

APPENDIX F: Illicit Discharge Detection and Elimination Program

(A) Illicit Discharge Detection and Elimination (IDDE). The permittee shall systematically find and eliminate all illicit discharges to and from its storm drainage infrastructure, including but not limited to illicit sanitary discharges.

(B) Definition: An illicit discharge is any discharge that is not composed entirely of storm water, except a discharge pursuant to another NPDES permit or a discharge resulting from fire fighting activities.

(C) Illicit Discharge Assessment. The permittee shall assess the DD Site and the storm drainage infrastructure serving its DD Site for the presence of and potential for illicit discharges to receiving waters or conveyance systems. For the purposes of this permit, storm drainage infrastructure serving a DD Site means any site drainage feature designed or functioning to collect, retain, detain, or convey storm water, including roads, parking lots, catch basins, curbs, gutters, ditches, manmade channels, and storm drains.

(1) Catchment Delineation and Mapping. Prior to a field assessment of the DD Site's storm drainage infrastructure for illicit discharges, the permittee shall delineate the Site drainage infrastructure by separate catchment areas, indicating flows tributary to individual storm water outfalls or interconnections with an MS4 or conveyances owned by others. This delineation may be presented in paper or electronic mapping format, and, at a minimum, shall include a schematic representation of the storm drainage infrastructure that illustrates any connections between any conveyances on the DD Site. If the boundaries of a drainage catchment extend beyond the boundaries of the DD Site, the permittee shall provide a delineation of the entire catchment. The permittee should coordinate this mapping with the DD Site Map required in Part II(A)(1) of Appendix D.

(2) Field Assessment. The field assessment shall include a comprehensive investigation to identify locations where illicit discharges flow or have the potential to flow into the drainage system of the permittee's DD site, and locations where illicit discharges could flow into other conveyance systems or into waters of the United States. The investigations, at a minimum, shall include a visual inspection of all accessible components of the drainage infrastructure. The procedure for identifying actual or potential illicit discharges shall include the following activities:

a. Sanitary and Process Wastewater Plumbing Verification. The permittee shall verify that all plumbing at its DD Site (e.g., toilets, floor drains) is properly connected to appropriate wastewater infrastructure, or otherwise permitted for discharge to the storm drainage system. Verification shall be accomplished through visual inspection of exposed plumbing, and dye testing or closed-circuit televising (CCTV) where visual inspection is not possible. The permittee may verify proper plumbing connections using the results of previous inspections and tests, provided there has

been no modification to the plumbing since the previous inspections and tests, and the previous inspections and tests have occurred within the last five years.

- b. Drainage Infrastructure Inspection.** The permittee shall systematically inspect all accessible components of the drainage infrastructure, including catch basins, drop inlets, manholes, open channels, outfalls and other related structures. For the purposes of this permit, outfalls include the point of discharge to a surface water or to a drainage conveyance owned by another. Inspections shall be completed during dry weather conditions and shall include sensory observations indicative of illicit discharges, including odor, color, turbidity, floatables, or oil sheens. In order to prevent or limit the influence of storm water runoff during the investigations, the inspection shall occur only when 24 hours have passed since a rainfall of greater than 0.1 inches. The antecedent dry period may be lengthened or shortened based on the best professional judgment of a Storm Water Professional, taking into account, the depth of prior precipitation and the extent, slope, storage, and other influences on the particular catchment under investigation.

Where non-storm water flow is observed or indicated, the permittee shall, unless the discharge is authorized under Part I of the permit, eliminate the illicit discharge or improper disposal practice that result in an illicit discharge as expeditiously as possible and no later than five days from its discovery, unless a longer period is documented in the logbook and in the Annual Certification of Compliance as necessary by the permittee. In any interim period between discovery and elimination of an illicit discharge, the permittee shall minimize the discharge of pollutants to its separate storm sewer system, conveyances owned by others, or receiving waters.

- c. Schedule and Reporting.** No later than 90 days after receipt of authorization to discharge under this permit, the permittee shall submit to EPA a certification consistent with Section IX of the permit that it has completed the assessment required by this Appendix of all catchments on its DD Site for the presence of, or potential for, illicit discharges; and shall include the findings for each catchment in its first Annual Certification of Compliance.

(D) Illicit Discharge Documentation. The permittee shall include in its annual Certification of Compliance:

- Documentation of all illicit discharge detection and elimination activities completed during the reporting period; and
- For any illicit discharges identified or eliminated during the reporting period, the following information:
 - location of the discharge;
 - a description of the discharge;
 - the method of discovery;

- o date of discovery;
- o date of elimination; and
- o estimate of the volume of flow removed.

The permittee may use the flow chart and sampling methods described below in conducting its illicit discharge investigation.

Figure F-1. Flow chart for determining likely source of discharge (Pitt, 2004)

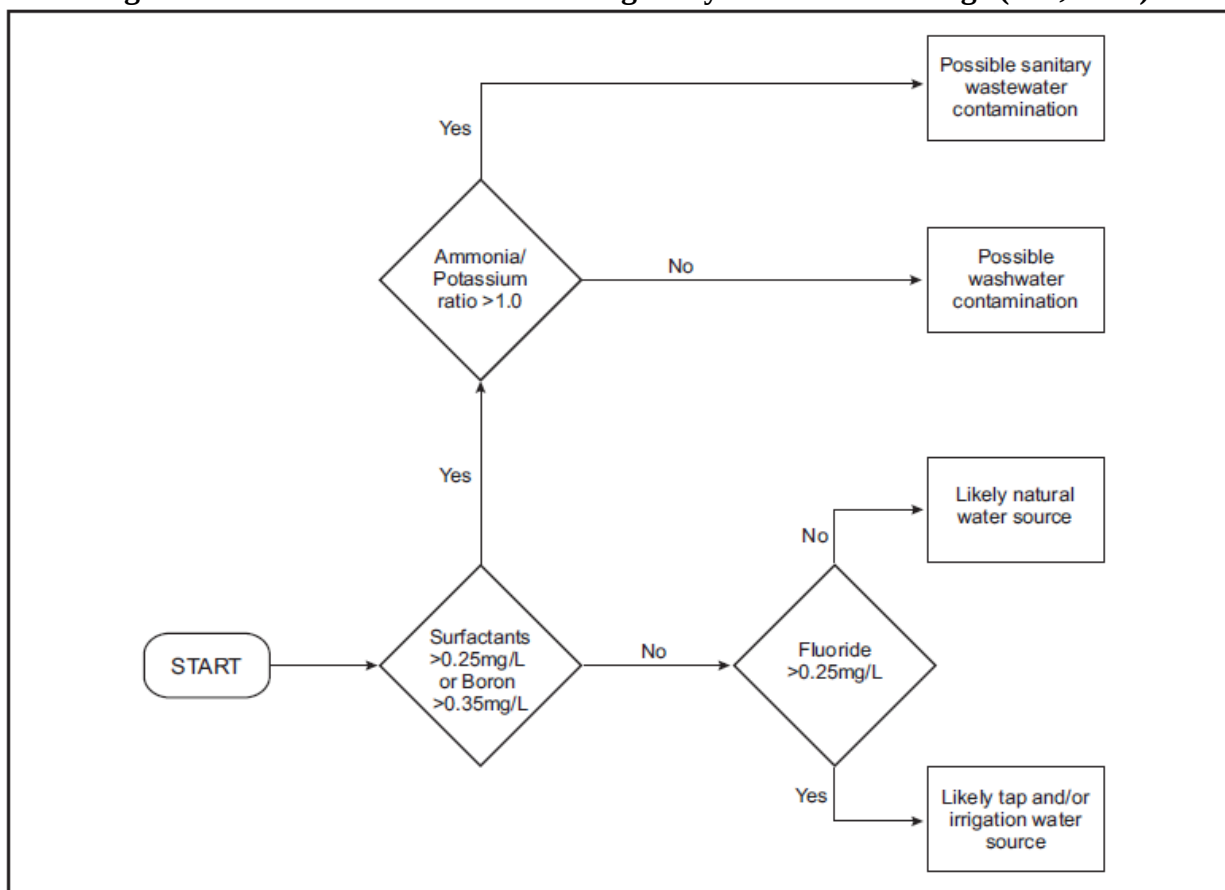


Table F-1. Freshwater water quality criteria, benchmark levels of other indicators, and available field instrumentation

Analyte/Indicator	Benchmark/ Single Sample	Instrumentation
E. coli ¹	Geometric Mean ² : 126 cfu/100 mL Single Sample: 235 cfu/100ml ³	Colilert reagent & Quanti-Tray Sheets IDEXX Corporation http://www.idexx.com/view/xhtml/en-us/water-microbiology.jsf

Analyte/Indicator	Benchmark/ Single Sample	Instrumentation
Enterococci ¹	Geometric Mean ² : 33 cfu/100mL Single Sample: 61 cfu/100ml ³	Enterolert reagent & Quanti-Tray Sheets IDEXX Corporation http://www.idexx.com/view/xhtml/en_us/water-microbiology.jsf
Surfactants (as MBAS)	Benchmark: >0.25 mg/l ⁵	MBAS Test Kit (e.g. CHEMetrics K-9400) www.chemetrics.com
Ammonia (NH ₃) as a single parameter	Benchmark: >1 mg/l ⁵	Portable Colorimeter or Photometer (e.g. Hach DR/890, CHEMetrics V-2000) www.hach.com
Ammonia (NH ₃)/Potassium (K) ratio	Benchmark: Ammonia/Potassium ratio > 1.0 ⁵	Portable Ion Meter (e.g. Horiba Cardy C-131) www.horiba.com
Fluoride (F) ⁴	Benchmark: >0.25 mg/L ⁵	Portable Colorimeter or Photometer (e.g. Hach DR/890, CHEMetrics V-2000)
Temperature	≥ 83°F(28.3°C) and change 5°C(2.8°C) in rivers ⁶	Thermometer
pH	< 6.5 and > 8 ⁶	pH Meter

¹ 105 CMR 445.000 – Minimum standards for bathing beaches; state sanitary code, Chapter VII

² Geometric mean of the most recent five samples collected within the same bathing season

³ Benchmark from the Charles River Watershed Illicit Discharge Detection & Elimination Protocol, March 2006.

⁴ Only to be used when tap water is fluoridated by municipality or by DD Site.

⁵ Center for Watershed Protection and Pitt Illicit Discharge Detection and Elimination Guidance Manual

⁶ 314 CMR 4.00 MA - Surface Water Quality Standards - Class B Waters.

References

Center for Watershed Protection & Robert Pitt, *Illicit Discharge Detection and Elimination – A Guidance Manual for Program Development and Technical Assessments*, Available online at <http://cfpub.epa.gov/npdes/stormwater/idde.cfm>

Final Total Maximum Daily Load for Nutrients in the Lower Charles River Basin, Massachusetts (CN 301.0), available online at <http://www.mass.gov/dep/water/resources/charlesp.pdf>