
EROSION AND SEDIMENT CONTROL LARGE LOT DEVELOPMENT (1,000M² OR MORE)*

UNDERSTANDING THE ISSUE

Land development activities such as clearing land, grading slopes, excavating, and stockpiling of materials can lead to the erosion of soils and deposition of sediment in the City's storm sewer system or nearby watercourses. In urban environments, construction sites are the primary cause of exposed soils. Sediments that are washed off areas of exposed soil during rainy periods or are contained in water that is pumped from excavations enter the storm sewer system. Storm sewers are connected to the nearest body of water where contaminants can be toxic to aquatic life and the environment.

Sediments from construction sites may also plug catch basins and restrict flows in sewers creating local flooding conditions and increase the costs of maintaining the sewer system.

Other construction site pollutants that may enter the storm sewer system include concrete, stucco, paints, adhesives, solvents, cleaners and drywall mud/compound. For further information see Bulletin 2002-001-EV, Construction Site Wastes.

DOES THIS BULLETIN APPLY TO YOUR PROJECT?

*Sites which are 1,000m² or more, or have an excavation depth greater than one storey, must follow the requirements and criteria listed below. Refer to Bulletin 2002-002-EV for Sites smaller than 1,000m² with excavation depths of one storey or less.

ESC PLAN REQUIREMENTS

The ESC Plan must be prepared and submitted as a part of the Building Permit application to the City for approval.

The Erosion and Sediment Control Plan shall include, but not limited to, the following:

1. A phased construction schedule that limits the extent of tree or vegetation removal and soil disturbance to those areas immediately required for site construction.
2. Details showing site access and measures to address soil tracking.
3. Plans and specifications to describe the works required to control and treat TSS and pH in run-off water from the construction site and the location of the discharge to the City sewer system. The discharge location must be easily accessible.
4. Must include measures to reduce sediment run-off from the Site.
5. A program to remove mud, dirt, and debris from City property.
6. Storm drain inlet protection (i.e., sediment sacks).
7. Sampling and analyses required to demonstrate compliance with the applicable Bylaw.

EROSION AND SEDIMENT CONTROL (ESC) MONITORING CRITERIA

Applicable Bylaw	Sewer and Watercourse Bylaw No. 8093 (the Bylaw)
pH Requirements	Discharge water to have a pH of 6.0-9.0
Turbidity Requirements	Discharge water Total Suspended Solids (TSS) not to exceed 75mg/L.
Environmental Monitoring	Must be completed by a Qualified Person (QP). Acceptable designations include Applied Science Technologist (ASc.T), Environmental Professional in Training (EPt) or EP, BC Certified Erosion and Sediment Control Lead (CESCL) or equivalent, Engineer in Training (EIT), Professional Engineer (P. Eng), and Biologist in Training (BIT) or higher.
Monitoring Frequency	Dry Season (May-Sept): Bi-weekly Wet Season (Oct-Apr): Weekly Additional monitoring is required within 24 hours of a significant rainfall event (SRE) (>25 mm in 24 hrs). Additional monitoring is not required if the SREs are within 48 hours of each other. Discharge water sampling can cease once the Site is connected to the City sewer system or with written approval from Environmental Protection. Monitoring of best management practices should continue for the duration of the project. Monitoring frequency can be modified upon agreement in writing between the City Inspector and the Contractor or QP.
Sampling Parameters	Samples will be submitted for laboratory analysis of TSS if field testing results exceed the Trigger Value of 45 nephelometric turbidity units (NTU)** The Environmental Monitor may be permitted to submit a Site specific calibration curve to the City if analytical results are consistently below 75 mg/L. If the field measurements exceed 45 NTU or if the pH is less than 6.0 or greater than 9.0, the Contractor must cease discharge until appropriate remedial measures have been undertaken.
Report Submission	Templated report submitted within 48 hours of the monitoring event for Sites which are out of compliance. Templated report submitted within 7 days of the monitoring event for Sites which are in compliance. If laboratory analysis is required, the analytical results must be submitted within 7 calendar days. Reports are to be submitted to: environmentalprotection@vancouver.ca
Site Maintenance	No sediment-laden water from the work site shall be pumped out or otherwise discharged directly to a storm sewer system, water course, or other drainage system in such a manner as to bypass the sediment control system. Deficiencies identified by the Environmental Monitor are to be resolved as soon as practically possible.
Removal/Alterations of Treatment Works	No changes to the water treatment system are to be made without the City's Environmental Protection approval. A written request must be approved by Environmental Protection. A Site inspection may be required prior to approval.

**Sites that do not have discharge exceeding 45 NTU may not need to submit samples for laboratory analysis. However, if the Environmental Monitor deems sample submission necessary, samples below the trigger value may be submitted for laboratory analysis.

ENFORCEMENT

Site Inspections

City Inspectors have right of entry to carry out random inspections and confirm compliance with applicable bylaws and bulletins.

By-Law Enforcement

Section 3.2 of the Bylaw, states that “No person shall, directly or indirectly, place or discharge or cause to be placed or discharged into the storm drainage system or any watercourse any water or waste having the following characteristics:

- A. “water or waste having a total suspended solids content of more than 75 milligrams per litre;
- B. waste which prior to the discharge into a storm sewer or watercourse, has a pH lower than 6.0 or higher than 9.0; and
- C. any deleterious substance as defined in Section 34(1) of the Canada Fisheries Act.”

Section 2.17 of the Bylaw states, “During building operations or when the building sewer is being re-laid, public sewer connections shall not be used for drainage purposes unless temporary sumps to catch sediments and strainers to catch floating solids have been installed to the satisfaction of the Inspector or the City Engineer.”

Article 8.2.3.6 of Division B of the 2014 Vancouver Building Bylaw, No. 10908, states:

1. “Public ways adjacent to projects shall be cleaned and maintained to the satisfaction of the City Engineer, the General Manager, Real Estate and Facilities Management, or the General Manager, Park Board, as the case may be;
2. No person shall place or leave construction materials, overflows, debris, excavated materials or mud on public ways or City property; and
3. No person shall dump or discharge waste water from construction activities or vehicle wash water from concrete trucks or dump trucks on public ways or City property.”

Failure to implement an Erosion Sediment Control Plan or comply with the Erosion Sediment Control Criteria may result in a **Stop Work Order** or other legal action under the Sewer and Watercourse Bylaw No. 8093.

Section 3.2(1) of the Sewer and Watercourse Bylaw No.8093 states that “No person shall cause or permit contaminated water or wastewater to be discharged into a storm sewer”. Violators are subject to fines of up to \$10,000 per offence.

For further information contact Environmental Protection at 311, 604.873.7000, or at environmentalprotection@vancouver.ca

(Original signed)

Jennifer Mayberry, B.Sc., LEED AP BD+C
Manager
Environmental Services



EROSION AND SEDIMENT CONTROL MONITORING REPORT

Site COMPLIANT with City of Vancouver environmental requirements? Y N
 If No, was discharged ceased? _____ Y N

Site Inspection Information

Date: _____ Time of Arrival: _____ Time of Departure: _____
 Location (civic address): _____

Weather Conditions

At Inspection: _____ 24 hrs Prior to Inspection: _____

Environmental Monitoring Firm

Monitor Name/Company: _____
 Monitor Phone: _____

Project Information

Development Company: _____
 Construction Contractor: _____
 Project Name: _____

City of Vancouver Report Submission

Template report must be submitted within 48 hours of monitoring event for Sites which are out of compliance, with analytical results to follow.
 Template report must be submitted within 7 days of monitoring event for Sites which are in compliance.

Reports are to be submitted to: environmentalprotection@vancouver.ca

Inspection Observations

ESC Measure	Inspected Y/N or Not Applicable (N/A)	Maintenance Required	Comments
Perimeter Control	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	

Site Entrance and Traffic Areas	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Catch Basin Inlets	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Disturbed Surface Protection (exposed surfaces, stockpiles)	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Other	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Other	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Off-Site Water Discharge			
pH Treatment	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Flocculant	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Other	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	
Other	Y <input type="checkbox"/> N <input type="checkbox"/> N/A <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	

Outstanding Issue From Last Inspection	Completed (Y/N)	Comments
	Y <input type="checkbox"/> N <input type="checkbox"/>	
	Y <input type="checkbox"/> N <input type="checkbox"/>	
	Y <input type="checkbox"/> N <input type="checkbox"/>	
	Y <input type="checkbox"/> N <input type="checkbox"/>	
	Y <input type="checkbox"/> N <input type="checkbox"/>	

Additional Comments: _____

Sampling Data

Sample ID	Field pH (6-9)	Field Turbidity (NTU)	TSS Submitted*?	Pass/Fail	Comments
			Y <input type="checkbox"/> N <input type="checkbox"/>		
			Y <input type="checkbox"/> N <input type="checkbox"/>		

*TSS to be submitted if turbidity is 45 NTU or greater

Turbidity meter last calibrated: _____

pH meter last calibrated: _____

Additional Comments: _____

New Items Requiring Immediate Action

Item of Concern	Corrective Action Required	Due Date

Additional Comments: _____

Photos

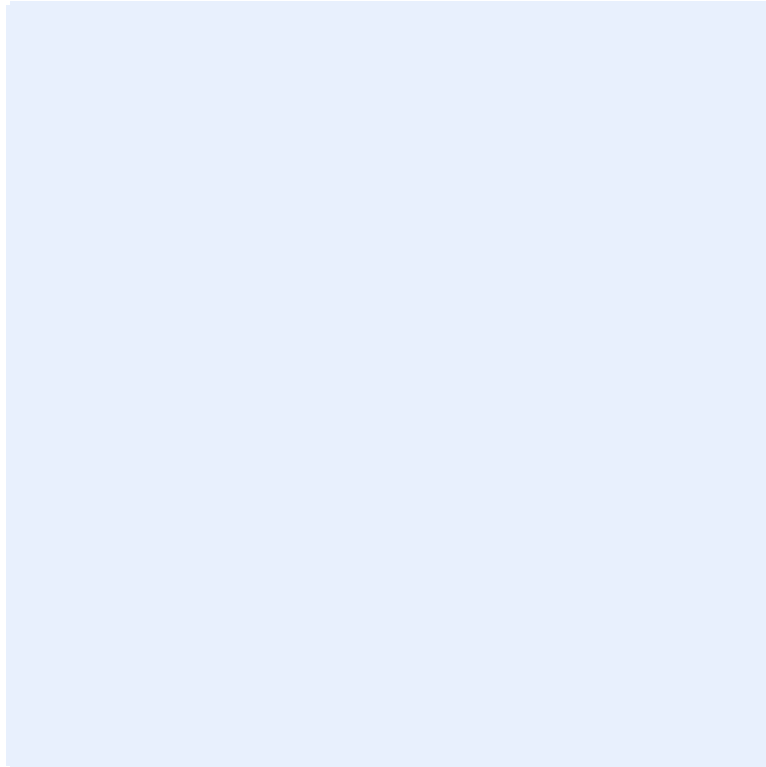


Photo 1: _____

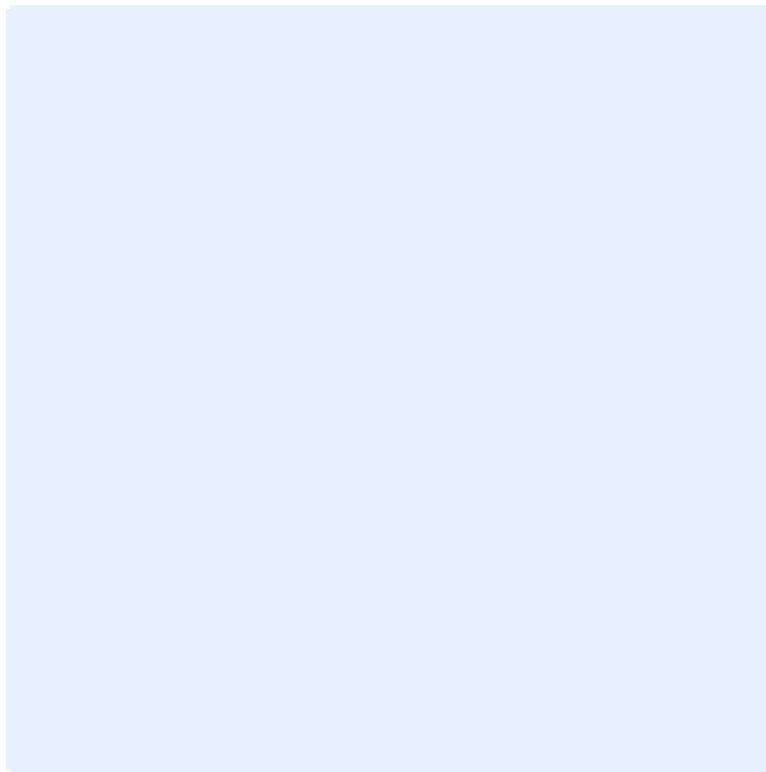


Photo 2: _____

Photos

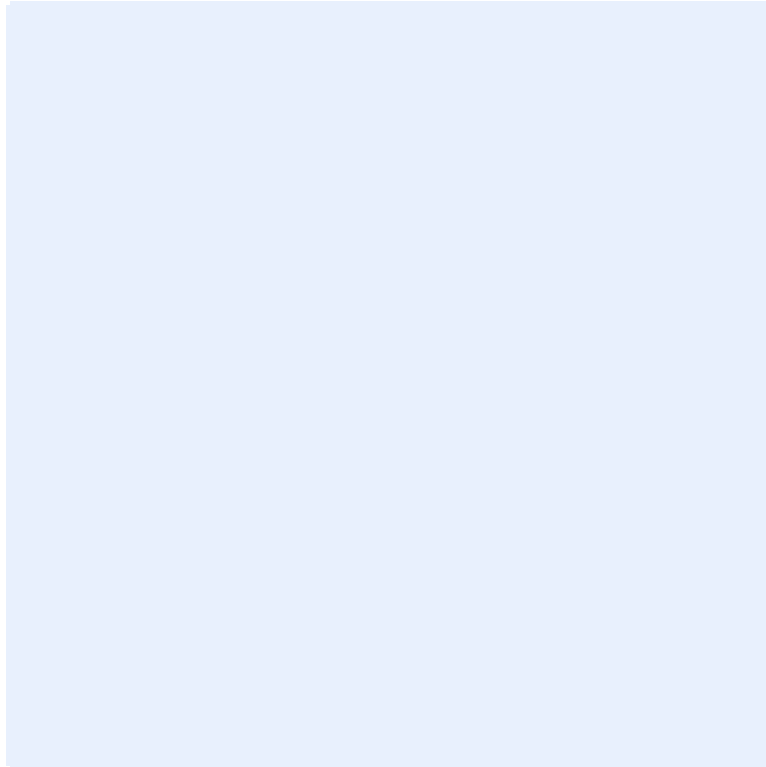


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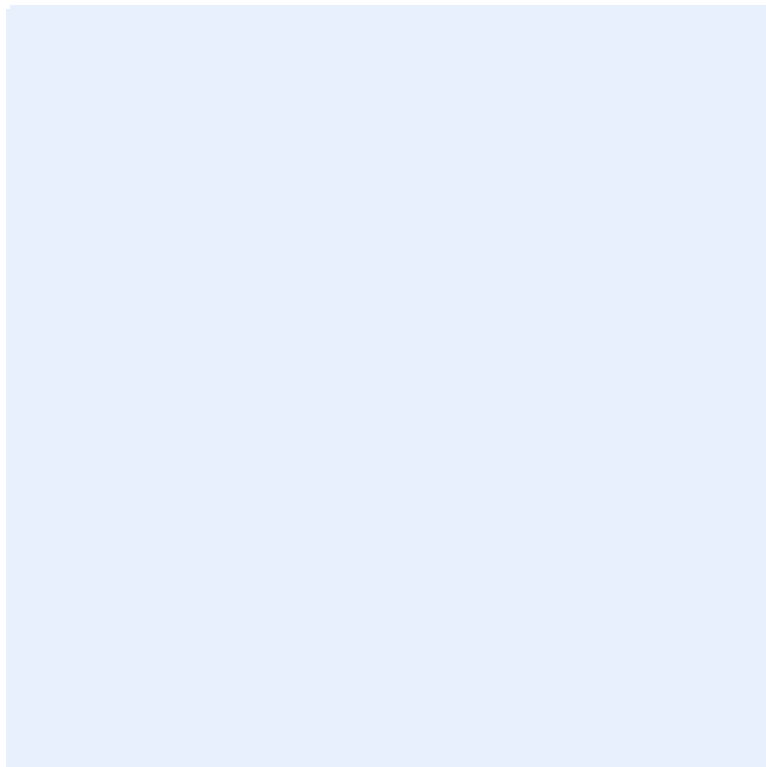


Photo 4: _____

Photos

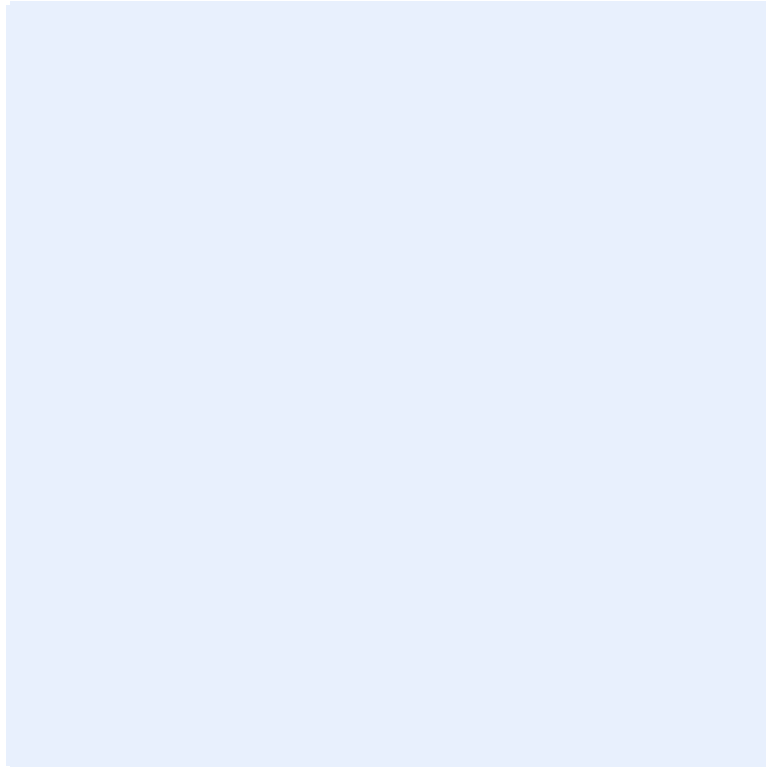


Photo 5: _____

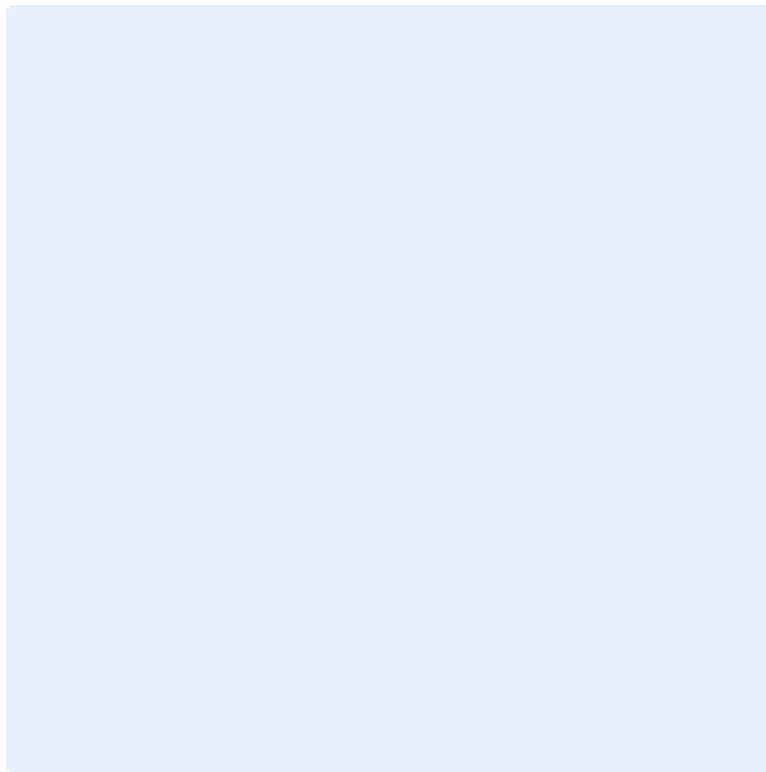


Photo 6: _____