THE UNIVERSITY OF BRITISH COLUMBIA

Risk Management Services

Department: Environmental Protection	**Pollution Prevention:** **Sanitary and Storm Sewers**
SOP Control Number: *Committee.ENV.Procedure.002*	Revision Date: February 1, 2019 *Replaces SOP from June 26, 2014* Retention: *Current + 3 years* Revised by: Jamiann Questa
Approved by: Environmental Protection Advisory Committee	Signature: See below signature block.

I. SCOPE

This procedure applies to planned and routine discharges to the storm or sanitary sewers from research, operations and maintenance activities, or minor works construction activities at the Point Grey campus of the University of British Columbia (UBC) and includes spill response and reporting responsibilities. It does not address construction projects and activities that require a project-specific Erosion and Sediment Control Plan or Stormwater Pollution Prevention Plan as part of a Development Permit (DP) authorized by Campus and Community Planning (C&CP).

II. PURPOSE

The purpose of this procedure is to prevent the pollution of UBC's storm and sanitary sewer systems and the environment by vetting routine and planned discharges from research, operations, and maintenance activities. Following this procedure will also facilitate compliance with the applicable environmental requirements and guideline.

III. ORGANIZATIONAL UNITS AFFECTED

The procedure applies to all UBC Point Grey campus organizational units, including activities resulting from research laboratories, operations, and construction activities that do not already fall under the C&CP DP process.

IV. KEY DEFINITIONS

UBC adopts the standard definitions below as outlined in the City of Vancouver Sewer and Watercourse Bylaw No. 8093 and the British Columbia Spill Reporting Regulation.

Clear-water waste means water that does not contain wastewater or stormwater;

Domestic wastewater means the wastewater and water carried wastes which result from normal human living processes and are produced from non-industrial, non-institutional or non-commercial activities;

Industrial wastewater (i.e. process water or non-domestic wastewater) means all wastewater and water carried waste and, for greater certainty, includes all wastewater from any processing, industrial, institutional and commercial activities but does not include domestic wastewater;

Sanitary sewer means a sewer which carries only sanitary waste or wastewater but not intended to carry storm water;

Sewer means a pipe or conduit (i.e. conveyance infrastructure) that carries wastewater, stormwater, or clear-water waste, owned or otherwise under the control or jurisdiction of UBC or Metro Vancouver;

Storm sewer means a sewer which carries only stormwater, clear-water waste and uncontaminated water, but is not intended for wastewater;

Stormwater means drainage water resulting from rainfall, snowfall or groundwater but does not mean water containing wastewater;

Wastewater means the wasted water of the community derived from human, animal, mineral or vegetable sources, including domestic and industrial wastewater, but does not include stormwater or uncontaminated water.

Body of water includes both marine and fresh bodies of water whether or not they usually contain water or ice, as well as streams, lakes, ponds, rivers, creeks, springs, aquifers, ravines, gulches, wetlands, and glaciers. *The requirement to report a spill of a listed substance of any quantity also includes spills that enter a ditch that is not self-contained and connects to a body of water*.

V. BACKGROUND

The UBC Point Grey campus, including its residential (University Neighbourhoods) and operational areas in South Campus, is located in Electoral Area A. Metro Vancouver acts as the local government for Electoral Area A, providing certain key services. Electoral Area A is the unincorporated area of the regional district and one of 23 member entities of Metro Vancouver. Unlike other local governments, under provincial legislation, UBC has authority for land use planning and development on the Point Grey campus within Electoral Area A.

UBC operates a separated sewer system, whereby the stormwater and sanitary systems and flows remain separate through distinct piping infrastructure. UBC owns and operates each of these sewers (i.e. conveyance infrastructure) within its boundaries. Outside of these boundaries, the sewers are either owned by the City of Vancouver, Metro Vancouver, or the Ministry of Transportation and Infrastructure (MOTI).

The sanitary sewer flows are currently delivered to Metro Vancouver's Iona Wastewater Treatment Plant, while the storm sewer flows collected by catchment are released via four discharge points (or outfalls), including:

Catchment	Location Description	Outfall (i.e. Discharge Point)	Outfall Owner
North	Drainage area includes the northern half of campus (an area approximately west of Wesbrook Mall and north of Agronomy Mall)	Spiral Drain	Metro Vancouver
16th Avenue	Drainage area includes an area along 16th Avenue near SW Marine Drive	Botanical Garden Creek	Metro Vancouver
West or Trail 7	Drainage area includes Thunderbird Park, Hawthorn Place, Totem Park Residence, and the UBC Botanical Garden	Trail 7 stream	Metro Vancouver
South	Drainage area includes the southern areas of campus including Acadia Park, Hampton Place, and all of South Campus	Booming Grounds Creek	MOTI ditch lines to Metro Vancouver outfall

a. Regulatory Context

The province is responsible for the protection, management and conservation of B.C.'s water, land, air and living resources. In order to do this, the province establishes and administers a broad suite of regulatory requirements. The Environmental Management Act (EMA) is one of the key laws governing environmental protection and management in British Columbia.

Storm Sewer

It is prohibited to deposit or permit the deposit of any substance that is likely to be rendered deleterious to aquatic habitat (e.g. fish, organisms, plants, etc.). Discharges to the storm sewer must comply with the following regulations and guidelines:

- Fisheries Act
- City of Vancouver Sewer and Watercourse Bylaw No. 8093
- BC Hazardous Waste Regulation (2009), Schedule 1.2 "Standard for discharges to the Environment or to Storm Sewers"
- BC Contaminated Sites Regulations, Schedule 6 "Generic Numerical Water Standards"
- CCME Water Quality Guidelines for the Protection of Aquatic Life
- BC Water Quality Guidelines (Criteria)
- Metro Vancouver's Municipal Water Use Guidelines
- BC Spill Reporting Regulation (2017)

Sanitary Sewer

Discharges of hazardous substances to the sanitary sewer can compromise the health and safety of the staff managing the drain system. These and other materials, such as oil and grease, may also damage the operation of the sewers and sewage facilities, adversely impacting the efficiency and cost-effectiveness of the wastewater treatment. Discharges to sanitary sewers are regulated by the following:

- Metro Vancouver Sewer Use Bylaw No. 299
- BC Hazardous Waste Regulation, Schedule 1.2 "Standard for discharges directed to municipal or industrial effluent treatment works"
- Transportation of Dangerous Goods Regulations
- Globally Harmonized System (GHS) and Workplace Hazardous Materials Information System (WHMIS)
- BC Spill Reporting Regulation (2017)

Metro Vancouver's Sewer Use Bylaw No. 299 specifically regulates pollutants that are discharged into sanitary sewers. This bylaw aims to protect the environment as well as human health and safety. It specifies prohibited and restricted discharges, and includes monitoring and permits requirements with respect to non-domestic discharges.

VI. Regulatory Implications for Non-Compliance

Failure to comply with the EMA and associated environmental regulations can result in convictions, monetary penalties (fines), and reputational damage to the University.

VII. REPORTING ENVIRONMENTAL EMERGENCIES AND CONCERNS

At UBC, all environmental emergencies, incidents (e.g. accidental spills), and concerns must be promptly reported to Risk Management Services (RMS) Environmental Protection.

Report incidents via RMS pager system at (604) 827-0755 or by directly phoning the main office (604) 822-2029.

RMS Environmental Protection staff will then provide the initial report to PEP or Environment Canada and will further investigate the incident, coordinate any remediation efforts, as necessary, and close out the reporting.

Should RMS Environmental Protection be unreachable for any reason, UBC staff or the spill owner MUST report the spill directly to the 24-hour Emergency Management BC provincial reporting hotline:

1-800-663-3456

The BC Spill Reporting Regulation states that:

"If a spill occurs or is at imminent risk of occurring, a responsible person (spiller) must ensure that the actual or potential spill is immediately reported to the **Provincial Emergency Program** (PEP)/Emergency Management BC (EMBC) by calling 1-800-663-3456. An "Initial Report**"** must be made immediately if any of the following instances occur:

1. A spill of any substance that causes adverse impacts (to the environment, water, property, or human health and safety);

2. If the volume spilled is equal to or greater than the minimum quantity outlined in the Spill Reporting Regulation;

3. A spill, or risk of a spill, of any substance near or on water (if the spill enters or is likely to enter a body of water).

If the spill enters, or is likely to enter, a body of water, it is reportable regardless of the quantity.

An "End-of-Spill Report" is also required if instances # 2 and # 3 above apply.

a. Examples

The following are relevant examples of types of water pollution incidents (either environmental emergencies or past/ongoing concerns):

- Something being spilled or leaking into a water body, storm drain, ground water
- Fuel, oil, manure, paint, hazardous waste or pesticides
- Impacts to water may include litter in water, algae or oily sheen
- Fisheries violations (damage to fish habitat)
- Impacts to Crown Land related to work in a creek/stream or foreshore work

VIII. ROLES AND RESPONSIBILITIES

Discharges from operation and maintenance activities:

Examples: pipes cleaning, surface cleaning, water mains disinfection, swimming pools/water features cleaning and emptying, chemical/neutralization and dilution tanks, etc.

Generators planning to discharge non-domestic wastewater to the sanitary sewer system must apply for approval to discharge from RMS Environmental Protection by completing the "UBC Planned Discharge to the Sanitary Sewer from Operation, Maintenance and Construction Activities" (Attachment 1). Complete and submit this form if discharges do not meet the Sewer Use bylaw No. 299 restrictions, e.g. large volume/high flow (pools, water features, fountains), high temperature (processes), potential contaminants (cleaning), etc.

RMS Environmental Protection will assess the waste stream for its fitness for sanitary sewer discharge and work with Metro Vancouver to ensure the proposed discharge is permitted, where required, or will determine that the proposed discharge needs to be disposed as hazardous waste. RMS Environmental Protection may require that the proposed discharge be tested as part of the assessment (testing costs are the generator's responsibility).

The generator will have to provide RMS Environmental Protection no less than seven working days prior to the anticipated discharge information regarding:

- Total expected volume of proposed discharge and discharge rate

- Proposed discharge location
- Any chemicals additives contained in the proposed discharge; their nature and concentration.
- Safety Date Sheets (SDS) for any hazardous material(s) to be mixed with the proposed discharge including material's concentration.
- Frequency of generation of the discharge (for planned routine discharges).

Discharges from laboratory research activities:

Small amounts of aqueous waste solutions can be disposed of via the sanitary sewer, provided that:

- The aqueous waste solution does not exhibit any of the hazardous characteristics (ignitability, corrosivity, reactivity, or toxicity) as defined by BC Hazardous Waste Regulations, 2009; and
- Is not prohibited or restricted by the Metro Vancouver Sewer Use Bylaw 299.

Laboratory personnel must complete the "Aqueous-Waste-Profile" and RMS Environmental Protection will determine if laboratory liquid waste streams can be disposed of via sanitary sewers, under specified conditions. ***Dilution of waste for meeting concentration limits is not permitted*.** Refer to the RMS website for the Excel file, per links below.

http://rms.ubc.ca/environment/pollution-prevention/sanitary-sewers/

http://riskmanagement.sites.olt.ubc.ca/files/2018/06/Aqueous-Waste-Profile.xlsx

IX. ATTACHMENTS

Attachment 1: UBC Planned Discharge to the Sanitary Sewer from Operations, Maintenance, and Construction Activities

Attachment 2: Spill Reporting - Prescribed Substances and Quantities for Immediate Spill Reporting and Initial Report Content

X. MANAGEMENT APPROVAL

Name, Title, Department	Date	Signature
Ron Holton Chief Risk Officer Risk Management Services	March 28/19	
Shelley Kayfish Director Campus Operations & Risk Management [UBC Okanagan]	apr 8/19	
Dean Kuusela Associate Director Office of Research Services		April 1/2019
John Metras Associate Vice-President Facilities	MAR 28/19	
Andrew Parr Managing Director Student Housing & Hospitality Service	APRIL 3/19.	
Dr. Pam Ratner Vice-Provost and Associate Vice-President, Enrolment and Academic Facilities	April 1, 2019	
Greg Scott Managing Director Building Operations	Mar 28/19	
Kavie Toor Senior Director Facilities, Recreation, and Sport Partnerships	APRIL 1/19	
Michael White Associate Vice President Campus and Community Planning	Apr 1/19	
David Woodson Managing Director Energy and Water Services	APRIL 2/19	

Attachment 1: UBC Planned Discharge to the Sanitary Sewer from Operations, Maintenance, and Construction Activities

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Risk Management Services

Planned Discharges to Sanitary Sewer from Operational, Maintenance & Construction Activities

Example of discharges that may not meet Sewer Use bylaw: large volume/high flow (pools, water features, fountains), high temperature (processes), potential contaminants (cleaning), etc.

Please complete this form and submit to Risk Management Services, Environmental Protection Advisor, ligia.gheorghita@ubc.ca within 7 working days of the planned discharge.

Requester/Discharger/Facility:
• Contact Name:
• Email & Phone Number:
• Department /Building /Room #:
Date Discharge Request Submitted:
Date(s) of Expected Discharge:

Discharge Details

Type of liquid to be discharged	
Discharge location (Sanitary manhole # and location, attach map)	
Purpose of discharge	
Discharge volume (L or m^3)	
Duration of discharge (# of hours/days)	
Discharge rate (L/min or L/s) (Note: Maximum discharge rate per Metro Vancouver authorization 6 L/s)	
Discharge is capable of obstructing the flow or causing interference (describe) Examples: earth, sand, ash, glass, tar, asphalt, plastic, wood, waste portions of animals, fish or fowl, solidified fat, etc.	
Discharge has temperature of 65°C or more (provide temperature)	
Discharge contains conventional contaminants: • Biochemical Oxygen Demand (BOD) • Total suspended solids (TSS) • Oil and Grease (provide details & concentration in mg/L)	
Discharge contains large particles (>0.5 cm)	
Discharge contains chemicals/contaminants (provide details) • Safety Data Sheet (SDS) • Quantity of chemical in use • Dilution factor of chemical in use • pH of chemical solution	
Discharge contains biological agents (describe)	
UBC Utilities EWS & BOPS Mech Trades have been informed, as necessary (provide details)	

Attachment 2: Spill Reporting - Prescribed Substances and Quantities for Immediate Spill Reporting and Initial Report Content

Prescribed Substances and Quantities for Immediate Spill Reporting[1]

Item	Column 1 Substance Spilled	Column 2 Specified Amount
1	Class 1, Explosives as defined in section 2.9 of the Federal Regulations[2]	Any quantity that could pose a danger to public safety or 50 kg
2	Class 2.1, Flammable Gases, other than natural gas, as defined in section 2.14 (a) of the Federal Regulations	10 kg
3	Class 2.2 Non-Flammable and Non-Toxic Gases as defined in section 2.14 (b) of the Federal Regulations	10 kg
4	Class 2.3, Toxic Gases as defined in section 2.14 (c) of the Federal Regulations	5 kg
5	Class 3, Flammable Liquids as defined in section 2.18 of the Federal Regulations	100 L
6	Class 4, Flammable Solids as defined in section 2.20 of the Federal Regulations	25 kg
7	Class 5.1, Oxidizing Substances as defined in section 2.24 (a) of the Federal Regulations	50 kg or 50 L
8	Class 5.2, Organic Peroxides as defined in section 2.24 (b) of the Federal Regulations	1 kg or 1 L
9	Class 6.1, Toxic Substances as defined in section 2.27 (a) of the Federal Regulations	5 kg or 5 L
10	Class 6.2, Infectious Substances as defined in section 2.27 (b) of the Federal Regulations	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
11	Class 7, Radioactive Materials as defined in section 2.37 of the Federal Regulations	Any quantity that could pose a danger to public safety and an emission level greater than the emission level established in section 20 of the "Packaging and Transport of Nuclear Substances Regulations"
12	Class 8, Corrosives as defined in section 2.40 of the Federal Regulations	5 kg or 5 L

[1] If the spill enters, or is likely to enter, a body of water, it is reportable regardless of the quantity
'Federal regulations' refer to the Transportation of Dangerous Goods Regulations under the *Transportation of Dangerous Goods Act 1992*
'Hazardous Waste Regulation' refers to B.C. Reg. 63/88

13	Class 9, Miscellaneous Products, Substances or Organisms as defined in section 2.43 of the Federal Regulations	25 kg or 25 L
14	Waste containing dioxin as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
15	Leachable toxic waste as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
16	Waste containing polycyclic aromatic hydrocarbons as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
17	Waste asbestos as defined in section 1 of the Hazardous Waste Regulation	50 kg
18	Waste oil as defined in section 1 of the Hazardous Waste Regulation	100 L
19	Waste containing a pest control product as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
20	PCB Wastes as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
21	Waste containing tetrachloroethylene as defined in section 1 of the Hazardous Waste Regulation	50 kg or 50 L
22	Biomedical waste as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
23	A hazardous waste as defined in section 1 of the Hazardous Waste Regulation and not covered under items 1 – 22	25 kg or 25 L
24	A substance, not covered by items 1 to 23, that can cause pollution	200 kg or 200 L
25	Natural gas	10 kg, if there is a breakage in a pipeline or fitting operated above 100 psi that results in a sudden and uncontrolled release of natural gas

Initial Report Content

Report information	Description
1. Contact information of the individual making the report	First and last name, phone number, and email address
2. Contact information of the responsible person	First and last name, phone number, and email address
3. Contact information for the owner of the substance spilled	First and last name, phone number, and email address
4. Location, date, and time of the spill	Provide as much location specific information as possible, including: general directions, description of how to approach the area, latitude and longitude if available, street address, and the date and time in 24-hour clock format
5. Description of the spill site and surrounding area	Provide a description of the receiving environment of the spilled material (for example, the area is wooded and the ground is soft; there are sensitive riparian areas that are at risk of contamination)
6. A description of the source of the spill	The container from which the material spilled (for example, fishing vessel, above- or below-ground storage tank, tanker truck, pipeline, or railcar)
7. Type and quantity of the substance spilled	An estimate of the amount of product spilled and a description of the product type, including product name, UN number, and Safety Data Sheet [SDS] (for example, diesel, UN 1202, 50 liters). If unknown, a description of the spill (for example, sheen or slick approximately 20 meters by 20 meters)
8. Cause and impact of the spill	The circumstances leading to the spill; the immediate cause as well as any contributing factors. May be a combination of the activity and the incident (for example, motor vehicle accident derailment, equipment failure, fire, human error, intentional/unauthorized release, natural occurrence, or unknown)
9. Details of the actions taken or proposed	Provide any necessary/ helpful details of the actions taken or planned (for example, what steps have been taken to contain the spill, which responders have been deployed, and when they will be on scene)
10. The details of further action contemplated or required	Provide any necessary/ helpful details regarding next steps, including response actions, deployment of additional resources, and monitoring activities

11. The names of agencies on scene	Any persons, government, federal government, local government, or Indigenous agencies
12. The names of other persons or agencies advised concerning the spill	Any persons, government, federal government, local government, or Indigenous agencies