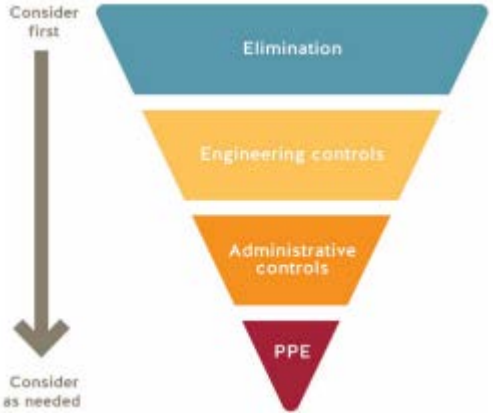
BCIT COVID-19 SAFETY PLAN
ACADEMIC SPACES

The BCIT COVID-19 Go-Forward Plan outlines the risk assessments, control measures, and the organizational process for our safe return to campus. All returning programs/courses must adhere to this process. Please refer to the BCIT COVID-19 Go-Forward Plan for additional information.

CONTACT INFORMATION

Course/Program Name:	**Environmental Engineering** **Safety plans for: EENG 8420 (fall) and EENG 7445 (winter)**		
Proportion of program offered on campus:	*e.g., Program = total of 40 courses of which 7 courses have some 'on campus' activity* The EE Program consists of 27 courses. Only two (EENG 8420 and 7445) will retain an on-campus component. All classroom-based courses have been replaced with online delivery. Courses that normally have industry site visits no longer have those visits. One course (EENG 7440) that normally requires a computer lab is now exclusively online.		
Start date:	October 1, 2020 (for EENG 8420) January 15, 2021 (for EENG 7445)	**End date:**	**May 31, 2021**
# of students:	Max 30	**# of employees:**	5 per course
Completed by:	Name: Olga Petrov	Position Program Head	Date August 27, 2020



ROOM INFORMATION

In this section, please identify all of the rooms that will be used by this returning program/course.
NOTE: Common areas are covered by the BCIT COVID-19 Go-Forward Plan.

Campus/ Building	Room Number Floor Plans found here	Type of Space Include washrooms and breakout rooms	Capacity Current capacity due to COVID-19
Parking lot 22, paved area	N/A	**Outdoor space** nearest washroom would be in adjacent buildings	**EENG 8420** only -There will be 6 students in a group and 2 instructors per one sampling site -2 distant sampling sites in that area attended at the same time

Parking lot 22, adjacent grass area	N/A	**Outdoor space** nearest washroom would be in adjacent building	**EENG 8420** only -There will be 6 students in a group and 2 instructors per one sampling site -2 distant sampling sites in that area attended at the same time
SW3	1695/1655	These are two laboratories Environmental Engineering and Civil Engineering connected by folding doors. For EENG 7445 doors will be opened so the total lab space will be expanded and used for each session. Washrooms at 1612, 1616, 1622	**EENG 7445** only 6 students and 1 instructor at the time. Lab technician at the beginning and at the end of the lab session to clean and set up equipment and to clean and put away equipment and samples.
SW3	4680	Chemistry lab Washrooms at 4613, 4616, 4618,	**EENG 7445** only 6 (4 students, 1 instructor and 1 lab technician) at the time. Lab technician at the beginning and at the end of the lab session to clean and set up equipment and to clean and put away equipment and samples.
SW3	4650	Chemistry lab Washrooms at 4613, 4616, 4618	**EENG 7445** only 6 (4 students, 1 instructor and 1 lab technician) at the time. Lab technician at the beginning and at the end of the lab session to clean and set up equipment and to clean and put away equipment and samples.
SW3	4670	Analytical scale room Washrooms at 4613, 4616, 4618	**EENG 7445** only 1 students at the time
SW3 and SE12	N/A	Loading area, in front of the mail room Washrooms at 1612, 1616, 1622	**EENG 7445** only 1 – 2 students at the time
SE16	N/A	Guichon Creek, gazebo Washrooms in adjacent building could be used	**EENG 7445** only 6 students and 1 instructor

RATIONALE FOR ON-CAMPUS ACTIVITY

Please provide a short description explaining the need for students to be on campus. Your narrative should be focused on the practical elements of the program or activity that are critical to achieving learning outcomes, and why on campus components cannot be replicated in an online or alternative environment (e.g. student bringing learning equipment home).

We have adapted this program so that it is almost entirely online, except for two courses where a hands-on component is necessary to achieve the program's core learning outcomes. Details follow:

EENG 7445 Environmental Sampling and Testing Methods 1 and EENG 8420 Environmental Sampling and Testing Methods 2 are two courses with prevailing hands-on components necessary to achieve essential learning outcomes so to equip students with skills for the future work place. All activities are focused on preparing and performing environmental sampling in different media (air, water, soil, groundwater) and carrying on chemical analyses. All activities will take place on BCIT Burnaby campus and will be supervised by BCIT faculty at all times.

EENG 7445 will be a combination of outdoor and indoor sessions and activities include:

- Taking air samples from a vehicle parked at the loading area (mail room) between SW03 and SE12, ground level
- Taking water samples from Guichon Creek, outdoor location in vicinity of SE16
- Sample preparation and analyses in different labs (SW3: 1695/1655, 4650, 4680, 4670) depending on the session type and instrumentation required.

Sampling equipment and instrumentation is cleaned and disinfected prior and after every session as per chem. lab procedures. Each student will have his or her station (equipment) so no sharing anticipated. Lab technician always disinfects/bleaches all surfaces before and after labs. In addition, this year, we will not use raw sewage samples, which are a biological hazard (although students are trained to handle that following strict safety procedures). Instead, synthetic wastewater samples will be prepared and used for that session so to minimize exposure to toxicants.

EENG 8420 will be completely performed outdoors and activities include:

- Equipment preparation and groundwater sample taking from an existing groundwater well at parking lot 22.
- Equipment preparation and soil and soil vapour sample taking from the grass area adjacent to parking lot 22 (location map attached).

Equipment will be cleaned before bringing to the site by faculty's private vehicle (also disinfected with approved wipes), additional equipment will be secured so to avoid sharing it among students; equipment will be disinfected after the use before packing back to a vehicle and returned to the lab or office. Please note that the strict equipment cleaning procedures are anyway our standard practice to avoid cross-contamination of samples. In additions, all must wear gloves from the same reasons.

Students and staff are required to complete Pandemic Exposure Control Plan training in the Learning Hub prior to coming to campus. Students and faculty will secure their own transportation to campus (public transit and/or private vehicles). Upon arrival to BCIT campus students will review Personal Hygiene Best Practices as per **BCIT COVID-19 Go-Forward Plan**, they will be provided with PPE, and will be told about COVID-19 safety control measures by faculty.
Please note that EE students completed WHMIS training in the first year of their study as a requirement to start lab sessions. Normally, they receive a safety talk prior to first lab and are checked for wearing appropriate PPE regardless COVID-19 protocol. This time, students and faculty will also have a non-medical face masks and face shields for indoor sessions and outdoors in situations when they are closer to each other than required 2m. Standard mandatory PPE required for EE students and faculty for each session consists of a lab coat, closed toe shoes, safety glasses and gloves.

[Computer labs for EENG 7440 will be done remotely and industry visits would be replaced with video presentations and zoom meetings for academic 2020/2021 year.]

CONTROL MEASURES

COVID-19 SAFETY PLAN: CONTROL MEASURES CHECKLIST

Directions for completing a Safety Plan:

1. *First step of this process is to review the BCIT COVID-19 Go-Forward Plan as the overall planning document for this process.*
2. *Use this checklist as a tool to assess COVID-19 control measure preparedness for students and employees and the spaces they will be using. Refer to the BCIT COVID-19 Go-Forward Plan for standardized safety guidelines and procedures.*
3. *For each control measure, state the details. If the control measure is a 'No' or 'NA', please provide a brief explanation.*
4. *The manager requests all PPE requirements by submitting this draft Safety Plan to the PPE@bcit.ca.*
5. *Implement all the safety measures in this Safety Plan.*
6. *The manager completes a site visit to ensure all control measures and safety supplies are in place.*
7. *The manager signs the completed Safety Plan and submits it to returntocampus@bcit.ca for approval.*
8. *Once approved, the COVID-19 Safety Plan is posted in all work areas identified within this plan.*

Note: The workspaces cannot be used until all applicable control measures are in place and Safety Plan is approved. For additional resources the Risk Assessment Controls Guidance and Hierarchy of Controls. For assistance email ssemohs@bcit.ca.

#	Control Measure	Yes	No	NA	Details (as per Directions)
ELIMINATION					
1.	Room(s) set up to allow for 2 metres physical distancing during instruction and practice. **Note:** Contact returntocampus@bcit.ca for room capacity and layout if needed.	☒	☐	☐	*Exceptions allowed as per BCIT COVID-19 Go-Forward Plan, Risk Matrix Summary (explain):* SW3: 1695/1655, folding doors will be opened to allow for a larger space 4650, 4680, 4670 large lab spaces; "X" on the floor mark the location of work stations.
2.	Demonstration, work and assessment stations are set-up to allow for 2 metres physical distancing.	☒	☐	☐	*Exception allowed as per BCIT COVID-19 Go-Forward Plan, Risk Matrix Summary (explain):* SW3: 1695/1655, 4650, 4680, 4670 spaces enable setting up work stations and equipment at 2 m distance; in addition, one student at the time will be allowed in a small SW3 4670 analytic scale room for weighing samples;

#	Control Measure	Yes	No	NA	Details (as per Directions)
					All persons will be wearing full PPE (lab coat, face masks and face shields, gloves, safety glasses, close-toe shoes) in these labs at all times as per WorkSafe BC Regulations.
3.	Identified area(s) where students wait outside of teaching space until allowed inside by instructor.	☒	☐	☐	Hallways in front of each lab with "X" indicating 2 meter spaces
4.	Work has been scheduled to minimize numbers of individuals on campus at one time.	☒	☐	☐	EE program does not have any classes scheduled for Mondays so that day will be now scheduled for labs and fieldwork for additional groups of students. Instead of 2 sets/groups of students normally existing in those courses, we will have 4-5 sets/groups of students, depending on enrolment but allowing 6 students max per set (group).
5.	In shared spaces, safety protocols have been put in place to reduce close contact between users.	☒	☐	☐	Signages as per **BCIT COVID-19 Go-Forward Plan**
6.	Movement within the room is identified, such as with directional arrows, for walkways and entrances/exits.	☒	☐	☐	*Signs or arrows on the floor identifying directions.*
7.	Water fountains are put out of service, and only touchless water bottle filling station available.	☐	☐	☒	Expect to be completed by facilities
8.	Mobile fans have been removed or put out of service.	☐	☐	☒	
7.	Washrooms have been identified.	☒	☐	☐	*If yes, Washroom occupancy limit* _1__ Washrooms in SW3, and adjacent buildings as identified above
8.	Break area(s) for student use have been identified.	☐	☐	☒	No breaks are planned during lab sessions (EENG 7445) Field work (EENG 8420) time between morning and afternoon session students can spend outside the campus; if intend to remain on campus, they will follow safety procedures of physical distancing
9.	Break areas for employee use have been identified.	☐	☐	☒	No breaks are planned during lab sessions (EENG 7445) Field work (EENG 8420) time between morning and afternoon session faculty can spend outside the campus; if intend to remain on campus, they will follow safety procedures of physical distancing
10.	Other:	☐	☐	☐	Please check **Appendix A** for the labs floor plan and sampling location maps
ENGINEERING CONTROL MEASURES					
11.	Barriers are implemented to separate work areas or walk ways, when physical distancing not practical.	☐	☐	☒	Physical distancing is the measure selected
12.	Barriers are stable and do not introduce other safety hazards, e.g. tripping.	☐	☐	☒	
13.	The impact on ventilation requirements have been considered if there's been a significant use change for the instructional space.	☒	☐	☐	*Complete a Facilities and Campus Development work requisition for assessment, as needed.*

#	Control Measure	Yes	No	NA	Details (as per Directions)
					EENG 7445 to complete work requisition; chemistry labs should have proper ventilation and operational fume hoods at the times of performing analyses.
	Other:	☐	☐	☒	
SIGNAGE (ADMINISTRATIVE) *Signage is available @ BCIT online Inventory. Guidelines for posting signs are available on ShareSpace.*					
13.	Posted: Physical distancing (2 m) sign(s) Item 1A	☒	☐	☐	Responsibility of courses' lead instructors.
14.	Posted: Hand washing sign(s) Item 29B	☒	☐	☐	Responsibility of courses' lead instructors.
15.	Posted: Health screen sign(s) Item 3C	☐	☐	☒	No screens required as full PPE will be worn by students and faculty.
16.	Posted: Hand washing sink location sign(s) Item 14A	☐	☐	☒	Chemistry labs already have such signs for existing hands, eyes and shower sinks.
17.	Posted: Hand sanitizing station location sign(s) Item 13A	☒	☐	☐	Responsibility of courses' lead instructors.
18.	Posted: Protect yourself sign(s) Item 21A	☒	☐	☐	Responsibility of courses' lead instructors.
19.	Posted: Occupancy limit of this room sign(s) Item 37A	☒	☐	☐	Responsibility of courses' lead instructors.
20.	Posted: Other signs	☒	☐	☐	*Please list:* One way directional signs in lab rooms. Entrance and exit signs to maintain one way flow. Responsibility of courses' lead instructors. Please see **Appendix B** for signage posted
ORIENTATION AND TRAINING (ADMINISTRATIVE)					
21.	Routine safety discussions held to review control measures and safety protocols.	☒	☐	☐	
22.	All students have completed the online Pandemic Exposure Control Plan training.	☒	☐	☐	*How will compliance be checked:* Will complete at the beginning of respective courses. Test required on Learning Hub. To be completed before the first lab/field session
23.	COVID-19 safety Site orientation for students has been developed and posted in the Learning Hub.	☒	☐	☐	*Procedure for orientation found here.* *Student COVID-19 Orientation Checklist found here.*
24.	All employees have completed the online BCIT Pandemic Exposure Control Plan Training.	☐	☒	☐	Not yet, completion expected at the beginning of term.
25.	All employees have completed the online New Employee Orientation module.	☐	☒	☐	*New and Returning Employee Orientation Checklist found here.* *Each employee to save the checklist to their online New Employee Orientation course*
26.	Other:	☐	☐	☒	
RULES AND GUIDELINES (ADMINISTRATIVE)					

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ACADEMIC SPACES

#	Control Measure	Yes	No	NA	Details (as per Directions)
27.	All unnecessary and self-serve items have been removed from the spaces. *e.g., pens, paper, etc.*	☒	☐	☐	*All supplies asked for prior to class and stocked at each workspace*
28.	Doors that students are to use to enter and exit have been clearly identified.	☒	☐	☐	*Signs or arrows on the floor*
29.	Handouts, papers, and items are not physically provided to students.	☒	☐	☐	*If items are provided, they are cleaned between student use or disposed, or other control measures are in place – Describe:* All handouts will be provided electronically on Learning Hub. For recording results and taking notes, each student will bring and handle only their own papers and pens, no exchange with others.
30.	Students have dedicated tools/equipment, e.g., items are not shared between students.	☐	☒	☐	In EENG 7445 each student has his/her work station for some sessions; where instruments sharing is required, cleaning will be performed between users; in addition, students must wear gloves for all sampling events. In EENG 8420 additional equipment will be provided; however 2 students will share equipment; cleaning equipment will be performed between users; in addition, students must wear gloves for all sampling events.
31.	If cleaning common touch points or tools/equipment not practical, then it is identified when hands are washed/sanitized before and after use.	☒	☐	☐	*Explain* Students will wash and sanitize hands before and after labs; during sessions they are wearing gloves:
32.	Work spaces/stations are dedicated for an individual or group use and not shared with others.	☒	☐	☐	In the lab, each student has his/her own workstation. (EENG 7445).
33.	Single-use (disposable) products are used where feasible.	☒	☐	☐	
34.	Measures are in place to accommodate student sick at home.	☒	☐	☐	*Accommodation plan:* Student should watch video instead of attending lab session and may return to next course offering to complete a hands-on component.
35.	Procedures in place to screen students on a daily basis.	☒	☐	☐	*The health screen poster is available for reference and is posted on building doors. Students and employees are expected to self assess daily, and the BCCDC self-assessment tool can be used to support this.*
36.	There is a procedure in place if a student or employee becomes ill on campus.	☒	☐	☐	*Refer to the COVID-19 Pandemic Scenario Playbook for more information. If the person is reporting symptoms, ask them to avoid others and return home. If they require immediate medical attention, call First Aid and 911.*
37.	There are procedures in place if a student or employee travels before coming to campus, or has been in close contact with someone who has tested positive for COVID-19.	☒	☐	☐	*Refer to the COVID-19 Pandemic Scenario Playbook for more information. Confirm if the person is aware of self-isolation requirements and protocols.*
38.	Provisions made for students to maintain same lab/class cohort throughout the Term.	☒	☐	☐	

#	Control Measure	Yes	No	NA	Details (as per Directions)
39.	Other:	☐	☐	☐	
PERSONAL PROTECTIVE EQUIPMENT (PPE)					
40.	Appropriate PPE for the hazards of employee and student tasks are available to be provided (non-COVID-19 related ppe).	☒	☐	☐	*List the ppe and tasks/activities it is required for:* Students and faculty are required to bring in: lab coats, safety glasses, closed-toe shoes Department will provide gloves, face masks and face shields (ordered)
41.	Training is provided for the above PPE to students and employees.	☒	☐	☐	During the first EENG 7445 class and at the beginning of the first lab/field session.
42.	Appropriate PPE for COVID-19 is available to be provided to students and employees. Supply requests emailed to ppe@bcit.ca.	☒	☐	☐	*Based on circumstances allowed for in the BCIT COVID-19 Go-Forward Plan, Risk Assessment Matrix Summary.* *List PPE and tasks/activities required for:* Necessary PPE and cleaning supplies have been ordered
43.	PPE safe donning, doffing, disposal, and disinfecting instructional materials are available for students and employees.	☒	☐	☐	*Post applicable signs in a visible location if ppe required.* *Use the Student Orientation checklist to assist orientation/training by instructors.* *Use the Employee Orientation checklist to assist orientation/training by their supervisors.*
44.	Other:	☐	☐	☒	
CLEANING					
45.	Facilities is aware of the cleaning needs for the area. Facilities work requests have been submitted.	☐	☐	☐	*Cleaning includes common touch points and appropriate frequency for the area. This includes high touch areas. Provide FCD work request number(s).* To be completed for EENG 7445 by lead instructor before January 2021.
46.	Training will be provided to faculty and students performing cleaning duties and cleaning materials have been provided.	☒	☐	☐	*Cleaning Standard Operating Procedures have been located here. What are the cleaning products/materials:* *What ppe is required:* Safety glasses, face masks/shields, gloves
47.	Assessment of sufficient number of hand wash stations conducted, and an appropriate number of handwashing stations are available	☒	☐	☐	*Consider time it will take for hand washing to take place, to determine what is e.a. sufficient number of hand wash stations. Some areas find a ratio of 8:1, students to sink, effective. The minimum amount of hand washing required is once before class starts, after class ends and before and after breaks.*
48.	Handwashing station(s), stocked, easily accessed, and have been identified to students and employees.	☒	☐	☐	*Sink Location:*_____Each lab_in SW3 and at entry ways to each building *Stocked with soap Y ☒ N ☐ paper towel Y ☒ N ☐*
49.	Hand sanitizing station(s), stocked, and have been identified to students and employees.	☒	☐	☐	***ABHS** (Alcohol-Based Hand Sanitizer): Location(s)*_ 2 in each lab and with each sampling point *Will hand sanitizer be refilled by department: Y ☒ N ☒* *If No, describe:*

#	Control Measure	Yes	No	NA	Details (as per Directions)
50.	All Safety Data Sheets (SDS) and cleaning procedures used are found here.	☒	☐	☐	*If not, describe:*
51.	The area(s) have been decluttered so that cleaning is simplified.	☒	☐	☐	
52.	Barrier cleaning process has been arranged if the barrier(s) could become contaminated.	☐	☐	☒	*Barriers can become contaminate if they are a touch point or if the contaminated with droplets by e.g. coughing or sneezing.*
53.	Common touch points and tools/equipment that must be shared are identified and cleaned between students and classes.	☒	☐	☐	*Cleaning/sanitizing procedures for common touch points and shared items are posted e.g. shared machinery, equipment, tools, etc. Identify who will clean and how often (e.g. staff and/or students):*
54.	Storage space for personal articles have been identified and are cleaned regularly.	☐	☐	☒	*Who will clean:* *Where is the storage:* All personal belongings will be placed in one corner of the lab (as usually) for the duration of the lab; for fieldwork, all belongings will remain with students/faculty or left in their vehicles.
55.	Other:	☐	☐	☒	
AUDIT AND CONTINUOUS IMPROVEMENT					
56.	There is a plan to conduct regular inspections of all control measures and safety protocols to ensure they are in place.	☒	☐	☐	*Ensure this COVID-19 Safety Plan is posted. Who will conduct these inspections and how often*? Faculty will inspect labs before students come on campus during lab use
57.	Audits of inspections are planned to ensure that control measures continue to be effective.	☒	☐	☐	*Who conduct the audits and how often?* Program Head will conduct monthly audits during the period of lab use.

APPROVAL

All COVID-19 risk control measures for this campus activity are in place.			
Manager	Name Brett Favaro Brett Favaro	Position Associate Dean, Natural Resources and the Environment	Date Sept 9, 2020
EOC	Name Glen Magel	Position EOC Director	Date November 28, 2020

Appendix A: Rooms and sampling locations covered by this safety plan

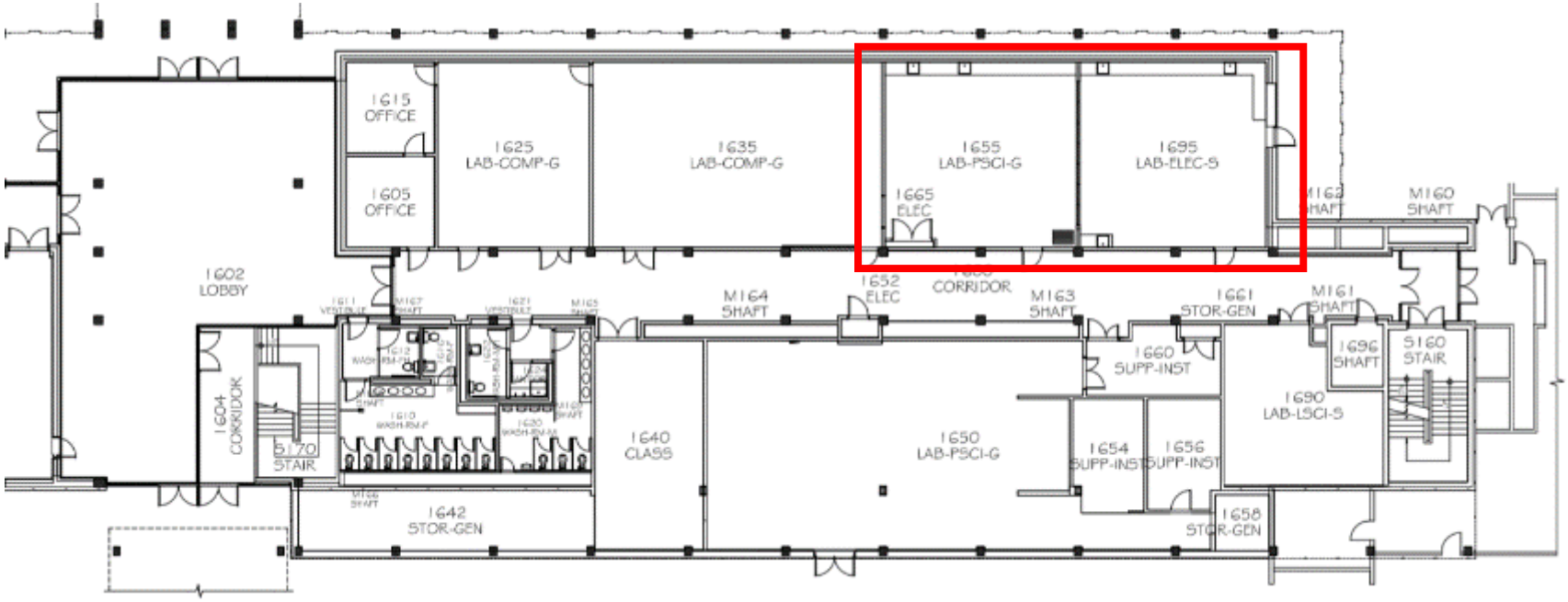

Fig 1: First floor of SW03. Red box highlights rooms addressed in this report

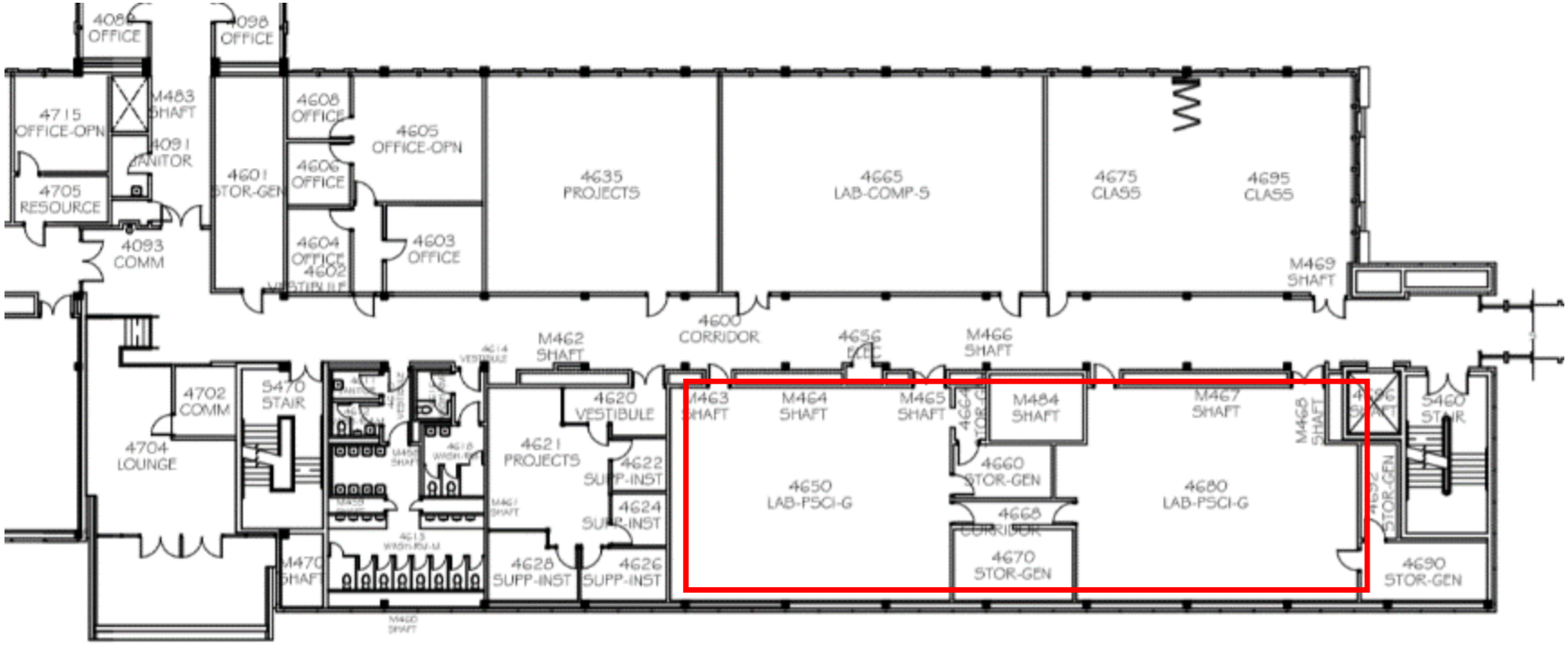

Fig 2: Fourth floor of SW03. Red box indicates rooms addressed by this report.

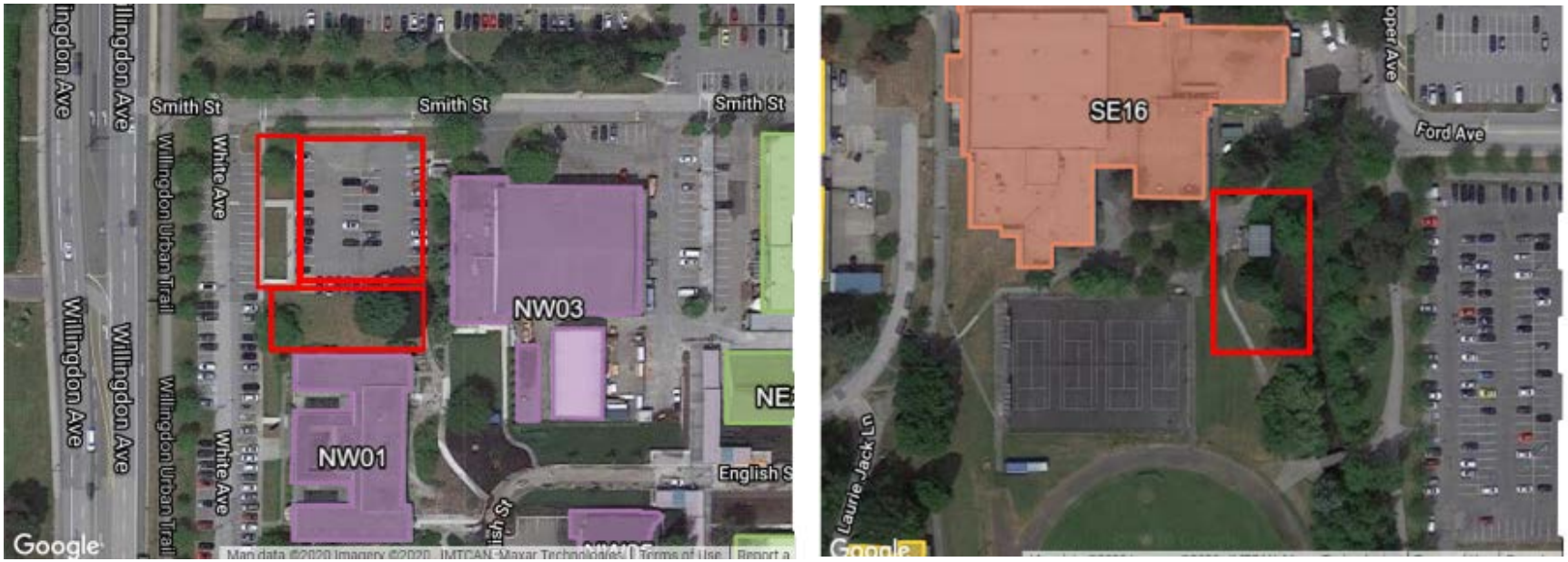

Fig 3: Outdoor sampling locations. Red boxes indicate locations addressed by this report.

Appendix B: Photographs – signs

Fig 4: First floor of SW03 labs

Fig 5: First floor of SW03 labs – workstations

Fig 5. Fourth floor of SW 03 labs - doors

Fig 6. Fourth floor of SW 03 labs – work stations