



Stormwater Industry Terms and Acronyms

Absorption vs. Adsorption

Absorption is the physical or chemical process in which [atoms](#), [molecules](#) or [ions](#) enter a bulk phase – [gas](#), [liquid](#) or [solid](#) material; the condition in which something takes in another substance. This is a different process from [adsorption](#), since molecules undergoing absorption are taken up by the volume, not by the surface (as in adsorption).

Adsorption is the process in which atoms, ions or molecules from a substance (gas, liquid or dissolved solid) adhere to a surface of the adsorbent. Adsorption is a surface-based process where a film of adsorbate is created on the surface, while absorption involves the entire volume of the absorbing substance.

	Absorption (MetalZorb®)	Adsorption (Vermiculite)
Definition	Assimilation of molecular species throughout the bulk of the solid or liquid	Accumulation of the molecular species at the surface rather than in the bulk of the solid or liquid
Phenomenon	a bulk phenomenon	a surface phenomenon
Heat exchange	Endothermic process	Exothermic process
Temperature	not affected by temperature	favored by low temperature
Reaction Rate	occurs at a uniform rate	steadily increases and reaches to equilibrium
Concentration	same throughout the material	concentration on the surface of adsorbent is different from that in the bulk

100-Year Flood: magnitude of a flood expected to occur on the average every 100 years, based on historical data; the 100-year flood has a 1/100, or one percent, chance of occurring in any given year

303(d) List: a section of the Clean Water Act that comprises impaired waterways. Pollution in these bodies of water impacts the applicable water quality standard for its designated use, such as drinking, aquatic habitat, or recreation. Bodies of water can eventually be removed from the list after a TMDL is developed, or changes are implemented that positively impact water quality.

BES – Bureau of Environmental Services: works with Portland residents and businesses to protect water quality, public health, and the environment through wastewater collection and treatment, sewer construction and maintenance, stormwater management, and stream and watershed restoration

BMP – Best Management Practices: considered a best practice or method to address a problem such as pollution and widely used to describe stormwater management practices involving structural or engineered control devices and pollution prevention techniques. BMPs are schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce water pollution. BMPs include treatment requirements, operating practices and procedures to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage. The term encompasses proprietary devices, as well as more traditional designs such as above-ground retention ponds or riparian areas. BMP effectiveness varies from one location to the next depending on site conditions.

CSO – Combined Sewer Overflow: combined sanitary waste and stormwater runoff in a single conveyance line which typically carries collected flows to a municipal wastewater treatment facility. During peak storm events, the combined system overflows, or discharges, directly to a body of water. CSO overflows are typically triggered when the volume of runoff exceeds the capacity of the applicable wastewater treatment facility. These systems are no longer standard practice, and the EPA is slowly working with NPDES permit holders to have them removed to eliminate pollutants released to receiving waters during overflow events.

Control Measure: refers to any BMP or other method, including effluent limitations, used to prevent or reduce the discharge of pollutants to waters of the United States

CWA – Clean Water Act

DEQ – Department of Environmental Quality the regulatory agency whose mission is to protect the quality of Oregon’s environment

Detention vs. Retention:

Retention ponds maintain a pool of water throughout the year and hold stormwater runoff following storms.

Retention basins have a riser with an orifice at a higher point so that it retains a permanent pool of water.

Detention ponds hold water for a short period of time; this pond temporarily holds water before it enters the stream.

A detention, or dry, basin has an orifice level with the bottom of the basin so that all of the water eventually drains out and it remains dry between storms – hence, a dry basin.

DMR – Discharge Monitoring Report: NPDES permit holders are required to submit a DMR to the EPA upon issuance of a new permit or modification to an existing permit; the report outlines effluent pollutant concentrations of discharges to surface waters

EPA – Environmental Protection Agency

Impaired waters: waters considered too polluted or otherwise degraded to meet the water quality standards set by states, territories or authorized tribes in the U.S.

Impervious surface: a surface incapable of being penetrated or passed through; an impermeable surface

Infiltration: the downward entry of water into the surface of the soil

Industrial wastewater BMPs: considered an adjunct to engineered [treatment](#) systems, typical BMPs include operator training, maintenance practices and spill control procedures for treatment chemicals. Many BMPs are specific to particular industrial processes, such as:

- source reduction practices in metal finishing industries (e.g. substituting less toxic solvents or using water-based cleaners)
- in the chemical industry, capturing equipment wash down waters for recycle/reuse at various process stages
- in the paper industry, using process control monitoring to optimize bleaching processes and reduce the overall amount of bleach used

LID – *Low Impact Development:* a site design practice that employs stormwater management approaches that help mimic pre-development hydrology by reducing or eliminating stormwater runoff, with a focus on managing runoff near the source. Efforts entail minimizing the amount of impervious cover created, conserving natural areas and retaining runoff on site. Examples include porous paving systems, bio filtration, rainwater harvesting, infiltrations systems, green roofs, and filtration systems.

LEED – *Leadership in Energy & Environmental Design:* a program that certifies and recognizes new building projects for innovative design practices; developed by the US Green Building Council, projects range from certified (minimum), silver, gold, or platinum (highest)

MEP – *Maximum Extent Practicable:* the technology-based standard established in the Clean Water Act that municipal stormwater dischargers must meet. The MEP standard is an ever-evolving concept that emphasizes pollution prevention and source control BMPs as the first line of defense in combination with structural and treatment methods.

MS4 – *Municipal Separate Storm Sewer System:* an MS4 is a conveyance or system of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, manmade channels or storm drains) owned or operated by a governmental entity that discharges to waters owned by a state, city, town or other public entity that discharges to waterways of the state. Systems are designed to collect and convey stormwater only, and are not a combined sewer nor are they part of a publicly owned treatment works facility (sewage treatment plant).

NOI – *Notice of Intent*

NPS – Nonpoint Source Pollution: sources for pollution that are less definable and usually cover broad areas of land, such as agricultural land with fertilizers that are carried from the land by runoff, or automobiles

NPDES – National Pollutant Discharge Elimination System: The NPDES permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. Created through the Clean Water Act in 1972, the NPDES program was developed by the EPA (Environmental Protection Agency) to control the discharge of polluted runoff to the nation's waterways from both point and non-point sources, such as pipes or wells and stormwater runoff. The program is administered at the state level.

NPDES Stormwater Discharge Permits

Phase I vs. Phase II: sources that need to obtain an MS4 permit are classified as either "Phase I" or "Phase II". Phase I MS4s are those with populations greater than 100,000, while regulated Phase II (or "small") MS4s serve populations less than 100,000 located within Census Bureau-defined Urbanized Areas. Federal regulations also provide EPA and the states the discretion to require other MS4s outside of Urbanized Areas to apply for a permit.

Outfall: a point source where an MS4 discharges to waters of the U.S.

Pollutants of Concern: includes biochemical oxygen demand (BOD), sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation), pathogens, oil and grease and any pollutant that has been identified as a cause of impairment in any water body where the MS4 discharges

Point Source Pollution: a discrete source where pollution is generated before it enters receiving waters, such as a sewer outfall, a smokestack or industrial waste pipe

RWQCB – Regional Water Quality Control Board

Retention Basin/Retention Runoff: rain or snow that does not percolate into the ground and is discharged into streams

Sanitary Sewer: system of subterranean conduits that carry refuse, liquid or waste matter to a treatment plant; contrast with storm drainage systems that carry surface water

Septic System: sewage treatment system that includes a settling tank through which liquid sewage flows and where solid sewage settles and is decomposed by bacteria in the absence of oxygen

SIC Code – Standard Industrial Classification Code: SIC is the standard system for classifying industries by a four-digit code

Siltation: gradual filling in of streams and other bodies of water with sand, silt, and clay

Source Control BMP: any activities, prohibitions of practices, maintenance, managerial practices or operations that aim to prevent stormwater pollution by reducing potential contamination at the source

SSO – Sanitary Sewer Overflow: a defect or accident event that causes collected sewage to discharge into surrounding water bodies or groundwater sources

Storm Runoff: surplus rainfall surface water that doesn't seep into the earth and flows overland

Stormwater Discharge Permits: general permits issued for industries in the state of Oregon as part of the National Pollutant Discharge Elimination System. Stormwater Discharge Permits are issued by the DEQ (Department of Environmental Quality) pursuant to ORS 468B.050 and The Federal CWA (Clean Water Act). Sources that are required to obtain coverage under this permit are identified by industrial activities by specific SIC Code OR the facility is notified in writing that coverage is required for its stormwater discharges

Stormwater Discharge Permits

1200-Z issued for industrial activities throughout the state.

1200-COLS issued for industrial activities in the Columbia Slough Watershed.

Stormwater management BMPs: control measures taken to mitigate changes to both quantity and quality of urban runoff caused through changes to land use. BMPs focus on water quality problems caused by the increase in impervious surfaces from land development. BMPs are designed to reduce stormwater volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention and filtration or biological and chemical actions. BMPs also can improve receiving-water quality by extending the duration of outflows in comparison to inflow duration (known as hydrograph extension), which dilutes the stormwater discharged into a larger volume of upstream flow.

Stormwater BMPs can be classified as structural/devices installed or constructed on a site or "non-structural" procedures, such as modified landscaping practices or street sweeping. There are a variety of BMPs available; selection typically depends on site characteristics and pollutant removal objectives.

SWMP – Stormwater Management Program

SWPPP – Stormwater Pollution Prevention Plan

Structural BMP: designed to mitigate adverse impacts of stormwater and urban runoff pollution

Treatment Control BMP: an engineered system that removes pollutants by gravity settling of particulates, filtration, biological uptake, media adsorption, or physical, biological or chemical process

TMDL – Total Maximum Daily Load: the maximum amount of pollutants a water body can receive and still meet water quality standards. TMDL's are developed for a number of water quality impairments including fecal/bacteria, sediment, nutrients (such as Phosphorus and Nitrogen), metals (such as Copper and Zinc), temperature and pH

TSS – *Total Suspended Solids*: the amount of solids suspended or transported in runoff as well as being a specific analytic method used to measure the concentration of solids in water; TSS is currently the most commonly regulated stormwater pollutant. Particle sizes and densities vary widely.

Watershed: land areas that catch rain or snow and drain to specific marshes, streams, rivers, lakes, or to ground water; the total area above a given point on a watercourse that contributes water to its flow

WPCF (Water Pollution Control Facilities) Industrial Permit: permit applications are submitted to the Oregon DEQ for coverage under general National Pollutant Discharge Elimination System (NPDES) discharge permits or under general Water Pollution Control Facilities (WPCF) permits