetylene tetrachloride	79-34-5	1.595
Tetrachloroethylene	Perchloroethylene, PCE	127-18-4	1.623
1,2,4-Trichlorobenzene	1,2,4-TCB	120-82-1	1.454
1,1,1-Trichloroethane	Methyl chloroform, 1,1,1-TCA	71-55-6	1.339
1,1,2-Trichloroethane	1,1,2-TCA	79-00-5	1.440
Trichloroethylene	TCE	79-01-6	1.464
1,1,2-Trichlorofluoromethane	Freon 11	75-69-4	1.487
1,2,3-Trichloropropane	Allyl trichloride	96-18-4	1.389
Trichlorotrifluoroethane	Freon 113	76-13-1	1.564