WEST VIRGINIA UNIVERSITY

ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

WV/NPDES Permit No. WV0116025

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1. PURPOSE

The purpose of this program is to provide for the health, safety, and general welfare of the students, staff, and faculty of West Virginia University (WVU) through the regulation of non-storm water discharges to the storm sewer system to the Maximum Extent Practicable (MEP) as required by federal and state law. This program establishes methods for controlling the introduction of pollutants into the storm sewer system in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) for stormwater discharges associated with the Municipal Separate Storm Sewer System (MS4) general permit WV0116025.

2. SCOPE

The program shall apply to all water entering the storm drain system, without regard to whether it is generated on developed or undeveloped land within the permit area.

3. DEFINITIONS

For the purposes of this program, the following shall mean:

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act: The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity: Activities subject to NPDES construction permits. These include construction projects resulting in land disturbance of one acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Conveyance: Any structural process for transferring stormwater between at least two (2) points, including piping, ditches, swales, curbs, gutters, catch basins, channels, storm drains, and roadways.

Hazardous Materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Discharge: Any direct or indirect non-storm water discharge to the storm sewer system, except as exempted in section 6.2 Table 1.

Illicit Connections: An illicit connection is defined as either of the following:

Any drain or conveyance, whether on the surface or subsurface that allows an illegal discharge to enter the storm drain system including but not limited to any conveyances that allows any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or,

Municipal Separate Storm Sewer System (MS4): The system of conveyances (including sidewalks, roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned and/or operated by WVU and designed or used for collecting or conveying stormwater, and that is not used for collecting or conveying sewage.

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit:
A permit issued by EPA (or by a State under authority delegated pursuant to 33 USC§ 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-Storm Water Discharge: Any discharge to the storm drain system that is not composed entirely of stormwater.

Outfall: A point source where the MS4 discharges from a pipe, ditch or other discreet conveyance directly or indirectly to waters of the State of West Virginia, or to another MS4.

Person: Any city utility, individual, contractor, student, staff, or faculty.

Pollutant: Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Storm Sewer System: Publicly-owned facilities by which stormwater is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Stormwater Management Plan (SWMP): A document which describes the BMPs and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the MEP.

Wastewater: Any water or other liquid, other than uncontaminated stormwater, discharged from a facility.

4. ROLES/RESPONSIBILITIES

Environmental Health and Safety shall administer, implement and enforce the provisions of this program. The standards set forth herein and promulgated in this program are minimum standards: therefore this program does not intend or imply that compliance will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants.

5. TRAINING

Training will be provided to any person that may have the potential to adversely affect stormwater runoff, or the storm sewer system. Specific training will be provided to facilities listed in **Table 3**. Related to topics covering the Spill Prevention, Control and Countermeasure (SPCC) Plan and the Stormwater Pollution Prevention Plan (SWPPP).

6. PROCEDURES

6.1 STORM SEWER MAP DEVELOPMENT

WVU will utilize Auto CAD, GPS and GIS technologies to map all conveyance systems and outfalls with a pipe diameter of six (6) inches or larger and open ditches with a two (2) foot or larger bottom width. The longitude and latitude coordinates for each outfall that meet the above criteria will be mapped. All outfall locations will then be incorporated into WVU's mapping system and database. All outfalls will be photographed and numbered for reference purposes. Maps will be available for review to meet all city, state or federal requirements.

6.2 PROHIBITION OF ILLICIT DISCHARGES

The term "illicit discharge" means any non-permitted discharge to a regulated small MS4 or to waters of the State of West Virginia that does not consist entirely of stormwater, except for naturally occurring floatables, such as leaves and tree limbs or authorized non-stormwater discharges covered under a NPDES permit. Examples of illicit discharges include but are not limited to, sanitary wastewater, septic tank effluent, car wash wastewater, oil disposal, radiator flushing disposal, laundry wastewater, roadway accident spillage, and household hazardous wastes.

Illicit discharges can be categorized as either direct or indirect. Examples of direct illicit discharges include sanitary wastewater; piping directly connected from a home to the storm sewer; materials (e.g. used motor oil) that have been dumped illegally into a storm drain catch basin; a shop floor drain that is connected to the storm sewer; or a cross-connection between the sanitary sewer and storm sewer systems. Examples of indirect illicit discharges include a damaged sanitary sewer line that is leaking into a storm sewer line or a failing septic system that is leaking into a storm sewer line or causing surface discharge into the storm sewer.

The MS4 general permit authorizes the following non-stormwater discharges provided they have been determined not to be substantial contributors of pollutants as stated in Part I.C. WVU will not consider those items listed in **Table 1** as illicit discharges. However, if in the future if WVU determines any of these activities to be illicit discharges, WVU will update its IDDE Plan accordingly.

Table 1

Exempt Non-Stormwater Discharges

Hyper-chlorinated water line flushing*	Dechlorinated swimming pool discharges**
Discharges from non-potable water sources*	Springs
Diverted stream flows	Water from crawl space pumps
Rising ground waters	Footing drains
Uncontaminated ground water infiltration	Camping equipment cleaning***
Uncontaminated pumped groundwater	Water from individual residential car washing
Discharges from potable water sources*	Flows from riparian habitats and wetlands
Foundation drains	Residual street wash water
Air conditioning condensate	Discharges or flows from firefighting activities
Irrigation water/Lawn watering runoff	Discharges authorized by a separate NPDES permit
Non-contact cooling water	Stream Condensate

* Unless de-chlorinated to 0.2 ppm or less, pH adjusted, solids removed, and discharged in a manner that does not cause erosion or sediment to be discharged into the MS4 or receiving stream.

**Chlorinated discharges not associated with drinking water shall be de-chlorinated to 0.1 ppm.

***Using only potable water and discharging onto vegetated lawn areas.

6.3 PROHIBITION OF ILLICIT CONNECTIONS

A. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.
B. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under laws or practices applicable or prevailing at the time of connection.
C. A person is considered to be in violation of this program if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.
D. Improper connections in violation of this program must be disconnected and redirected, if necessary, to the sanitary sewer system.

6.4 OUTFALL INSPECTIONS

WVU will perform visual inspections of the surrounding properties to determine where stormwater is discharging in a concentrated flow to identify any new outfalls. WVU will perform annual dry weather inspections (**Appendix A**) of its stormwater outfalls with a pipe diameter of six (6) inches or larger and open ditches with a two (2) foot or larger bottom width. Additional inspections may be required depending upon the results of annual inspection. WVU will also conduct outfall inspections in response to community, student, and employee complaints, as deemed appropriate. Concerns about possible illicit discharges can be filed using the following link. http://www.ehs.wvu.edu/request-for-service-form

WVU defines dry weather as a period in which there has been no rainfall or no more than one-tenth (0.1) of an inch of rain within a forty-eight (48) hour period. The inspector will conduct and document physical observations at each outfall.

In the event an outfall or pond conveyance system is discharging during dry weather and the physical observations warrant a possible illicit discharge, the inspector may conduct a series of in-field water quality tests. If physical observations and in-field tests suggest water quality problems, the inspector may choose to collect a sample for further laboratory analyses. The in-field water quality parameters to be tested for, but not limited too are listed in **Table 2**.

Table 2
Water Quality Test Parameters and Uses

Water Quality Test	Reason for Parameter Test	Method
Conductivity	Used as an indicator of dissolved solids	Conductivity meter in field
pH	Extreme pH values (low or high) may indicate commercial or industrial flows; not useful in determining the presence of sanitary wastewater (which, like uncontaminated base flows, tends to have a neutral pH)	pH meter in field or test strips
Temperature	Sanitary wastewater and industrial cooling water can substantially influence outfall discharge temperatures. This measurement is most useful during cold weather.	Temperature meter
Optical Brighteners	Used to indicate the presence of laundry detergents that often contain fabric whiteners, which cause substantial fluorescence.	Untreated cotton pad surrounded by mesh bag place storm drain, outlet, or manhole; left for 5-7 days. Then, cotton pad placed under UV lamp.
Ammonia-Nitrogen	High levels can be an indicator of the presence of sanitary wastewater.	Field Test Kit
E. Coli	High levels can be an indicator of the presence of sanitary wastewater.	Collect sample and have analyzed
Phosphorus	High levels can be an indicator of the presence of sanitary wastewater.	Field Test Kit

6.5 SOURCE IDENTIFICATION

WVU will attempt to determine the source of all dry weather discharges. However, recognizing that most dry weather discharges will not be constant, WVU understands that identifying the source of 100% of all illicit discharges is unlikely.

For each dry weather discharge suspected of being illicit, the inspector, utilizing a map of the storm sewer system, will follow the drainage ditch or identify the most up-pipe manhole with a junction in an attempt to identify the general location from which the discharge originates. The inspector may opt to collect additional field and laboratory samples as he or she makes their way upstream or up-pipe in order to compare the outfall sample results with the in-line results in hope of identifying similarities between the sites. If, from following the drainage ditch or inspecting the manhole, the inspector can determine the direction from which the discharge originates, he or she will then continue upstream or to the next up-pipe manhole until he or she can pinpoint the source or the general vicinity from where the discharge is originating. If the inspector cannot identify the specific source through visual observation, a dye test, smoke test or video inspection will be necessary to determine the source of the discharge.

A. Dye Testing

If an inspector is able to narrow down the likely source of a discharge to a reasonable number of buildings, homes or businesses, WVU will perform a dye testing of infrastructure in question as needed. Storm sewer outfalls will be observed to check for presence of the dye. Prior to testing, WVU will contact building owners and occupants to obtain access to the buildings. As applicable West Virginia Department of Environmental Protection (WVDEP), Morgantown Utility Board (MUB), West Virginia Division of Highways (WVDOH), City of Westover, and Star City will also be notified so they will be prepared to respond to citizen calls and/or questions (**Appendix B**). Two or more WVU staff will be equipped with two-way radios or cell phones with one person inside the suspected building and the others stationed at appropriate manholes and/or outfalls. The inside person will drop dye into a plumbing fixture and run a sufficient amount of water to move the dye through the plumbing system. The inside person will then radio or call the outside crew so they can verify and record the presence or absence of dye.

B. Smoke Testing

If dye tests prove unsuccessful, WVU may conduct smoke testing. A smoke test involves injecting non-toxic smoke into storm sewer lines and then noting the emergence of smoke from sanitary sewer vents from illegally connected buildings or from cracks and leaks in the storm sewer lines. The injection will be done by placing a smoke bomb in the storm sewer manhole below ground and forcing air in after it. WVU staff will be stationed at points of suspected illegal connections or cracks/leaks, noting any escape of smoke. Prior to performing smoke testing, WVU will inform building owners, occupants in the area, state, local and university police, and fire departments.

C. Video Inspection

Video inspections involve filming the storm sewer system and tracking a discharge to its source. This work will be done in house by WVU personnel from the Facilities Management (FM) plumbing department, by use of an outside contractors or the local utility MUB.

6.6 LIST OF POTENTIAL TO IMPACT WATER RESOURCES

Potential sources of illicit discharges at WVU include but are not limited to areas at Evansdale, Health Sciences Center, and Downtown campuses, three farms, Research Park, motor pool, airport hangar, college park apartments, arboretum, and general woodworking in Westover. **Table 3** list facilities with a relatively high potential to discharge contaminated runoff. Each of the facilities listed below, along with the MS4 sampling point will have outfall markers posted in accordance with Title 47, Series 11, Section 9 of the West Virginia Legislative Rules. These specific outfalls are monitored and sampled.

Table 3
Facilities with relatively high potential

Facility and Contact	Location	Materials and Activities
Animal Science Farm Benjamin Walsh, Associate Director WVU Animal and Nutritional Sciences Farm 1441 Stewartstown Road Morgantown, WV 26506-6108 (304) 293-4421	Animal Science Farm Road	• Fueling station • Herbicide/ pesticide/ fertilizer storage • Manure management • Maintenance garage
Campus Support Services Byron Smith, Assistant Director Facilities Management, Grounds and Labor PO Box 6570 Morgantown, WV 26505 (304) 293-6022	Puskar Blvd	• Salt storage • Maintenance garage • Equipment storage • Fleet parking • Landscaping materials • Fueling station • Solid waste
Facilities Management Keith Lawrence, Assistant Vice President Facilities Management PO Box Morgantown, WV 26505 (304) 293-2330	Evansdale Drive	• Fueling station • Vehicle storage

Transportation Services Keith Pyles Jr., Supervisor Transportation Services PO Box 6561 Morgantown, WV 26505 (304) 293-5627	Mileground Rd	• Fueling station • Car Wash NPDES permit • WVG990105 • Dumping and fill • Maintenance garage • Fleet parking
WVU-PRT-Main Maintenance Facility Kent Hastings, Interim Manager PRT Maintenance	99 8th Street	• Maintenance garage • Fleet parking

6.7 ELIMINATING ILLICIT DISCHARGES

The goal of WVU's IDDE Plan is to address 100% of the illicit discharges identified. WVU understands, however, that for a variety of reasons, immediate elimination of 100% of identified discharges is not likely to occur due to the political and socioeconomic circumstances that can play a role in such issues. WVU will attempt to corporate with adjunct MS4 permittees outside its jurisdictional boundaries to eliminate all identified illicit discharges.

6.8 CONSTRUCTION ACTIVITY DISCHARGES

Any activity that requires a construction NPDES stormwater permit, for construction activities 1 acres or greater, shall comply with all provisions of said permit.

6.9 NOTIFICATION OF SPILLS

Notwithstanding other requirements or laws, as soon as any person responsible for any known or suspected release of materials which may result or are resulting in an illicit discharge(s) of pollutants into stormwater runoff, the storm sewer system, or water of the state, said person shall immediately take all necessary actions and measures to stop, contain and cleanup such release. In the event of such a release, said person shall immediately notify WVU EHS or University Police at 304-923-2677.

6.10 VIOLATIONS, ENFORCEMENT, AND PENTALTIES

Any person who has violated or continues to violate the provisions of this program, may be subject to the enforcement actions outlined in the WVU Discipline Policy (**http://www.hr.wvu.edu/policies/wvu_hr_9_discipline_policy**), may be restrained by injunction, or otherwise abated in a manner provided by law.

6.11 EDUCATION AND OUTREACH

WVU will provide education to the general public within the MS4 area about the hazards associated with illicit discharges and the improper disposal of waste. WVU will distribute information through brochures, newsletters, website, newspaper articles, etc. WVU will continue to develop and review which communication tools are most effective as the public education and outreach and public participation program evolves.

6.12 REPORTING

The inspector will write a report for each illicit discharge that is identified during outfall screening. The inspector will maintain a database that documents all activities associated with the WVU's IDDE plan ranging from mapping, outfall screening, source identification and photographs. All activities associated with this plan will be documented and submitted to the WVDEP with WVU's annual report.

7. RECORDKEEPING

Records will be keep in a binder during the length of the current permit. Upon issuance of a new permit and approval of a new SWMP, records will be moved to secure storage.

8. PROGRAM REVIEW

The WVU IDDE plan will be reviewed for effectiveness and be updated as necessary. WVU will include relevant university personnel in this process.

9. APPENDICIES

Appendix A: Outfall Inspections Form

Appendix B: Dye Testing Notification Standard Operating Procedure (SOP)