

Environmental Regulations & Best Management Practices

Carpet Cleaning Operations in the Capital Regional District



This manual is published by the Regional Source Control Program.
For more information please call 250.360.3256 or
visit the CRD website at www.crd.bc.ca

Regional Source Control Program
625 Fisgard St., PO Box 1000
Victoria, BC V8W 2S6
250.360.3256

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Introduction

About this Guidebook

This guidebook has been developed to help businesses interpret the Capital Regional District's (CRD) Code of Practice for Carpet Cleaning Operations. The code is set out in full in Schedule "O" of the CRD Sewer Use Bylaw. To read it in its entirety, visit www.crd.bc.ca/sourcecontrol.

Regional Source Control Program

The Capital Regional District (CRD) Regional Source Control program has identified carpet cleaning operations as contributors of high strength wastes and non-biodegradable materials to the region's sanitary sewer systems. There are approximately 85 carpet cleaning businesses operating throughout the district. The majority of these businesses clean carpets using hot water extraction methods that generate high strength wastewater.

Current waste management practices and the volumes of wastes generated by the carpet cleaning sector are a concern because the wastes end up being discharged to the region's sanitary sewer systems and marine receiving environment. There have also been reports of carpet cleaning wastes being discharged to storm sewers, watercourses and sensitive nearshore environments.

Why is Effluent from Carpet Cleaning Operations a Concern?

- Liquid effluent from carpet cleaning operations may contain contaminants such as suspended solids, metals and other chemicals and substances in concentrations above the levels specified as restricted under the Sewer Use Bylaw.
- A significant portion of the suspended solids found in carpet cleaning waste is non-biodegradable carpet fiber and grit. This material can accumulate in sewage collection systems and contribute to abrasion of pumps and obstruction of screens. Material passing through the core area collection systems will tend to persist in the marine receiving environment.
- Some spotting agents contain hazardous chlorinated and non-chlorinated compounds. These materials may be classified as hazardous wastes that are harmful to sanitary sewer systems and the environment.
- Carpet cleaning waste contains high levels of contaminants that, if discharged to stormwater collection systems, can pose a significant risk to the environment.

Summary of Government Regulatory Requirements

a) Federal Regulations

The Canadian government has no specific requirements for the management of carpet cleaning sector wastes. However, regulations adopted under federal enactments such as the **Transportation of Dangerous Goods Act** contains provisions that apply to the general transportation and handling of hazardous materials. The **Canadian Environmental Protection Act** gives Environment Canada the power to regulate substances that have been declared toxic as defined in the Act.

b) BC Provincial Regulations

The **BC Spill Reporting Regulation** requires reporting of spills of any materials that could cause pollution. The regulation identifies the chemicals and the minimum spill quantities that must be reported to the Provincial Emergency Program (PEP).

The **BC Plumbing Code** specifies standards for the design and installation of plumbing systems.

The **Occupational Health and Safety Regulation** contains requirements for Workplace Hazardous Materials Information System (WHMIS) training, including chemical labeling, storage and record keeping.

The BC Ministry of Water, Land and Air Protection regulates the generation, storage, treatment, recycling and disposal of hazardous wastes to the environment through the **BC Hazardous Waste Regulation (BCHWR)** under the **BC Environmental Management Act**. Section 39 of the BCHWR restricts the deposit or discharge of hazardous waste into any waste disposal system operated by a municipality or other public authority. Such waste disposal systems include:

- sanitary sewers.
- storm sewers or watercourses.
- septage disposal facilities.
- solid waste landfills.

c) Regional Regulations

CRD Sewer Use Bylaw

Under the provincial **Waste Management Act**, the CRD is empowered to regulate the discharge of waste into its own sewers and into sanitary sewers owned and operated by member municipalities.

The CRD's Regional Source Control program is one of five liquid waste control programs that the CRD Board committed to during a 1992 referendum on liquid waste. On August 10, 1994, the CRD Board passed bylaw No. 2231, a **Bylaw to Regulate the Discharge of Waste into Sewers Connected to A Sewage Facility Operated by the CRD**. This bylaw has been recently amended as **CRD Sewer Use Bylaw 2922, No. 5, 2001**, and is generally referred to as the Sewer Use Bylaw. The main intentions of the bylaw are to protect:

- the marine-receiving environment.
- public health and safety.
- sewage works.
- wastewater treatment processes.
- biosolids quality.
- sewage sludge.

The bylaw also ensures:

- consistent requirements throughout the CRD.
- fair and balanced use of the CRD's facilities.
- promotion of responsible waste management practices.

Other Regional or Municipal Regulations

Other regulations that may apply to the handling and disposal of wastes from carpet cleaning operations within the CRD include:

- **Hartland Landfill Tipping Fee and Regulation Bylaw (CRD)** which regulates the disposal of wastes at the CRD's Hartland Road sanitary landfill.
- **CRD Bylaw 2827 – A Bylaw to Regulate Discharge of Septage into Septage Facilities Operating Under a Septage Services Agreement with the Capital Regional District** which deals with the discharge of septic tank contents into septage disposal facilities.
- Municipal storm sewer bylaws which regulate the discharge of wastes into municipal stormdrains and watercourses.
- Municipal plumbing bylaws which specify requirements for installation and maintenance of plumbing and drainage equipment.

Mandatory Requirements

In many cases, companies require a waste discharge permit to allow the discharge of industrial or commercial wastes into the sanitary sewer. However, the CRD's Sewer Use Bylaw also provides for the discharge of certain types of waste under industry-specific **Codes of Practice**.

A **code of practice** is a regulatory document, developed by the CRD, which contains mandatory sanitary sewer discharge standards for specific industrial, institutional or commercial sectors. Codes of practice set out minimum effluent treatment, equipment maintenance and record-keeping requirements for various sector operations. A business or organization operating under an approved code of practice does not require a waste discharge permit under the CRD Sewer Use Bylaw.

This section summarizes the regulatory requirements contained in the CRD Sewer Use Bylaw that apply to carpet cleaning operations. It is intended for information and guidance purposes only. If there is any discrepancy between this information and the Bylaw, the Bylaw will take precedence.

The CRD has determined that wastewater from carpet cleaning operations may contain **restricted waste** as defined in the bylaw. Businesses that discharge restricted waste must either operate under a waste discharge permit, a code of practice or an authorization.

Carpet cleaning operations that follow the **Code of Practice for Carpet Cleaning Operations** (Schedule "O" of the Sewer Use Bylaw) are authorized to discharge specific types of waste into the sanitary sewer without a waste discharge permit. The CRD reserves the right, if deemed necessary by the sewage control manager, to require any carpet cleaning operation to obtain a waste discharge permit. All other terms and conditions of the Sewer Use Bylaw apply to the discharge to the sanitary sewer.

Application

A carpet cleaning operation is defined as any commercial, industrial or institutional operation or a public authority engaged in the cleaning of hard and soft surfaces using: liquid extraction, bonnet, absorbent compound, shampoo or dry foam method equipment and procedures. Anyone working in the carpet cleaning sector must follow this code of practice if they want to use a sewer connected to a CRD sewage facility for disposal of wastewater other than that from toilets and washrooms.

Discharge Regulation

Carpet cleaning operations must not discharge into the sewer non-domestic waste that contains:

- prohibited waste: anything that could cause a fire or explosion, block the sewers, cause odours or corrode or damage the sewer system.
- total suspended solids in a concentration >1000 milligrams per litre.
- restricted waste as defined in the Bylaw other than chemical oxygen demand (COD) and biochemical oxygen demand (BOD).
- hazardous waste – means hazardous waste as defined in the **Waste Management Act**.
- uncontaminated water in quantities greater than 2 cubic meters per day (uncontaminated water takes up valuable sewer line capacity that could be used to handle wastewater that needs treatment).

Installation of Treatment Works

Carpet cleaning operations will be required to have the following treatment works installed by **July 1, 2003**. An operator of a carpet cleaning sector operation that generates wastewater on or after July 1, 2003 must:

- treat the waste water using a screen with holes not greater than 0.25 millimeters in width or length prior to discharge to sewer.
- dispose of collected solids in the garbage (solids collected in the screen must not be discharged to the sewer).

Off-Site Waste Management

As an alternative to disposal to the sanitary sewer system with the required treatment, offsite management is an option.

- Carpet cleaning wastes can be collected and transported to a waste treatment site that is permitted for the acceptance and treatment of these wastes.

Inspection and Maintenance of Treatment Works

The code of practice requires a minimum level of inspection and maintenance as follows:

- Filters or screens must be inspected on a daily basis for defects and replaced when defects are found.
- Hose connections, valves, filter gaskets, pumps and holding tanks must be visually inspected for leaks at least once per week.

Registration

All carpet cleaning sector operations regulated by this code of practice must register with the CRD Regional Source Control program and report any subsequent change in the status of their operation to the CRD. See Schedule "H" of Bylaw 2922, Code of Practice Registration form.

Spill Containment

Carpet cleaning operations are required to install spill containment and/or cap all floor drains in chemical storage areas to prevent the accidental discharge of carpet cleaning chemicals to the storm water collection system or a sanitary sewer.

Operators who find a leak or spill must:

- immediately prevent the spill from entering the storm water collection system.
- environment or sanitary sewer.
- stop the leak or clean up the spill immediately.
- repair the leak within 72 hours of the spill.

Record Keeping and Retention

The operator of the carpet cleaning operation must keep written records to show due diligence regarding inspection and maintenance activities and to demonstrate that requirements of the code of practice have been met. Please see inside the back cover for a sample record keeping form for carpet cleaning operations.

These records must be retained for a period of two years, be available to an inspector and include the visual inspection of:

- hose connections, unions, couplings and valves.
- filter gaskets.
- pumps.
- wastewater holding tanks.

Best Management Practices

Best management practices (BMPs) are activities developed to help operators reduce the amount of contaminants discharged to the environment, to comply with regulations and to improve overall waste management practices. BMPs are based on the pollution prevention (P2) principle, which emphasizes reducing or eliminating pollutants and toxic materials at their source rather than removing them from a mixed waste stream. Priority should be given to the practices highest in the following P2 hierarchy:

- avoidance, elimination or substitution of polluting products or materials.
- reduction in the use of polluting products or materials.
- elimination and reduction of the generation of polluting by-products.
- reuse and recycling of polluting by-products.
- treatment or containment of polluting residual by-products.
- energy recovery from polluting by-products.

The following BMPs will help carpet cleaning business operators decrease the amounts of contaminants entering the sewer system, comply with regulations, improve their operations and save money through application of pollution prevention principles. Operators are also encouraged to influence suppliers by requesting and purchasing less toxic alternatives or biodegradable cleaners, sanitizers and spotting agents and buying from suppliers who accept containers and unused materials back for recycling.

An example BMP is referenced under “Resource Materials” in Section 5.1. Important elements contained in these BMPs are summarized on the following page.

Spill Prevention and Response

Operators should ensure that adequate and secure storage is provided for carpet cleaning chemicals, sanitizers and spotting agents and should use containers that will not corrode or overturn. They should provide storage and secondary containment to prevent leaks and spills from draining to the sanitary or storm sewer systems. Develop a spill response plan that includes the following:

- The spill response plan should be posted in a conspicuous location and an appropriate amount of clean-up equipment and supplies must be kept in stock at all times.
- The operator should clean up any spills immediately.
- Proper signage should be posted in conspicuous locations displaying contact names and phone numbers in the event of an accidental discharge of prohibited or restricted waste to the sewer or directly to the environment.

Treatment Methods

Truck-Mounted Units

As required by the code, a screen with a maximum pore size of 0.25 mm placed between the cleaning wand and the truck holding tank will protect the equipment located within the truck against abrasion and obstruction. This will help extend the life of the truck-mounted carpet cleaning equipment and reduce the frequency of maintenance.

Screening the effluent prior to discharge will also reduce the chance of blockages within the plumbing system downstream of the discharge point and help reduce harmful solids from entering the Capital Region's sanitary sewer system.

Portable Units

Screening the effluent prior to discharge as required in the code will reduce the chance of blockages within the plumbing system downstream of the discharge point and help reduce harmful solids from entering the Capital Region's sanitary sewer system.

In areas where portable carpet cleaning units are used to clean very large areas such as office buildings, frequent cleaning of the screen will reduce the chance of a backup in the equipment. A fine screen will help protect the pump from excessive wear caused by exposure to grit and other solids.

Solids Management

Hot Water Extraction, Shampoo and Dry Foam Methods

- Once the carpet cleaning effluent has been screened, the captured solids can be placed in the regular garbage for disposal.

Bonnet Method

- Bonnets should have any carpet fibers removed and placed in the garbage prior to washing. The remaining solids left on the bonnet can be discharged to the sewer system unscreened, as the remaining solids will be smaller than the screen size.

Absorbent Compound Method

- Absorbent compound materials can be discarded in the regular garbage.

Cleaning and Sanitization Products

One of the most effective ways to reduce the effort required to clean a carpet is the immediate cleaning of spots by carpet owners. Educate the owners of the home/business that this is something that they can do to help reduce the need for hazardous spot removers and sanitizers. Carpet cleaning operators should avoid the use of chlorinated spotting agents as much as possible and use other brands that do not contain chlorinated compounds. Other options include the use of biodegradable cleaners as substitutes for their current cleaning products.

Water and Energy Use

Water comprises the largest volume of material used in the cleaning of carpets. Preliminary dry vacuuming of the surface to be cleaned is recommended. This will result in less water and energy used for effective cleaning. Use only enough water to do the job effectively.

Water consumption should be monitored to keep track of how much water is being used. If water consumption increases substantially there may be leaks in the system.

An increase in the temperature of preconditioners and rinse agents significantly enhances the efficiency of soil removal. This may reduce the amounts of cleaning products used and subsequently reduce detergent residues left after cleaning.

Stormwater Protection

The storm sewer system is not to be used as an alternative to sanitary sewer disposal. Municipal stormwater bylaws prohibit the discharge of carpet cleaning waste to the municipal drainage system. This drainage system includes: storm drains, creeks, ditches and any other municipal system for the transport of precipitation.

Municipal drainage systems can carry contaminants directly to creeks and the ocean. There is a potential for the chemicals and sediments in carpet cleaning waste to significantly affect both fresh and salt water habitats. In addition, federal and provincial regulations exist to prevent the discharge of substances that are harmful to aquatic life into stormdrains and watercourses.

Staff/Customer Training

- The Institute of Inspection, Cleaning and Restoration Certification (IICRC) is the main organization that provides training and certification of carpet cleaning operators in North America. The IICRC sets standards for proper cleaning methods and conduct of personnel operating within the industry.
- Information regarding the training of carpet cleaning operators can be obtained from the IICRC (see Section 5.0).
- Owners and operators should provide training in the practices identified in this document to all employees.
- All carpet cleaning operators must post permanent signs in conspicuous locations displaying contact names and phone numbers in the event of an accidental discharge to the sewer or directly to the environment.

Code Of Practice Implementation Plan

The implementation plan for CRD codes of practice includes the following components:

- education
- inspection
- monitoring
- enforcement
- administration
- review

Regional Source Control program staff will carry out activities related to each component in partnership with business owners in each code sector.

Inspections, Monitoring and Enforcement

Regional Source Control program staff may carry out inspections, examine records or other documents and take samples of effluent for analysis as specified under the Sewer Use Bylaw. Compliance sampling may also be conducted at any time on the effluent from operations regulated under a code of practice. Repeat sampling may be necessary if noncompliance with the code is suspected or high contaminant concentrations are detected in previous samples.

A cooperative, gradually-escalating approach to enforcement will be used for all Regional Source Control program codes of practice. This approach is established in an enforcement policy that has been approved by the CRD Board.

Where cooperative efforts to achieve compliance using the enforcement policy have failed, warnings and tickets of between \$50 and \$200 per offence may be issued under the **CRD Ticket Information Authorization Bylaw**. For more serious or continuing offences, fines up to \$10,000 per offence per day may be issued under the Sewer Use Bylaw.

For More Information

For more information on the Code of Practice for Carpet Cleaning Operations or the CRD Sewer Use Bylaw, please contact the Regional Source Control program at 250.360.3256 or visit the website at www.crd.bc.ca/sourcecontrol.

Other helpful sources of information include:

SUBJECT	CONTACT	TELEPHONE and/or WEBSITE ADDRESS
CRD Hotline		250.360.3030
Recycling Council of BC Hotline		1.800.667.4321
To report hazardous waste chemical spills	Provincial Emergency Program (PEP)	1.800.663.3456
Workplace Hazard Materials Information Systems (WHMIS)		www.hc-sc.gc.ca/hecs-sesc/whmis/
Ministry of Environment Environmental Protection Division Environmental Management Branch BC Hazardous Waste Regulation		www.env.gov.bc.ca/epd/hazwaste/regs/index.htm 250.387.1161
<i>Environmental Management Act</i>		www.env.gov.bc.ca/epd/main/ema.htm
Institute of Inspection, Cleaning and Restoration Certification		2715 East Mill Plain Boulevard, Vancouver, Washington 98661 1.800.835.4624 www.iicrc.org

Resource Materials

Institute of Inspection, Cleaning and Restoration Certification (November 1991) **Standard Reference Guide for Professional On-Location Cleaning of Installed Textile Floor Covering Materials**

Glossary of Terms

Biodegradable Cleaners are those that contain no toxic or biocidal elements or compounds and which are readily converted by a biological process into simple inorganic elements and compounds such as CO₂, H₂O, NH₃, etc.

BOD means biochemical oxygen demand being the quantity of oxygen utilized in the biochemical oxidation of organic substances under standard laboratory procedures.

Carpet Cleaning Waste means a combination of water carried liquid and solid wastes generated as a result of hard and soft surface cleaning activities by means of liquid extraction, bonnet, absorbent compound, shampoo or dry foam method equipment and procedures.

Carpet Cleaning Operation means any commercial, industrial or institutional operation or a public authority engaged in the cleaning of hard and soft surfaces, using, liquid extraction, bonnet, absorbent compound, shampoo or dry foam method equipment and procedures.

Compliance Sampling means the regularly scheduled sample collection to meet the permit or code of practice requirement. It is also sampling carried out to assess changes in works or practices that are instigated to correct violations or exceedances.

Contaminant means any substance, whether gaseous, liquid or solid, whether dissolved or suspended or any wastewater quality parameter that, when present above a certain concentration in wastewater:

- (a) injures or is capable of injuring the health or safety of a person;
- (b) injures or is capable of injuring property or any life form;
- (c) interferes or is capable of interfering with the proper operation of a sewer or sewage facility;
- (d) causes or is capable of causing material physical discomfort to a person; or
- (e) damages or is capable of damaging the environment.

Code of Practice means a regulatory document containing mandatory sanitary sewer discharge standards for specific industrial or commercial sectors.

Compliance Sampling is the regular scheduled sample collection to meet a permit or code of practice requirement. It is also sampling carried out to assess changes in works or practice which are instigated to correct violations or exceedances detected in regularly scheduled and/or audit sampling.

Discharge means to directly or indirectly introduce a substance into a sewer or sewage facility by spilling, disposing, abandoning, depositing, leaking, seeping, pouring, draining, emptying or by any other means.

Effluent means the liquid flowing out of a facility or household into a sewer system or water body.

Officer means a municipal sewage control officer appointed by the Board.

pH means the expression of the acidity or basicity of a solution as defined and determined by the appropriate procedure described in standard methods

Prohibited Waste means prohibited waste as defined in Schedule "A" to the Sewer Use Bylaw.

Restricted Waste means restricted waste as defined in Schedule "B" to the Sewer Use Bylaw.

Sanitary Sewer means a collection system for domestic, commercial, institutional and industrial wastewater or any combination thereof.

Spill Containment means any impervious structure that surrounds a container or works that is sufficient to hold the larger of:

- (a) 110% of the largest volume of free liquid in the container or works, or
- (b) 25% of the total volume of free liquid in storage.

Spill Response Plan means a written plan for the operator to respond to any spills at a carpet cleaning sector operation site. As a minimum, the plan must define the roles and responsibilities for spill response, contact names and phone numbers for the appropriate agencies and a checklist of all spill response equipment.

Stormwater means water resulting from natural precipitation from the atmosphere and which is intended to be transported in a storm sewer, a combined sewer or a watercourse.

Total Suspended Solids (TSS) means the amount of small particles that are suspended in the wastewater. Suspended solids contribute to the BOD and COD of wastewater and are known to have adverse effects on aquatic organisms.

Uncontaminated Water means any water excluding stormwater but including cooling water, condensed water and water from municipal waterworks or a private water supply to which no contaminant has been added as a consequence of its use or to modify its use by any person.

Wastewater means the composite of water and water-carried wastes from residential, commercial, industrial or institutional premises or any other source.