



**UNIVERSITY OF HAWAII AT MANOA
JOHN A. BURNS SCHOOL OF MEDICINE & CANCER CENTER
KAKA'AKO CAMPUS**

**STORM WATER MANAGEMENT PLAN
(SWMP)**

Prepared by:

University of Hawaii at Manoa, Environmental Health & Safety Office (UHM EHSO)
Environmental Compliance
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Prepared for:

University of Hawaii at Manoa, John A. Burns School of Medicine & Cancer Center
(JABSOM / UHCC) Kaka'ako Campus
Environmental Health & Safety Office (Kaka'ako EHSO)
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1.0 Purpose & Permit Coverage

The purpose of this Storm Water Management Plan (SWMP) is to provide implementation assistance for all required compliance elements contained in the: **Notice of General Permit Coverage (NGPC) National Pollutant Discharge Elimination System (NPDES) for the University of Hawaii John A. Burns School of Medicine Small Municipal Separate Storm Sewer System (File No. HI 06KC589).**

In addition to providing information on revisions and crucial team members, the SWMP is organized according to the five NGPC compliance essentials:

- **Public Education & Outreach Minimum Control Measures**
- **Illicit Discharge Detection & Elimination Minimum Control Measures**
- **Construction Site Runoff Control Minimum Control Measures**
- **Post Construction Site Runoff Control Minimum Control Measures**
- **Pollution Prevention/Housekeeping Minimum Control Measures**

As such, this SWMP is designed to facilitate NGPC (or NPDES MS4) compliance throughout the entire University of Hawaii at Manoa (UHM) campus; and, other off-campus areas also covered by this permit which include:

- **Lower Campus (Athletics)**
- **Center for Hawaiian Studies (Dole Street)**
- **Parking Garage (Dole Street)**
- **Dole Street Parking Structure (also on Dole Street)**
- **Student Housing (Dole Street)**
- **Faculty/Staff Housing (Dole Street)**
- **Dole Street Offices (Dole Street)**
- **Law School (Dole Street)**
- **Magoon Facility (Woodlawn Drive)**
- **Institute for Astronomy (Woodlawn Drive)**
- **Faculty/Staff Housing (Woodlawn Drive)**
- **Lab School (Metcalf Street)**

Tenant organizations are also covered by the NGPC; and, they include:

- **East-West Center (located on UHM Campus)**
- **Hawaii Public Television (Dole Street)**

An interactive campus map is available at: <http://manoa.hawaii.edu/campusmap/>.

Deviations to the SWMP are not permitted without prior approval from the UHM Environmental Health & Safety Office (EHSO), Environmental Compliance Officer. Instances of non-compliance are taken seriously and expected to be rectified as soon as possible.



2.0 Control Measures

Measurable goals for the six EPA required control measures (listed below) have been incorporated into this program.

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post Construction Site Runoff Control
- Pollution Prevention/Good Housekeeping

SWMP control measures will be reviewed at least once a year by JABSOM; and, possibly more frequently if related situations arise. **An annual report will be submitted to DOH, by 28 January of each calendar year, as per the MS4 permit requirements.**

2.1 JABSOM/UHCC Facilities/Security/Grounds Education and Outreach Measurable Goals

Activity

- Maintain labels of known storm water drains.
- Complete initial training for new JABSOM/UHCC Facilities Personnel.
- Conduct annual refresher training for JABSOM/UHCC Facilities Personnel.

2.2 JABSOM/UHCC Campus Participation/Involvement Measurable Goals

Activity

- Document and respond to reports of discharges and fading/chipping labels/markers.
- Include information about the environmental compliance in trainings provided to new researchers.

2.3 Illicit Discharge Detection and Elimination Measurable Goals

Activity

- Identify/correct illicit discharges.
- Install filters/screens on storm drains if necessary, or incorporate the use of drain covers for activities such as grass cutting that can cause debris to enter the storm drains.
- Maintain Aqua Swirl.
- Continue BMP maintenance (e.g., filters, drain labels, Aqua Swirl).

2.4 Construction Site Runoff Control, Minimum Control Measure

JABSOM is responsible for ensuring that erosion control plans are developed for each soil disturbing project under an acre in size. For soil disturbing projects over an acre in size, additional DOH permitting will be



necessary. For any non-soil disturbing project that could result in an illicit storm drain discharge (e.g., debris or water), controls shall also be used.

Responsible parties who violate regulatory requirements will face disciplinary actions. Contractors will be evaluated on their performance and if JABSOM/UHCC is fined or cited due to work done by the Contractor, then the issue will be referred to the UH Contracting Authority for resolution. Prior regulatory violations will be taken into consideration during the bidding process.

Activity

- Complete initial training for new JABSOM/UHCC Facilities Personnel.
- Complete annual refresher training for JABSOM/UHCC Facilities Personnel.
- Work with JABSOM/UHCC Facilities in the development of the scope of work for large projects with the potential for soil disturbance or generation of debris.
- Provide UH-JABSOM/UHCC Contractor & Vendor Guide to Contractors.
- Evaluate contractors and document violations and report to UH Contracting Authority if necessary.
- Implement procedures for construction site inspections.
- Achieve maximum compliance for construction projects.

2.5 Post Construction Site Runoff Control Measurable Goals

Activity

- Complete initial training for new JABSOM/UHCC Facilities Personnel.
- Complete annual refresher training for JABSOM/UHCC Facilities Personnel.
- Provide UH-JABSOM/UHCC Contractor & Vendor Guide.
- Develop strategies that include structural and/or non-structural BMPs.

2.6 Pollution Prevention/Good Housekeeping Minimum Control Measure

Activity

- Complete initial training for new JABSOM/UHCC Facilities Personnel (refer to Section 5.0).
- Complete annual refresher training for JABSOM/UHCC Facilities Personnel.
- Review plans describing spill prevention and control procedures, including the Spill Prevention, Control, and Countermeasure (SPCC) plan, which is certified by a professional engineer October 10, 2008 and then re-certified January 5, 2011. A 5-year SPCC



review was conducted September 2017 with certification by a professional engineer on November 22, 2017.

- Conduct annual spill prevention and response (SPCC) training for appropriate personnel.

3.0 Inspections & Corrective Actions

JABSOM/UHCC will conduct periodic inspections to verify regulatory compliance and keep records of any necessary corrective actions. The frequency of inspections will be dictated by the designated inspector, and are dependent upon the type of activity as well as the potential for illicit storm water discharges. The inspections will be done, at a minimum, on a semi-annual basis.

The inspections will be verified during annual JABSOM audits. Identified deficiencies will be resolved as soon as possible; but, within two weeks time. Deficiencies that cannot be corrected within two weeks will be referred to the UH Environmental Compliance Officer (ECO). If necessary, the ECO will coordinate with the appropriate JABSOM parties to obtain a quick resolution to the deficiency. Problematic issues will be referred to a higher level University administrator and ultimately to the Chancellors office where necessary. JABSOM will perform follow up audits after a set period of time to verify corrective actions.

4.0 Hazardous Material & Industrial Practices

All employees involved in the handling of hazardous material and industrial type activities are required to be trained in the following:

- Identifying potential spill areas and drainage routes, including information on previous spills and causes;
- Reporting spills to appropriate individuals, without penalty (e.g., employees should be provided “amnesty” when they report such instances);
- Specifying material handling procedures and storage requirements; and,
- Implementing spill response procedures.

On-site contractors and applicable personnel shall also be informed of the facility operations and design features in order to help prevent accidental discharges or spills from occurring.

Information will be made available for contractors working on site (refer to JABSOM Kaka'ako Contractor & Vendor Guide). Information will include contact information and educational material.



5.0 Good Housekeeping Practices

Frequent and proper employee training in good housekeeping techniques reduces the possibility that chemicals or equipment will be mishandled. Motivating employees to reduce waste generation is important; JABSOM/UHCC will accomplish this by:

- Incorporating information sessions on good housekeeping practices into the facility's employee training program,
- Discussing good housekeeping at employee meetings, and,
- Publicizing pollution prevention concepts through posters, post bulletin boards with updated good housekeeping procedures, tips, and reminders, and memos.

6.0 Operation & Maintenance Practices

These practices ensure that processes and equipment are working well. A few examples that JABSOM/UHCC will incorporate into daily functions are listed below:

- Maintaining dry and clean floors and other surfaces by using brooms, shovels, vacuum cleaners, or cleaning machines;
- Regularly picking up and disposing of garbage and waste material;
- Making sure equipment is working properly;
- Routinely inspecting for leaks or conditions that could lead to discharges of chemicals or contact of storm water with raw materials, intermediate materials, waste materials, or products; and,
- Ensuring that employees understand spill clean-up procedures and have access to spill clean-up materials.

7.0 Material Storage Practices

Improper storage can result in the release of materials and chemicals that can cause storm water runoff pollution. JABSOM's proper storage techniques include:

- Providing adequate aisle space to facilitate material transfer and easy access for inspections;
- Storing containers, drums, and bags away from direct traffic routes to prevent accidental spills;
- Stacking containers according to manufacturers' instructions to avoid damaging the containers from improper weight distribution;
- Storing containers on secondary containment pallets or similar devices to prevent corrosion of the containers which can result when containers come in contact with moisture on the ground and are capable of collecting leaking material;
- Conducting annual training for personnel who work with hazardous chemicals;
- Assigning the responsibility of hazardous material inventory to a limited number of people who are trained to handle hazardous materials;
- Neatly organize materials for storage; and,
- Discuss handling procedures for these materials.



8.0 Preventive Maintenance

In order to prevent illicit storm drain discharges, JABSOM will:

- Ensure timely inspection and maintenance of storm water management devices (e.g., cleaning Aqua Swirl, filters);
 - Aqua Swirl devices are inspected semi-annually (January/February and June/July) by Island Storm Drain Maintenance, LLC, Eric Allosada.
 - Reports are provided by Island Storm Drain Maintenance and maintained in the JABSOM Facilities office and JABSOM EHSO office.
- Inspect campus storm drains quarterly and log deficiencies and corrective actions taken.
- Inspect and test facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters; and,
- Ensure proper maintenance of facility equipment and systems.

Each respective unit at JABSOM that has equipment with a potential to impact storm water quality must have and implement a preventive maintenance program. The program needs to include:

- Identification of equipment, systems, and facility areas that should be inspected,
- Schedule periodic inspections or tests of these equipment and systems,
- Appropriate and timely adjustment, repair or replacement of equipment and systems, and,
- Maintenance of complete records on inspections, equipment, and systems.

*JABSOM's Spill Prevention, Control, and Countermeasure Plan (SPCC), which includes a preventive maintenance program for diesel equipment and an annual training program, was re-certified by a professional engineer November 22, 2017.

9.0 Spill Prevention & Response Plan

On-scene employees are required to respond quickly to a discharge, therefore they must know the exact location (and contents) of the facility oil spill kits. The table below contains a listing of the facility's spill response materials.

Spill Response Materials

# of Items Available	Item Name	Location
30	High capacity absorbent pads*	Central Plant and BSB 4 th Floor
2	50 ft-absorbent socks*	Central Plant and BSB 4 th Floor
1	Box of nitrile gloves	Central Plant and BSB 4 th Floor
1	Empty 20-gallon drum to hold contaminated material*	Central Plant and BSB 4 th Floor
3	Disposal bags*	Central Plant and BSB 4 th Floor



**Above materials from “31 Gal Spill Kit” from Safety Systems, Catalog #S3M-PSKFL31*

Additional material and equipment is maintained by JABSOM EHSO, in the EHSO supply rooms located in the BSB room 112. This additional material includes absorbent pads and socks, containment booms, oil absorbent material, plastic scoops, spark-proof shovels, and personal protective gear. The spill response materials inventory is checked periodically by the JABSOM EHSO and Facilities staff, or following any discharge incident, to ensure that used material is replenished.

The following summary has been developed to provide a quick reference of actions to complete in the event of a chemical spill outside of the buildings.

1. If spill is a **MAJOR SPILL**

- cannot be contained or stopped;
- requires outside responder assistance;
- endangers people, property and the environment (significant amount at risk of entering the storm drain system):
 - a. CALL 911 (FIRE DEPARTMENT) AND NOTIFY JABSOM SECURITY (692-1911, 692-0911)
 - b. CONTACT YOUR SUPERVISOR AND JABSOM EHSO
 - JABSOM Facilities Director – Edward Ohlson: 692-0919 office, 492-6181 cellular
 - UHCC Facilities Director – Francis Blanco: 440-4568 office, 220-3738 cellular
 - c. JABSOM EHSO – Lisa Johns: 692-1855 STOP SOURCE or RE-DIRECT RELEASE ASSUMING IT IS SAFE TO DO SO – It is critical to prevent materials from reaching storm drains or water bodies; redirect larger flows by using makeshift barriers (e.g. equipment and/or sand bags), place plastic sheeting or storm drain covers over storm drains.

2. If the spill is a **MINOR SPILL**

- can be contained,
- does not endanger people, property or the environment,
- can be handled internally without outside assistance:
 - a. CONTACT YOUR SUPERVISOR AND JABSOM EHSO
 - JABSOM Facilities Director – Edward Ohlson: 692-0919 office, 492-6181 cellular
 - UHCC Facilities Director – Francis Blanco: 440-4568 office, 220-3738 cellular
 - b. JABSOM EHSO – Lisa Johns: 692-1855 office STOP SOURCE or RE-DIRECT RELEASE ASSUMING IT IS SAFE TO DO SO – It is critical to prevent materials from reaching storm drains or water bodies; redirect larger flows by using makeshift barriers (e.g.



- equipment and/or sand bags), place plastic sheeting or storm drain covers over storm drains.
- c. CONTAIN RELEASED MATERIALS ASSUMING IT IS SAFE TO DO SO
 - Use absorbent materials to contain small spills; work from the perimeter of the spill towards the center.
 - Use berms or other equipment to create barriers with sand to contain larger spills.
 - d. Work with JABSOM EHSO to collect spill clean up materials and ensure proper disposal of wastes.
3. JABSOM EHSO WILL CALL EMERGENCY RESPONSE PRIVATE CONTRACTOR (if release is not a small spill)
 4. JABSOM EHSO WILL COORDINATE FEDERAL AGENCY NOTIFICATIONS
 5. DISPOSAL – JABSOM EHSO will coordinate this.
 - Immediately hold materials on heavy plastic sheeting or in large plastic containers and also cover with heavy plastic.
 6. SPCC PLAN COMPLIANCE – ensure compliance with procedures in the SPCC plan if the spill includes diesel discharge or other hazardous material entering the storm drain system.

10.0 Industrial Activities

Work areas and material storage at JABSOM will have minimal storm water exposure.

11.0 Non-Storm Water Discharges

Chemical additives are prohibited from being discharged to the storm water system. Prohibited chemicals include, but are not limited to, rust and scale inhibitors, cleaning agents, and microbial inhibitors. In accordance with HAR 11-54, effluent discharges are not to be more than one degree Celsius from ambient conditions.

12.0 Sediment & Erosion Control

Activities that disrupt vegetated and other protected ground covers resulting in the exposure of underlying soil to wind and rain will be kept to a minimum. Erosion will be controlled or prevented with the use of storm drain filters or other controls.



“Storm Drain Awareness” Fact Sheet University of Hawaii John A. Burns School of Medicine/UHCC, Kaka’ako Campus

The University of Hawaii, John A. Burns School of Medicine (JABSOM) at Kaka’ako currently has a National Pollutant Discharge Elimination System (NPDES) permit for Municipal Separate Storm Sewer Systems (MS4s). The overall purpose of this permit is to prevent pollution from entering campus storm drains.

ISSUE SUMMARY: Storm water (and other sources of wash water) enters campus storm drains via a transit across impervious surfaces (e.g. roads, sidewalks, parking lots). During the transit, water “picks up” pollutants. Since any water that goes into campus storm drains is untreated – and eventually flows to the ocean – the University is required by the Department of Health to eliminate (to the “best extent practicable”) pollution via implementation of Best Management Practices (BMPs).

RESPONSIBILITIES: The table below presents the main pollutant types (and associated BMPs) that will likely be encountered by JABSOM Custodial and Landscaping Contractors. To ensure permit compliance, staff members are responsible for adhering to the BMPs at all times.

Examples of Common Pollution Sources & Associated Best Management Practices

Pollutant	Best Management Practices (BMP)
Debris (e.g. Trash, Leaves, Branches, etc.)	<ul style="list-style-type: none"> • Clean roads and sidewalks • Containerize all trash • Keep trash compactor door closed and dumpster lids down at all times • Repair trash compactor and dumpsters as necessary
Oil & Other Mechanical Fluids	<ul style="list-style-type: none"> • Ensure vehicles/equipment are properly operating • Use absorbents/drip pans for outdoor equipment that may drip while in storage (long- or short-term) • Use absorbents/drip pans for indoor equipment that may leak fluids into nearby storm drains • Rinse cars/equipment in designated, grassy landscaped areas
Sediment	<ul style="list-style-type: none"> • Install proper sediment and erosion control (e.g. silt fence, sand bags, etc) • Ensure controls are functional during rain events
Cleaning Water	<ul style="list-style-type: none"> • Dump into sinks (which are connected to the sanitary sewer) • Dump into grassy area (to avoid killing vegetation, rotate dumping areas and avoid bedded areas)
Water from Pressure Washing	<ul style="list-style-type: none"> • Avoid all storm drains • Protect storm drains with filters/blockage • Direct wash water to grassy areas
Chemicals (e.g. Solvents)	<ul style="list-style-type: none"> • Ensure hazardous materials are properly labeled, stored and disposed. • Follow Kaka’ako Hazardous Materials Management Program
Paint	<ul style="list-style-type: none"> • Never rinse contaminated equipment, e.g. used paint brushes, near storm drains • Report any observed occurrences to JABSOM EHSO ASAP
Spills	<ul style="list-style-type: none"> • Please notify JABSOM EHSO or Kaka’ako Security (DPS) of any spill occurrences, both minor and major spills, so that we can act quickly to prevent pollution from reaching the storm drain system.

Please contact Lisa Johns at 692-1855 if you have questions or wish to report any storm drain violations.