

**Official Brandywine Illicit Discharge Detection and Elimination Program (IDDEP)**

**Latest Revision 3/10/2015**

## Purpose

The Pennsylvania State University is working jointly with the Pennsylvania Department of Environmental Protection (PADEP) to improve the quality of stormwater run-off. Since many Commonwealth Campuses as well as University Park operate municipal separate storm sewer systems, they are required under the NPDES Phase II regulations to develop stormwater management programs. What follows is the plan developed for the University Park Campus; however, each of the involved Commonwealth Campuses should be able to modify this basic plan for their own use to meet the state requirements. This plan should enable detection and elimination of non-stormwater discharges, including illegal dumping, into the MS4.

## Background

Discharges from MS4s often include wastes and wastewater from non-stormwater sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of these dry weather flows were from illicit and/or inappropriate discharges and connections to the MS4.

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health. Examples of illicit discharges are: sanitary wastewater, effluent from septic tanks, car wash wastewaters, improper oil disposal, radiator flushing disposal, laundry wastewaters, spills from roadway accidents, improper disposal of auto and, house hold toxics.

**Program Requirements**

Recognizing the adverse effects illicit discharges can have on receiving waters, the Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:

* Storm Map - A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
* Ordinance - Through an ordinance, or other regulatory mechanism, a prohibition (to the extent allowable under State, Tribal, or local law) on non-stormwater discharges into the MS4, and appropriate enforcement procedures and actions;
* Education - The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
* Program - A plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4.

**Storm Map**

The creation of a storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It is needed to help determine the extent of discharge of dry weather flows, the possible sources of dry weather flows, and the particular water bodies these flows may be affecting. The availability of this map clearly demonstrates such awareness.

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The University has comprehensive maps of its storm system, many of which are found on the University’s website. However, detailed storm drain maps are not provided to the general public due to safety issues.

**Ordinance**

The University does not have the legal authority to write and enforce an ordinance as suggested by the NPDES Phase II standard protocol. The University is simply a land owner for this requirement and relies on the Ordinances for each municipality its property lies within.

**Education**

Outreach to the target audience regarding ways to detect and eliminate illicit discharges is another integral part of this MCM that will help gain support for and buy in to the program. It will also clarify our expectations and requirements regarding activities of contractors and employees when on University property. This outreach may include:

* Developing informational materials and guidance documents for specific audiences (e.g., students, faculty, and staff). These materials are located on the website.
* Placing ads for general public regarding illicit discharges.
* Using an inlet marking program for storm drains; and
* Supporting Environmental Health and Safety training for hazardous chemicals such as oils and pesticides.
* Environmental Hazard Emergency Response Plan

**Program**

1. Procedure for identifying priority areas:

These are areas with a higher likelihood of illicit discharges, illicit connections or illegal dumping. Priority areas may include areas with older infrastructure, a concentration of high-risk activities, or past history of water pollution problems. The University tested drains inside buildings to determine if cross connections exist. New buildings with a high potential to have cross connections (due to the complexity) or could cause harm (due to the use such as labs). The University maintains a map with all buildings tested and what has been found. Refer to the University’s drain procedure for how illicit discharges are dealt with.

1. Procedure for screening outfalls:

At the Brandywine Campus there are seventy eight storm drains and thousands of feet on drain lines. Using its map, maintenance staff inspects the outfalls at least once a year during dry weather. Staff also view outfalls during normal periods and when possible during heavy storms.

1. Procedure for identifying the source:

When an illicit discharge contaminated flow is detected at a regulated small MS4 outfall, maintenance staff immediately begins to trace the source of water using the Brandywine comprehensive map. The University has all utilities mapped, this is one reason that a flow is frequently found to be from another broken utility such as a water line. Having these maps make it easier to find a discharge.

1. Procedure for eliminating an illicit discharge.

Methods used to remove/correct the illicit connections will be site specific. It is noted that education of the employees and contractors will be a significant part of this effort.

1. Procedure for assessing sewage interactions:

The potential for illicit discharges caused by the interaction of sewage disposal systems (e.g., on-lot septic systems, sanitary piping) with storm drain systems has been reviewed by the University. Original testing using the firm NALCO, of University buildings, allowed the University to determine if sewer systems were bleeding into the storm system. Additionally, the University has a comprehensive program of gaging and line inspection, which is ongoing and done continuously.

1. Procedure for Gaining Access:

Mechanisms for gaining access to private property to inspect outfalls (e.g., land easements, consent agreements, search warrants) are not required since the University owns all of the property in its MS4.

1. Procedure for program documentation, evaluation and assessment:

As a final step, all actions taken under the plan will be documented. Doing this will illustrate that continuous progress is being made to eliminate illicit discharges and connections. This data will also be included as one of the measurable goals achieved in the required annual report. This information documented will include: number of outfalls screened; any complaints received and corrected; the number of discharges and quantities of flow eliminated; and the number of dye tests conducted.

**Does This Measure Need to Address All Illicit Discharges?**

No. The illicit discharge detection and elimination program does not need to address the following categories of non-stormwater discharges or flows unless the operator of the regulated small MS4 identifies them as significant contributors of pollutants to its MS4:

Water line flushing;

Landscape irrigation;

Diverted stream flows;

Rising ground waters;

Uncontaminated ground water infiltration;

Uncontaminated pumped ground water;

Discharges from potable water sources;

Foundation drains;

Air conditioning condensation;

Irrigation water;

Springs;

Water from crawl space pumps;

Footing drains;

Lawn watering;

Individual residential car washing;

Flows from riparian habitats and wetlands;

Dechlorinated swimming pool discharges; and

Street wash water

Additionally, the University has determined that some limited drinking faucets or other drains tie into the storm drain system. The University has determined that these do not constitute significant flows. The University (Brandywine) has also developed a Drain Procedure.