

Glossary

Absorption	Taking up by capillary, osmotic, chemical, or solvent action; as a sponge (or soil) absorbs water.
Absorption route	The way a toxicant comes into contact with an organism, typically by means of dermal contact, ingestion, or inhalation [formerly exposure route]
Activity restriction	A formal restriction that limits specific activities that could result in exposure to chemicals at levels unsafe for human health or the environment. This restriction is implemented through an environmental restrictive covenant.
Acute hazard	Environmental exposure conditions that pose an imminent threat to human health or the environment.
Adsorption	Adhesion of molecules of gases, or of ions or molecules in solutions, to the surfaces of solid bodies with which they are in contact.
All Appropriate Inquiry	Investigation into the previous ownership and uses of the property consistent with good commercial or customary practice as defined in 42 USC §9601(35)(b) that will qualify a party to a commercial real estate transaction for one of the threshold criteria for satisfying the landowner liability protections in CERCLA liability [42 USC §9601(35)(A) & (B), §9607(b)(3), §9607(q), and §9607(r)], assuming compliance with other elements of the defense.
Anthropogenic background	Natural and human-made substances present in the environment as a result of human activities not specifically related to the site in question.
Aquifer	A consolidated or unconsolidated geologic formation or group of formations or a portion of a formation, that is hydraulically interconnected and that has the ability to receive, store, or transmit water to wells, springs, or other surface water bodies.
Background reference area	The area where background samples are collected for comparison with samples collected on the site.
Background threshold value	An upper limit estimate of the background chemical concentration used to represent environmental chemicals that are not specifically related to the site being investigated.

Background well	A ground water monitoring well placed upgradient of the area of concern and out of the zone of influence of the source.
Blank	A sample analyzed to determine if all or a portion of an analyte detected in an environmental sample is the result of external contamination due to handling or other factors in the field or the laboratory; in such cases, the detected concentration of the analyte may not actually represent site conditions.
Calibration	Routine quality control procedures performed daily or more frequently to verify the accuracy of analytical instruments or measuring equipment.
Chain of custody	An unbroken trail of accountability that ensures the physical security of samples, data, and records.
Chemical Abstracts Service (CAS) Number	A unique numerical identifier that specifies a particular substance no matter what chemical name or synonym is used.
Closure	IDEM's written recognition that a party has demonstrated attainment of remediation objectives in a particular area. The written instrument for this decision varies by remedial program (see the <i>Remediation Program Guide</i>). Under the Resource Conservation and Recovery Act, closure refers to a series of formal procedures required to end the operation of a permitted treatment, storage, or disposal unit.
Cohesive soil	Clay, or soil with high clay content, that does not crumble, can be excavated with vertical side slopes, and is plastic when moist. Cohesive soils include clayey silt, sandy clay, silty clay, clay, and organic clay.
Commercial/industrial exposure	Human contact with contaminated environmental media at a frequency and duration likely to occur at a commercial or industrial property.
Commercial/industrial land use	Property used in conjunction with a business (and not used for human habitation), or vacant land not intended for future human habitation.
Composite sample	A sample that consists of portions of several samples from a given area; the portions are thoroughly homogenized to represent the area sampled. Composite samples are not appropriate for volatile substances.
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)	Legislation that established the federal Superfund for response to uncontrolled releases of hazardous substances that may endanger public health or the environment.

Conceptual Site Model	A comprehensive description of a site and the processes by which contamination may move from source(s) to receptor(s).
Conditional closure	A closure that relies on a continuing activity and/or activity restriction to adequately address risk from a release.
Contaminant	For purposes of the <i>Remediation Closure Guide (RCG)</i> , a chemical present at a concentration that exceeds the chemical's remediation objective.
Contract Laboratory Program	U.S. EPA program that establishes laboratory specifications, analytical methods, and quality assurance/quality control protocols required for Superfund and related activities.
Control sample	A sample introduced into a data collection process to monitor the performance of the system.
Critical effect	The first adverse effect, or its known precursor, that occurs to the most sensitive species as the dose increases during toxicity testing of a chemical.
Critical effects category	A group of organs or tissues with a common function or means of absorption, grouped together for the purpose of determining additivity of chemicals by critical effect.
Data quality objectives	Qualitative and quantitative statements that clarify a study's technical and quality objectives, define the appropriate type of data, and specify tolerable levels of potential decision error that will be used as the basis for establishing the quality and quantity of data needed to support decisions.
Dermal contact	Skin contact with any contaminated medium.
Dilution attenuation factor	The ratio of contaminant concentration in soil leachate to the concentration in ground water at the downgradient edge of the contaminated area (standard value equals twenty). This factor accounts for the reduction in contaminant concentration that results from adsorption, chemical transformation, biological degradation, and dilution due to mixing of the leachate with ambient ground water.
Dose-response relationship	The association between the amount of exposure to an agent and the likelihood and severity of adverse health effects.
Dry soil bulk density	The weight per unit volume of oven dry soil, determined by dividing the weight of the oven dry soil by the volume of the same oven dry soil.

Duplicate	A split sample or an independent second sample collected from, and representative of, the same sample location for the purpose of documenting precision.
Ecologically susceptible area	Habitats where it is appropriate to consider the effects of chemicals on nonhuman receptors.
Engineering controls	Physical barriers designed and maintained to prevent humans or other receptors from being exposed to contaminated environmental media.
Environment	The complex of physical, chemical, and biologic factors that include land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other similar natural resources as provided by IC 13-11-2-137 that act upon an organism or ecological community.
Environmental media	Material found in the outdoor, natural, physical environment through which chemicals can move and contact organisms.
Environmental restrictive covenant (ERC)	A legal and administrative measure to protect human health and the environment at sites where contamination is left in place. ERCs limit human exposure by restricting activity, use, and access to properties with contamination. Restrictive covenants can be enforced by the state against current and future property owners.
Environmental restrictive ordinance (ERO)	An ordinance adopted by a municipal corporation that limits, regulates, or prohibits withdrawal, human consumption, and any other use of ground water.
Environmental site assessment	The process by which a person or entity seeks to determine if a particular parcel of real property (including improvements) is subject to recognized environmental conditions. At the option of the user, an environmental site assessment may include more inquiry than that constituting all appropriate inquiry or, if the user is not concerned about qualifying for landowner liability protections, less inquiry than that constituting all appropriate inquiry. An environmental site assessment is both different from and less rigorous than an environmental compliance audit.
Equipment rinsate blank	A sample of analyte-free media that has been used to rinse sampling equipment. It is collected after completion of decontamination and prior to sampling. This blank is useful in documenting adequate decontamination of sampling equipment.

Estimated quantitation limit	The lowest concentration that can be reliably achieved within specified limits of precision and accuracy under routine laboratory operating conditions. Use of the word “estimated” emphasizes sample matrix dependence.
Excavation worker exposure	Worker exposure that could potentially result from trenching or excavation activities at a site. This term replaces the terminology “construction worker exposure” used in earlier guidance.
Exceedance	A chemical concentration that is greater than a remediation objective.
Exposure	An organism’s contact with a chemical, physical, or biological agent. Exposure is quantified as the concentration of the agent in the contact medium integrated over the duration of that contact.
Exposure control area	An area over which a remedy reduces exposure to an acceptable level. An exposure control area can be, but often is not, the same as an area of property control; it may involve multiple properties and multiple owners.
Exposure duration	The total amount of time over which an exposure occurs, typically expressed in years.
Exposure frequency	The number of days per year that an exposure occurs.
Exposure pathway	The course a chemical takes from a source to the point of contact with an exposed organism.
Exposure point concentration	A quantitative measure of potential contaminants in environmental media for the purpose of exposure assessment. Replaces the term “potential exposure concentration” (PEC).
Exposure scenario	The setting or circumstances under which which exposure to contamination does or can occur.
Exposure time	The number of hours per day that an exposure occurs.
Extent of contamination	The vertical and horizontal distribution of chemicals whose concentrations exceed remediation objectives.
Field blank	Analyte-free reagent water taken to the sampling site, transferred into a sample container on site, and then analyzed by the laboratory for the same parameters as the investigative samples. This sample is used to check for procedural contamination of samples.

Field duplicate	A split sample or an independent sample collected as closely as possible from the same location or source and at the same time. This duplicate sample is stored in a separate container and analyzed separately to document the precision of the sampling process.
Fill	Artificially deposited soil, rock, and/or waste material.
Fraction of organic carbon	The portion of organic matter in soil that is available to adsorb organic chemicals.
Free product	A substance that is present as a nonaqueous phase liquid.
Future land use	Projected site use or purpose in a time subsequent to the present.
Ground water	Water occurring beneath the surface of the ground, regardless of location or form (IC 25-39-2-10).
Hazard index	The sum of individual hazard quotients for multiple substances.
Hazard quotient	The ratio of a single substance exposure level over a specified period of time relative to a level that is considered protective, or the ratio of the exposure level to the remediation objective.
Health protective level	Chemical concentration calculated to be protective.
Holding time	Elapsed time, expressed in days from the date of sampling to the date of analysis, that a properly preserved sample may be stored before analysis.
Hydraulic conductivity	The extent to which a given substance allows water to flow through it.
Inhalation unit risk	An estimate of the increased cancer risk per concentration over a lifetime of exposure. Expressed in units of $(\mu\text{g}/\text{m}^3)^{-1}$.
Institutional controls	Administratively or legally enforceable measures that limit human exposure to chemicals at concentrations that exceed residential remediation objectives.
Interference	An element, chemical, or other matrix effect present in a sample that interferes with the detection of a target analyte. Interference may lead to inaccurate analytical results.
Judgmental sampling	A method of selecting sample locations based on the professional judgment of the sampler. The history of the site, current site conditions, and terrain should guide these decisions.

Karst terrain	Areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic features present in karst terrains include but are not limited to sinkholes, sinking streams, caves, large springs, and blind valleys.
Limiting factor	A constraint on a screening level based on a chemical property (e.g., soil saturation limit) or policy decision (e.g., maximum contaminant levels).
Matrix	The substance containing the analyte of interest. Examples include soil, sediment, sludge, ground water, surface water, drinking water, and air. Sometimes matrix types are simplified to consider only three main types: soil, water, and air.
Matrix spike	An aliquot of sample spiked with a known concentration of target analytes to document method bias in a particular matrix. The spiking occurs prior to sample preparation and analysis.
Matrix spike duplicate	A split sample, both portions of which are spiked with identical concentrations of target analytes to determine method bias and precision in a particular sample matrix.
Maximum contaminant level	Maximum concentration of a chemical allowed in drinking water systems by the National Primary Drinking Water regulations [40 CFR 141.22 (inorganic chemicals) and 141.61 (organic chemicals)].
Messenger well	Plume trend monitoring well located in the internal area of the plume, downgradient from the source, and within a two-year ground water time-of-travel distance.
Method detection limit (MDL)	The minimum concentration of an analyte that can be measured and reported with 99 percent confidence. MDLs are matrix specific.
Micrograms per kilogram (µg/kg)	An expression of concentration as mass of analyte per unit mass of sample. Equivalent to parts per billion. Used for soil, sediment, and waste samples.
Micrograms per liter (µg/l)	An expression of concentration as mass of analyte per unit volume of same. Roughly equivalent to parts per billion. Used for liquid samples.
Migration to ground water	The soil exposure pathway that considers vertical chemical leaching from soil into ground water.
Monitoring well	A well installed to obtain hydrogeological information or to monitor the quality or quantity of ground water.

Naturally occurring background	Substances present in the environment in forms that have not been influenced by human activity.
Nature of contamination	Site-related contaminants found during site characterization and their respective concentrations.
Off-site source	An identifiable location outside the site of interest that contributed contamination to the site.
Particulate emission factor	The rate at which chemicals move from soil into particulates in air.
Perimeter of compliance (POC)	When there is human or ecological exposure within the contaminant plume area, the POC is established as the location where exposure occurs. When there is neither human nor ecological exposure within the contaminant plume area, the POC is defined as the perimeter that is representative of the point at which ground water chemical concentrations are equal to or less than land use-specific remediation objectives. The POC referred to in the <i>RCG</i> is not to be confused with the “point of compliance” defined in the hazardous waste regulations, 40 CFR 264.
Perimeter of compliance well	A ground water monitoring well used for plume stability monitoring purposes that is located in an area of the plume downgradient of source area wells where dissolved contaminant concentrations are expected to exceed estimated quantitation limits for at least 75 percent of the monitoring events and where chemical concentrations approximate the remediation objective.
Petroleum	As per IC 13-11-2-160, petroleum is used for the following purposes: (1) IC 13-23, (2) IC 13-24-1, (3) IC 13-25-5. Those uses include petroleum and crude oil, or any part of petroleum or crude oil, that is liquid at standard temperature (60°F) and pressure (14.7 pounds per square inch absolute).
Playground	Areas that contain play equipment such as see-saws, merry-go-rounds, swing sets, slides, climbers, walking bridges, jungle gyms, chin-up bars, sandboxes, spring riders, monkey bars, overhead ladders, trapeze and trapeze rings, and/or playhouses.
Potential contaminant	A chemical present at a concentration that may or may not exceed its remediation objective.

Preferential pathway	The route of least resistance for fluid flow, including vapors. A more permeable feature than surrounding materials. The pathway may extend vertically or horizontally and be derived naturally or from human activities. The feature may also be oriented such that fluid flows in an unexpected direction. Generally limited in width from microscopic to a few tens of feet but often extensive in length. Examples include sediment grain size changes from fine to coarse, buried stream channels, fractured or dissolved bedrock, desiccation fractures in sediments, improperly sealed wells, field tiles, buried utility lines, and building foundations.
Property control	Control over land use or activities on a parcel of land, either through ownership or agreements with the owner(s), for the purpose of reducing or controlling exposure to contaminants.
ProUCL	A software program used to calculate, among other things, the upper confidence limit of various sample sets. ProUCL is available for free download on the U.S. EPA website.
Quality assurance project plan	A formal technical document describing detailed quality assurance/quality control and other technical procedures to ensure that the quality of environmental data will satisfy stated performance criteria for the data collection activity.
Quality control	A systematic approach that measures the attributes and performance of a process, item, or service against defined standards to verify that they are met.
Quantitation limit	The lowest concentration that can be reliably measured within specified limits of precision and accuracy under routine laboratory operating conditions.
Receptor	A human and/or ecological entity exposed to a stressor.
Recreational land use	Applies to areas and facilities where leisure time activities take place. Examples include parks, trails, walkways, sports complexes and open areas where people gather to enjoy recreational activities.
Reference concentration	An estimate of a lifetime continuous air concentration expected to occur without harmful effect. Expressed in units of mg/m^3 .
Reference dose	An estimate of lifetime daily oral dose expected to occur without harmful effects. Expressed in units of $\text{mg}/\text{kg}\text{-day}$.
Release	This term has program specific definitions under IC 13-11-2-184.

Remedial action	Activities consistent with the definition in IC 13-11-2-185.
Remediation objective	An environmental concentration of a chemical such that an equal or lower concentration will not result in unacceptable risk to receptors. Examples include screening levels, site-specific levels, and background concentrations.
Remedy	One or more measures taken to reduce risks to human health and/or the environment arising from a contaminant release. Measures may include contaminant treatment, contaminant removal, institutional controls, or engineered controls, alone or in combination.
Residential exposure	Human contact with contaminated environmental media at a frequency and duration likely to occur at a residence.
Residential land use	Any property used as a place of residence or any property that is within the commercial/ industrial category, but used in part for residential activities, such as a daycare center. Agriculture is considered a residential land use.
Resource Conservation and Recovery Act	Federal legislation that established cradle-to-grave accountability for hazardous wastes, from the point of generation to the point of disposal.
Risk	The probability of deleterious health or environmental effects.
Risk assessment	The collection and analysis of data that characterize the nature and magnitude of risk posed by a specific toxic agent.
Risk management	The process of evaluating and selecting responses to environmental risk.
Sample	In environmental field work, a single item or specimen from a larger whole or group, such as any single sample or any medium. In statistics, a set of representative individual specimens whose properties are studied to gain information about the whole population.
Sampling and analysis plan	A site-specific plan detailing sampling rationale, protocols, and analyses. The protocols provide for documentation of all field work.
Screening level ecological assessment	A desktop review and site inspection to determine if ecologically susceptible areas (ESAs) are present at or near the site, and whether a release could have occurred within or migrated to ESAs, resulting in a completed exposure pathway.

Screening level	A chemical-specific concentration level that IDEM has determined to be sufficiently protective at any site, provided it is applied under appropriate land use scenarios.
Sediment	Particulate matter typically consisting of mixtures of clay, silt, sand, organic matter, and various minerals that usually lie below water.
Semivolatile organic compound	Organic compound that volatilizes slowly under standard conditions.
Sentinel well	A ground water monitoring well located hydraulically down gradient of POC wells and along the centerline of the plume.
Site	The geographical area where an evaluation of potential environmental contaminants is desired. This may consist of an entire facility and surrounding property or a single area of concern within a facility or property, depending upon the applicable regulatory program. For purposes of IC 13-25-5, site means a parcel of real property for which an application has been submitted under IC 13-25-5-2.
Site characterization	The process of determining the nature and extent of potential contaminants in environmental media.
Site-specific level	A chemical specific concentration calculated using standard equations and one or more site-specific parameter values.
Slope factor	An upper bound estimate of the increased cancer risk per dose over a lifetime of exposure. Expressed in units of $(\text{mg}/\text{kg}\text{-day})^{-1}$.
Soil direct contact	A grouping of soil exposure pathways that assumes human exposure to soil chemicals through simultaneous skin contact, ingestion, and dust and volatile inhalation.
Soil horizon	A horizontal layer of soil with physical or chemical characteristics that separate it from layers above and below. Soil scientists generally name these horizons (from top to bottom) O, A, B, C, and R, and often subdivide them to reflect more specific characteristics within each layer. Considered together, these horizons constitute a soil profile.
Soil porosity	A measurement of the void areas between soil particles that may be filled with gas or water.
Soil saturation limit	The chemical concentration in soil at which the absorptive limits of the soil particles, the solubility limits of the soil pore water, and saturation of soil pore air have been reached.

Soil to ground water partitioning equation	The methodology for calculating screening levels for chemical migration from soil to ground water. The equation quantifies chemical concentrations in soil that have the potential to contaminate ground water (also referred to as the migration to ground water model).
Solubility limit	The maximum concentration of a chemical that will dissolve in water.
Source area	The horizontal and vertical geographical area where a chemical enters the environment.
Stability monitoring	A method that uses quantitative and temporal evaluation of ground water data to demonstrate that a ground water plume is not increasing in size or concentration and is not migrating.
Storativity	The volume of water an aquifer releases from or takes into storage per unit of surface area of the aquifer per unit change in head.
Stratum	A single layer of rock or soil regardless of thickness with internally consistent characteristics that distinguish it from contiguous layers. Each layer is generally one of a number of parallel layers that lie upon one another, laid down by natural forces. (plural: <i>strata</i>)
Surface water	<p>Aqueous media including but not limited to rivers, streams, wetlands, reservoirs, lakes, and ponds.</p> <p>Surface waters of the state include rivers, streams, creeks, free-flowing underground streams, reservoirs, lakes, and wetlands, (see 327 IAC 2-1-9[42] and 327 IAC 2-1.5-2[79]). All surface waters of the state must comply with all water quality standards contained under 327 IAC 2, including use designations, numeric and narrative water quality criteria, and the antidegradation standard.</p>
Susceptible areas	Areas for which standard models and screening levels do not apply. Susceptible areas include preferential pathways, wellhead protection areas, and ecologically susceptible areas.
SW-846	Standard methods of analysis, sampling, and quality assurance/quality control specified in U.S. EPA (2009h), as updated.
Synthetic precipitation leaching procedure	An analytical method designed to determine the mobility of analytes present in liquids, soils, and wastes in accordance with SW-846 Method 1312, as updated.

Systematic sampling	A method of placing sample locations at fixed intervals beginning at a random starting point, or according to a predefined pattern.
Target risk	A value that is combined with exposure and toxicity information to calculate a risk-based concentration for a specific application (for example, a preliminary remediation objective).
Threshold dose	The lowest amount or exposure level of a substance, below which adverse effects are not observed.
Transmissivity	A measure of the amount of water that can be transmitted horizontally by the full, saturated thickness of an aquifer with a hydraulic gradient of 1. Transmissivity is determined by multiplying the hydraulic conductivity of the aquifer by its saturated thickness.
Trip blank	A sample of analyte free media taken from the laboratory to the sampling site and returned to the laboratory unopened. A trip blank is used to document contamination from volatiles attributable to shipping and field handling procedures.
Unconditional closure	A closure that adequately addresses risk from a release without relying on any continuing activity and/or activity restriction.
Vapor intrusion	A process by which chemical vapors from a contaminant in soil or ground water migrate into a structure and adversely affect indoor air quality.
Volatile organic compound	Compounds that tend to evaporate at low to moderate temperatures (usually less than 200°F) due to their low vapor pressure.
Volatilization factor (soil to air)	The rate of change between the concentration of a chemical constituent in the soil and the flux of the volatilized constituent in the air.
Wellhead protection area	The surface and subsurface area, delineated by fixed radius, hydrogeological mapping, analytical, semi-analytical, or numerical flow/solute transport methods, that contributes water to a community public water supply system production well or wellfield and through which chemicals are likely to move and reach the well within a specified period.

