

Calgary



Mobile Power Washing

Wastewater Compliance Information



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1.0 Introduction

Pressure washing is the process of utilizing mechanical equipment to generate a high-pressured stream of water that is typically used to clear solid surfaces of debris, paint, oil, grease, and other contaminants. Many large businesses and private owners operate pressure washing equipment to clean vehicles & heavy equipment (belt loaders, crash attenuators, variable message boards etc.) parking lots, sidewalks, building exteriors, roofs, graffiti, and restaurant equipment, including hood filters. Depending on the process, used water can contain soaps, detergent, and other additive to help facilitate and improve cleaning efficacy. In addition to these contaminants, the wastewater generated after washing can also contain dirt, soil, grease, oil, paint, metals, and other contaminants depending on the surface being washed.

Wastewater from cleaning activities may have adverse effects on City of Calgary water infrastructure and the environment. **Discharge of this water to the stormwater system is prohibited under the City of Calgary Wastewater Bylaw (14M2012) due to the contaminated nature of the water.** Generated wastewater may contain a variety of pollutants including dirt, debris, cleaning additives such as soap, anti-spot agents, degreasing agents, engine cleaning agents as well as oil, grease, acid solution, solvents, paint chips, metals and food waste that can harm aquatic life and contaminate recreational sites and the environment.

Cleaning agents and soaps labelled “*bio-degradable*” and “*non-toxic*” may be a safer alternative to other brands but despite the labelling, they still have harmful effects on aquatic life and the environment. **As a result, wash water from mobile washing activities using environmentally safe additives are still prohibited from discharging wash water into the stormwater system.** Such activities performed by individual businesses may at quick glance seem negligible, but when applied across an industry, produce effects that are magnitudes stronger resulting in lethal consequences to aquatic life and our waterways.

The purpose of this Wastewater Information Summary document is to offer guidance in addressing the high-strength discharge from various mobile power washing activities. By following the recommendations outlined in this document, businesses will be able to lower the risk of fines for non-compliance with The City’s Wastewater Bylaw 14M2012 and reduce monthly surcharge fees (if applicable). **Non-compliance fines for discharging a prohibited substance begin at \$1,000 and can exceed \$3,000.** This document contains some federal, provincial and municipal regulations relevant to carpet cleaning practices as well as strategies to lower the risk to wastewater infrastructure and the environment.

2.0 Regulations

The regulations listed below are a summary of some, but not all, applicable guidelines and requirements that apply to power washing operations in the City of Calgary. This regulation list is for informational purposes only. Reference of the actual legislation document is the responsibility of every business owner and individual that engages in power washing activities.

2.1 The City of Calgary regulations

Wastewater Bylaw Number 14M2012 (from now on referred to as Wastewater Bylaw) is a City of Calgary bylaw that allows the municipality to regulate wastewater. This bylaw sets concentration limits for contaminants found within commercial wastewater. There are multiple sections addressing contamination limits within this bylaw. These sections include but are not limited to:

- **Schedule A**
 - This section lists substances that should not be released into the wastewater system in any concentration. An example of prohibited substances relevant to power washing operations may include:
 - Wastewater with a pH of less than 5.5 or greater than 10, or with a temperature exceeding 75 degree Celsius.
- **Schedule B**
 - This section states concentration limits for inorganic, metals and organic contaminants.
- **Schedule C**
 - This section outlines concentration limits for substances for which a surcharge fee will be applied if limits are exceeded.

Stormwater Bylaw Number 37M2005 (from now on referred to as Stormwater Bylaw) is a City of Calgary bylaw that allows the municipality to regulate stormwater, including discharges to the storm water collection system. Sections include but are not limited to:

- **Section 2 (t)**
 - “Prohibited Material” means any substance that may, directly or indirectly, obstruct the flow of water within the stormwater system or may have an adverse effect and includes, but is not limited to:
 - Soaps or detergents
 - Soil, sediment, waste, or other solid matter
 - Industrial waste (including empty chemical containers and drums, acids, caustics, sludge, and industrial sump water)
- **Section 4**
 - No Person shall Release, or allow to be Released, any Prohibited Material into the Stormwater System unless permitted in Subsection (3)

2.2 Provincial regulations

Environmental Protection and Enhancement Act supports and promotes the protection, enhancement and wise use of the environment while recognizing the need for economic growth and sustainable development as well as other factors.

Wastewater and Stormwater Regulation is an Alberta regulation under the *Environmental Protection and Enhancement Act* that addresses wastewater discharge and stormwater.

- **Section 7**
 - Owners of wastewater or stormwater systems are not permitted to use, or dispose of, substances into the wastewater or stormwater system in an amount, concentration, level or rate of release that may hinder the integrity, operation or quality of the treated materials within these systems.

The Alberta Water Act is an Alberta regulation that supports and promotes the conservation and management of water, including the wise allocation and use of water. This act addresses the use of water during processes such as power washing by introducing proper disposal and management actions.

2.3 Federal regulations

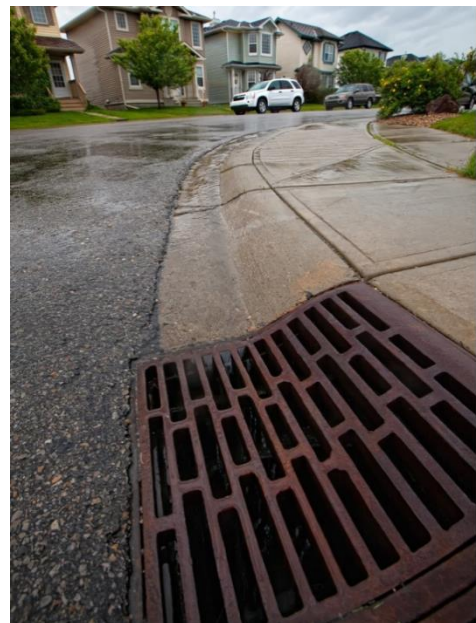
Fisheries Act is a Canadian regulation that focuses on protecting the productivity of commercial, recreational, and Aboriginal fisheries through regulating construction, impact and wastewater discharge.

Canadian Environmental Protection Act is one of the most important environmental laws in Canada as it protects the environment as well as the health and well being of Canadians. A major part of this Act is to sustainably prevent pollution by addressing wastewater discharge and dangerous chemical substance exposure.

3.0 Industry best practices

This section describes some industry best practices that can be implemented to reduce the impact power washing operations have on the environment, local community, and wastewater treatment facilities. Following the suggested practices can assist in meeting regulatory requirements, lowering wastewater surcharge fees as well as better protecting your business, community, and environment.

The practices and procedures outlined in this document emphasize eliminating pollutants at the source. Once pollutants are mixed into a single waste stream, reduction and separation of these pollutants becomes increasingly difficult and cost intensive.



3.1 Contamination limits

The primary contaminant of concern during mobile power washing operations is the amount of Total Suspended Solids (TSS) within the wastewater. Other wastewater parameters such as Hydrocarbons should also be monitored before wastewater is discharged to the wastewater system. Below are some concentration limits outlined in the City of Calgary Wastewater Bylaw:

Surcharge Parameter	Bylaw Limit
Hydrocarbons	50 mg/L
Total Suspended Solids (TSS)	300 mg/L

It is also common for wastewater in the mobile power washing industry to experience fluctuating pH values and high temperatures. Either of the conditions below would qualify as a prohibited substance and should not be released to the wastewater system in any quantity:

- Wastewater with a pH of less than 5.5 or greater than 10 and temperature more than 75°C.

It is important to note that the contaminants mentioned above are the most common substances found in the generated wastewater during power washing operations. Individual operations may have additional contaminants based on their chemicals and type of processes etc. It is the responsibility of each individual operation to ensure their wastewater meets all requirements of the Wastewater Bylaw.

3.2 Managing contaminants

Proper management of generated wastewater is an important aspect of mobile power washing operations that must be followed diligently. Wastewater may contain a variety of contaminants though the most common substances include non-biodegradable grit and various automotive chemicals, solvents, and oils. Furthermore, cleaning agents and other chemicals that may have been used to clean and de-grease surfaces will inevitably end up in the wastewater. Attention must be paid to the type of cleaning agents and other additives used as these chemicals can change the classification of wastewater from non-hazardous to hazardous, affecting the disposal options. The following are various wastewater management strategies that will assist in the safe disposal of generated wastewater.

Preparation for operation:

Before washing is conducted, it is important to thoroughly investigate the wash site to note the type and location of any storm drains. Furthermore, it is also imperative that potential contaminants are identified in order to properly dispose of the wash water. The following steps should be completed before, during and after the washing process:

- Understand the potential contaminants that will be found within the generated wash water. Remember to consider contaminants that can dislodge or leach from the washing surface as the wash water will act as an abrasive and carrying agent.
- Identify the proper disposal options for the wash water based on the potential contaminants that will be present in the water.

- Obtain any necessary approvals and permits for proper disposal:
 - Obtain an industrial permit if wash water will be disposed of at the Shepard Landfill Carwash Disposal if the zero-discharge disposal method is selected
 - Obtain a Hauled Wastewater Permit to transport the generated wash water to a wastewater treatment plant. Contact 311 for any addition information.

Note Wastewater generated at a wash site is permitted for disposal at the originating potable water source without requiring a permit. For example: Wash water originating from an establishment's facility, can be disposed at the facility following washing activities offsite.*

- Obtain the property owner's permission to access viable on-site disposal such as onto land or into the wastewater system by an on-site connection. It is important to retain proof of this permission in order to present it upon request of an inspector or appropriate authority.
- Identify the locations of all storm drains and points where wash water can enter the stormwater system. This will allow for proper strategies to be implemented in order to prevent wash water from entering the stormwater system.
- Determine how to contain and collect the generated wash water after use.

Minimizing pollutants within the area is an effective method to lower disposal costs and keep contaminants separate from the wash water. The following are strategies that can be followed in order to better prepare a site for washing by minimizing contamination:

- **Dry clean-up:** Consider using dry clean-up methods for surface pre-cleaning in order to fully or partly remove contaminants, preventing these contaminants from entering the wash water. Dry clean-up methods can consist of sweeping the wash area to collect and dispose of debris, dust, soil, and other solid matter that would prevent the wash water from being disposed into the stormwater system. Dry clean-up methods can also consist of using absorbents on contaminant spots and disposing into appropriate containers. This tactic assists in preventing liquid contaminants from mixing with the wash water. When using absorbents and other dry clean-up methods, it is important to be aware of the appropriate disposal methods for the used dry clean-up material. After use, these materials may become hazardous waste and may require special management.
- **Soaps and cleaning products:** Avoid using soap and other cleaning products as this will make wash water disposal more difficult. Furthermore, even though biodegradable soaps are less harmful than conventional soaps, biodegradable products still impact the environment and should be limited. Finally, use the minimal amount and least toxic detergents (phosphate free or biodegradable) whenever possible to complete the washing task.

3.3 Wastewater collection

Wastewater must be collected as it is prohibited to discharge the wastewater into the stormwater system. The following steps should be taken to ensure that the wastewater from a mobile washing facility is properly collected and managed:

- Identify and locate all storm drains within the area(s) where the wash water could potentially enter.
- Identify high and low drainage areas within the site and determine where the wash water will naturally collect (typically within a depression in the land). Storm drains within the collection and run-off area should then be covered to prevent the wastewater from entering the stormwater system.
- Common tools to cover storm drains and contain wash water may include:
 - Storm drain cover mats
 - Sandbags
 - Portable containment areas such as wash pools
 - Temporary berms
- Collect the wastewater. Common equipment used includes:
 - Vacuum systems
 - Wastewater recovery equipment
 - Absorbents
- After the wastewater has been collected, remove any visible solids or residue by sweeping the collection area, laying down absorbents and then sweeping or rinsing and collecting the wash water where applicable. Collecting the solids will prevent contaminants from entering the storm drain after the washing activities have been completed.
- Minimal residual amounts of non-hazardous wastewater that cannot be collected and that will not reach the storm drains can be left to evaporate. Wastewater that is considered hazardous (contains materials such as metals, oil, gas, etc.) cannot be left to evaporate and must be collected using an absorbent. The used absorbent should be disposed of accordingly.



3.4 Wastewater collection methods

The following are examples of devices that may be used to contain and collect wash water during pressure washing activities. It is important to note that when working with electrical equipment that the appropriate safety procedures are followed.

- **Berms:** Berms are used to prevent water from entering a storm drain by placing a protective barrier around the storm drain inlet. This allows the wash water to pool and be collected after the washing has been completed. Berms require a relatively smooth and flat surface in order to be effective. If berms are placed at the bottom of a slope or used to contain large amounts of water, failure may occur.

- **Storm drain covers and mats:** These devices are placed over a storm drain inlet creating a quick seal and preventing wash water from entering the storm drain. By temporarily sealing off a storm drain inlet, the wastewater will begin to pool and allow for easy collection. Examples of a storm drain cover or mat can include:
 - Magnetic vinyl mats
 - PVC drain covers
 - Polyurethane mats may occur.

These devices are commonly used with a vacuum system such as sump pumps, wet/dry vacuum, and vacuum pumps to collect the pooled wash water.

- **Inflatable pipe plugs:** These plugs are inserted into a pipe and inflated to create a tight fit or seal. These devices prevent wash water from entering a storm drain. By blocking the pipe of a storm drain instead of the grate, wash water will pool in the space between the grate and the pipe making collection simple for small amounts of water.
- **Containment pools:** A portable or temporary containment pool is ideal for vehicle or equipment washing. By placing the item in the containment pool, wash water is easily contained and prevented from entering any nearby storm system infrastructure. These pools vary in size and material and are often easy to assemble and use.
- **Bio-bags and bark bags:** These devices are placed around a storm drain to collect debris and large sediments. This method does not prevent water from entering a storm drain and only acts as a basic filter to remove large sediment particles and debris. Furthermore, these devices do not absorb liquids and cannot be used to prevent petroleum-based liquids from entering the storm system.
- **Vacuums and pumps:** These devices are used to collect the pooled wash water for proper disposal. Examples may include wet/dry vacuums, sump pumps, and vacuum pumps.

3.5 Wastewater disposal

There are two disposal options for wastewater generated from mobile wash facilities. Each disposal option is described in the following sections. It is important to remember that discharge of any wash water to the stormwater system is prohibited due to the variety of pollutants that can be found in the wash water (dirt, debris, cleaning additives etc.)

Zero discharge: Mobile wash facilities can choose to collect all solid and liquid waste from the cleaning process and dispose of it at the Shephard Landfill (Industrial) Carwash Disposal where it is treated before being discharged. With this method, businesses are permitted to use cleaning additives that are low phosphate, biodegradable and water-based if best management practices are followed, including secondary containment such as berms to control the seepage of polluting products. Access to the catch basins can be temporarily blocked using drain covers or mats strictly for the duration of the cleaning process, to contain the wash water to the site and prevent contamination to the stormwater system. Under all other circumstances, obstruction, restriction and prevention of access or flow of stormwater into the stormwater system is prohibited as per the Stormwater Bylaw Sec. 11 (3).

An Industrial Permit Application (form E 1982) must be completed to dispose of wastewater collected from the cleaning process at the Shepard Landfill (Industrial) Carwash Disposal area (6001 114 Avenue S.E). Be aware that the application may require you to complete an analytical form and clarify queries including the disposal of “dry cake” or solids from the mobile wash process. Please contact the team at industrialpermits@calgary.ca for questions or when applying for an Industrial Permit.

Regulated discharge to wastewater system: Wash water disposal on site, must be done via a private, indoor floor drain with permission from the property owner upon which the sewer inlet is located and not through a public manhole. Alternatively, a licensed hauler can be hired to transport the collected wash water to a designated City dump station for disposal to the wastewater system. Be aware that the wastewater must not contain any substances listed in Schedule A of the Wastewater Bylaw 14M2012 (prohibited substances).

3.6 Employee training and education

Spill response

It is important to train all staff in the correct steps and procedures to follow when dealing with a spill. Instructions should be posted in the workplace and appropriate spill response equipment should be made available. A spill kit should consist of:

- Protective clothing and equipment
- Absorbent materials such as sand, sawdust, absorbent pads, kitty litter, mops, brooms, and rags
- Brooms, shovels, and dustpans to clean up the absorbent materials
- Portable barriers or storm drain covers to prevent spills from entering the stormwater system

Secondary containment for stored chemicals is recommend as a last line of defense to prevent spills and leaks from reaching the wastewater or storm system.

During a spill it is important to act quickly to prevent wastewater from entering any nearby storm drain. Spills entering the stormwater system could have adverse effects on the local environment. The City of Calgary Wastewater Bylaw section 35 requires the person who released or allowed the release of wastewater to notify:

- The City by calling 311 as well as the Industrial Monitoring Group at img@calgary.ca
- The owner of the premise where the release occurred
- Any other person that may be affected by the release

For any spills that could harm the environment you will also need to report the spill to Alberta Environment.

4.0 Further Information

For more information regarding best management practices for power washing operations, please contact The City at 311 or the Industrial Monitoring Group at img@calgary.ca

5.0 Summary of mandatory and recommend actions

Required actions	
Regulation	Action
Wastewater Bylaw 14M2012	<p>22 (1) A person must not allow the release of any wastewater into the wastewater system that:</p> <ul style="list-style-type: none"> (a) contains a substance described in Schedule “A”: Prohibited Substances. (b) contains a substance that is above the approved concentration limits as described in Column 2 of Schedule “B” or Column 2 of Schedule “C”; or, <p>Does not comply with the requirements of this bylaw.</p>
Wastewater Bylaw 14M2012	<p>26 (1) The Director, Water Resources may require an owner to do any one or more of the following: (a) Install, operate, monitor and properly maintain at all times a wastewater pre-treatment system that is located at a directly accessible location on the upstream side of a monitoring access point at the owner’s premises</p> <p>(2) An owner who fails to install, operate, monitor, provide access to and properly maintain at all times a wastewater pre-treatment system as required by the Director pursuant to subsection (1) (a), (b) or (b.1) is guilty of an offence under this bylaw.</p> <p>(4) An owner of premises with a pre-treatment system installed in or on a premise must:</p> <ul style="list-style-type: none"> (b) maintain a maintenance schedule and record of each maintenance for every pre-treatment system installed at the premises for a period of two years, including records for disposal of waste residue
Wastewater Bylaw 14M2012 – Section 35	<p>A person who released or allowed the release of a substance must notify:</p> <ol style="list-style-type: none"> 1. The City by calling 311 2. The owner of the premise where the release occurred 3. Any other person that may be affected by the release

Recommended actions	
Type	Action
Employee Education	<ol style="list-style-type: none"> 1. Clean up spills immediately. 2. Use a broom and mop to clean the floor. 3. Do not overfill tanks.
Establishment Operations	<ol style="list-style-type: none"> 1. No discharging of prohibited substances (pH less than 5.5 or greater than 10 or a temperature exceeding 75°C). 2. Maintain records of pre-treatment maintenance and cleaning.
Accidental Spills and Releases	<p>Have a spill plan ready for:</p> <ul style="list-style-type: none"> • Indoor wet spills • Outdoor wet spills • Indoor or outdoor dry spills

Appendix A: Information Handout



Mobile Power Washing Wastewater Information Handout

Mobile power washing businesses must adhere to The City of Calgary Wastewater Bylaw 14M2012 and The City of Calgary Stormwater Bylaw 37M2005. Use these tips to comply with regulatory requirements, lower fees and protect your business, the community and the environment.

Considerations for wastewater collection

- It is prohibited to discharge wastewater into the stormwater system.
- Filter screens shall be installed at any water release point to capture all solid materials.
- Identify high and low points within the site and determine where the wash water will naturally collect.
- Common equipment used in the collection of wastewater includes:
 - Vacuum systems
 - Wastewater recovery systems
 - Absorbents
- Solids must be diverted to a solids waste stream unless the materials are considered hazardous, in which case they shall be sent to an appropriate treatment facility.
- Visit calgary.ca/hhw or contact 311 for the hazardous materials disposal requirements.

Management practices to safely dispose of generated wastewater

- Identify the proper disposal options for the wash water based on the potential contaminants
- Obtain all necessary permits and authorizations for proper disposal
- Identify all locations of nearby storm drains and points where wash water can enter the stormwater system
- Prior to washing, confirm equipment is in proper working order, free of leaks and damage

Wastewater Bylaw 14M2012 Fines for Non-Compliance

18(1) Failing to dispose of wastewater from a premises into either the wastewater system or a private wastewater system

Specified Penalty \$1000

22(1)(a) Releasing, or allowing the release of wastewater that contains a prohibited substance into the wastewater system

Specified Penalty \$3000

22(1)(b) Releasing, or allowing the release of wastewater into the wastewater system that contains a substance that is over the concentration limit as described in Column 2 of Schedule "B" or Column 2 of Schedule "C"

Specified Penalty \$3000

43(6) Failing to comply with a Remedial Order

Specified Penalty \$1000

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How to dispose of wastewater

Zero Discharge:

- All solid and liquid waste from the cleaning process is to be disposed of at the Shephard Landfill (Industrial) Car Wash Disposal, where it is treated before being discharged.
- An industrial permit application must be completed to dispose of wastewater at the Shephard Landfill (Industrial) Carwash Disposal.

Discharge to the Wastewater System

- Drains connected to the Wastewater System (i.e. floor drains and sinks) may be used to dispose of wastewater if the following conditions of the Wastewater Bylaw (14M2012) are met:
 - Does not contain any substances listed in Schedule A Prohibited Substances;
 - Does not exceed any concentrations listed in Schedule B Restricted Substances and Schedule C Surcharge Substances
- If the wastewater exceeds City of Calgary Wastewater Bylaw limits, the wastewater can be disposed of at other waste treatment facilities where industrial wastewater is permitted.

What to do if you have an accidental release

In the event of an unintentional release it is important to act quickly to prevent the material from entering the wastewater or stormwater system.

The Wastewater Bylaw section 35 under "Release Reporting" requires the person who released or allowed the release to notify:

- The City of Calgary by contacting 311 as well as the Industrial Monitoring Group at img@calgary.ca
- The owner of the premise where the release occurred.
- Any other person that may be affected by the release.

For any spills that could harm the environment you will also need to report the spill to Alberta Environment.

For more information please contact 311 or the Industrial Monitoring Group at IMG@calgary.ca