

GLOSSARY

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

The terms and definitions in this glossary have been compiled from existing documents. The documents consulted in the assembly of the glossary are listed at the end of the glossary.

Aboveground tank (AGT) - Any containment device and associated piping made of non-earthen material which is situated partially or substantially above ground.

Acid - Any chemical compound containing hydrogen capable of being replaced by positive elements or radicals to form salts. In terms of the dissociation theory, it is a compound which, on dissociation in solution, yields excess hydrogen ions. Acids lower the pH. Examples of acids or acidic substances are hydrochloric acid, tannic acid, and sodium acid pyrophosphate.

Acre-foot - Enough water to cover 1 acre to a depth of 1 foot; equal to 43,560 cubic feet or 325,851 gallons.

Activated carbon - A granular material usually produced by the roasting of cellulose base substances, such as wood or coconut shell, in the absence of air. It has an extremely porous structure and is used in water conditioning as an adsorbent for organic matter and certain dissolved gases.

Active soil gas investigation - The act of withdrawing or pumping soil gas samples from the ground and analyzing such samples using an on-site mobile laboratory with laboratory-grade certifiable instrumentation and procedures for real-time analysis of volatile organic compounds.

Adsorption - The adherence of ions or molecules in solution to the surface of solids.

Advection - The process by which solutes are transported by the bulk motion of flowing fluid.

Aeration - The process of bringing air into intimate contact with water, usually by bubbling air through the water to remove dissolved gases like carbon dioxide and hydrogen sulfide or to oxidize dissolved materials like iron compounds.

Air sparging - A remedial technique whereby air injected below the area of contamination in the saturated zone travels vertically and horizontally to form an oxygen-rich zone in which adsorbed and dissolved VOCs are volatilized. As vapors rise from the saturated zone to the unsaturated soils above, VOCs are captured by a soil vapor extraction system, which also removes adsorbed solvents from the unsaturated soils.

Air stripping - A mass transfer process in which a substance in solution in water is transferred to solution in a gas, usually air.

Alluvium - A general term for clay, silt, sand, gravel, or similar unconsolidated material deposited during comparatively recent geologic time by a stream or other body of running water as a sorted or semisorted sediment in the bed of the stream or on its floodplain or delta, or as a cone of fan at the base of a mountain slope.

Anisotropic - Having some physical property that varies with direction.

Annulus - The space between the drill string or casing and the wall of the borehole or outer casing.

Appeal process - Under Section 13320 of the Porter-Cologne Act, a party may petition any action (enforcement action, permits, basin plan amendments, prohibitions) or inaction (refusal, after request, to take a requested action on any issue) of the Regional Board within 30 days of action or within 60 days of inaction. Title 23, CCR, Section 2050 provides the required contents of the petition.

Applied Action Levels (AALs) - These values are based on maximum acceptable exposure of biological receptors to substances associated with hazardous waste sites and facilities. AALs are derived by considering health effects without dealing with technical feasibility, economic concerns, or other factors. California DOHS AALs are not enforceable drinking water standards in the same sense as MCLs are, but are levels at which DOHS strongly urges water purveyors to take corrective action to reduce the level of contamination the water they supply. AALs cease to exist when State MCLs are promulgated.

Aquiclude - A body of relatively impermeable rock that is capable of absorbing water slowly but functions as an upper or lower boundary of an aquifer and does not transmit groundwater rapidly enough to supply a well or spring.

Aquifer - An underground water-bearing (saturated) geological formation that is capable of yielding a significant amount of water to wells or springs.

Aquifer test - A test involving the withdrawal of measured quantities of water from, or the addition of water to a well and the measurement of resulting changes in head in the aquifer both during and after the period of discharge or addition. Performed for the purpose of determining the aquifer characteristics of transmissivity and/or storativity.

Aquitard - An underground geological formation of low permeability. A water-bearing formation of low yield.

ARAR - Applicable or Relevant and Appropriate Requirements

Artesian well - A well deriving its water from a confined aquifer in which the water level stands above the top of the aquifer.

Artificial recharge - Recharge at a rate greater than natural resulting from deliberate actions of man.

ASTM - American Society for Testing and Materials

atm - Atmosphere

Backwash (Well Development) - The surging effect or reversal of water flow in a well. Backwashing removes fine-grained material from the formation surrounding the borehole and, thus, can enhance well yield.

Barrier horizon - A relatively impermeable layer of significant thickness and areal extent.

Beneficial uses - Beneficial uses of the waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agriculture and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Bentonite grout - An aluminum silicate clay which, when a small amount of magnesium oxide is added, swells and forms a viscous suspension when mixed with water. Dried, it forms a hard cement-like material.

Best Available Technology (BAT) - The best technology, treatment techniques, or other means which after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration). For the purposes of setting MCLs for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon.

Biodegradation - The breakdown of chemical constituents through the biological processes of naturally occurring organisms.

Bioremediation - Process which involves the use of microorganisms to convert contaminants to less harmful substances in order to remediate contaminated soil or groundwater.

Biotransformation - Refers to chemical alteration of organic compounds brought about by microorganisms.

BNA - Base neutral acids

Borehole (boring) - A hole created by a drilling device.

Borehole log (geologic log) - The record of geologic units penetrated, drilling progress, depth, water level, sample recovery, volumes and types of materials used, and other significant facts regarding the drilling of a borehole.

Bridging - The development of gaps caused by obstructions in either grout or filter pack materials during emplacement. Also refers to blockage of particles in natural formation materials or artificial filter pack materials that may occur during well development.

BTEX - An acronym for Benzene, Toluene, Ethylbenzene, and Xylenes, which are volatile aromatic compounds present in tar, petroleum products, and various organic chemical formulations.

CAA - Clean Air Act

CAL-EPA - The California Environmental Protection Agency

Calibration - The evaluation of the accuracy of an instrument. Calibration is accomplished by measuring acceptable standards and determining any difference between the standard known value and the reading of the instrument.

Calibration standard (CAL) -- A solution prepared from the primary dilution standard solution and stock standard solutions of the internal standards and surrogate analytes. The CAL solutions are used to calibrate the instrument response with respect to analyte concentration.

Capillary fringe - The area that is between the saturated zone and the unsaturated (vadose) zone, where water is held by surface tension. The zone may be only one-half inch thick in gravels, but up to 40 feet thick in clays.

Casing - Stainless steel or plastic (PVC) tubing placed in a boring.

CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act of 1980. also known as Superfund implements USEPA emergency and long-term

CERCLIS - CERCLA Information System

Cesspool - A covered hole or pit for receiving drained sewage.

CFR - Code of Federal Regulations

Chain-of-custody (COC) - Document designed to track samples from the point of collection to delivery at the laboratory. All persons that have physical custody of the samples must sign and date acceptance and/or relinquishment. Samples are invalidated by an improper or broken chain-of-custody.

Clarifier - Underground concrete structure generally with 2 or 3 chambers designed to separate solids from a waste water before it enters the sewer system.

Clean Water Act - Enacted in 1972, is the principal federal water quality protection statute which requires states to adopt water quality standards for approval by the EPA for all surface waters in the U.S.; establishes a federal permit (NPDES) scheme for surface water regulation. a permit is needed when a pollutant is discharged to a surface water of the U.S. from a "point source". The permits incorporate technology-based effluent limitations and any more stringent limits necessary to achieve surface water quality standards.

Cleanup - Actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and/or the environment. The term cleanup is sometimes used interchangeably with the terms remedial action, removal action, response action, or corrective action.

Cleanup criteria - A standard on which a decision on the effectiveness of a cleanup action can be based.

Closure - Refers to the conclusion of environmental site investigation and remediation.

CLP - Contract Laboratory Program

COD - Chemical Oxygen Demand

Coefficient of permeability - An obsolete term that has been replaced by the term hydraulic conductivity.

Coefficient of storage - The volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head.

Coefficient of transmissivity - See Transmissivity.

Cone of depression - A depression in the groundwater table or potentiometric surface that has the shape of an inverted cone and develops around a well from which water is being withdrawn. It defines the area of influence of a well.

Confined aquifer - Geological formation capable of storing and transmitting water in usable quantities overlain by a less permeable or impermeable formation, confining layer, placing the aquifer under pressure.

Confining bed - A body of "impermeable" or low permeability material stratigraphically above or below one or more aquifers.

Consultant - Any California licensed engineer or geologist who is involved in the assessment or cleanup of a facility. The consultant is hired by the Responsible Party.

Contamination - The impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" shall include any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

Darcy's law - A derived equation for the flow of fluids on the assumption that the flow is laminar and that inertia can be neglected.

Decontamination - A variety of process used to clean equipment that has contacted formation material or groundwater that is known to be or suspected of being contaminated.

Density - Matter measured as mass per unit volume expressed in pounds per gallon (lb/gal), pounds per cubic ft (lb/ft³), and kilogram per cubic m (kg/m³).

Depth to ground water - Distance from the ground surface to the water table.

Detection Limit - The lowest concentration of a chemical that can be reliably reported to be different from zero concentration.

Discharge - A release of a substance(s) such as liquid waste, wastewater, solvents, gasoline, chemicals, etc., into the soil and/or ground water.

Discharge Area - An area in which subsurface water, including both ground water and water in the unsaturated zone, is discharged to the land surface, or to surface water.

Dispersion - The spreading and mixing of chemical constituents in groundwater caused by diffusion and mixing due to microscopic variations in velocities within and between pores.

Dissolved product - The water soluble components of hydrocarbon or other chemicals.

DNAPL - An acronym for denser-than-water nonaqueous phase liquid

DO - Dissolved oxygen

Downgradient - In the direction of decreasing hydrostatic head.

Downgradient well - A well that has been installed hydraulically downgradient of a site and is capable of detecting the migration of contaminants from a site. RCRA regulations require the installation of three or more downgradient wells, depending on the site-specific hydrogeological conditions and potential zones of contaminant migration.

DQO - data quality objectives; statements that specify the data needed to support decisions regarding response activities.

Drawdown - The distance between the static water level and the surface of the cone of depression.

DRI - Direct Reading Instruments

Drum storage area - A storage area for either virgin or waste chemicals generally contained in 55-gallon barrels. It is the most common method of chemical storage at industrial sites. A well designed storage area should be fenced and constructed with a containment system, such as a berm, and a surface sealant to contain any discharge and prevent it from impacting the soils.

Duplicate Sample - An additional sample taken near the field sample, co-located to determine total within-batch measurement error variance.

Eh - Oxygen-reduction potential

EP - Extraction procedure

Equipotential line - A contour line on the water table or potentiometric surface; a line along which the pressure head of groundwater in an aquifer is the same. Fluid flow is normal to these lines in the direction of decreasing fluid potential.

ER - Electrical resistivity

Extent of contamination - The depth and distance to which contaminants have respectively migrated vertically and laterally in the soil

eV - electron volt

Evapotranspiration - Loss of water from a land area through transpiration of plants and evaporation from the soil.

Fault - A fracture or a zone of fractures along which there has been displacement of the sides relative to one another parallel to the fracture.

Field duplicates (FD1 and FD2) – Two separate samples collected at the same time and place under identical circumstances and treated exactly the same throughout field and laboratory procedures. Analyses of FD1 and FD2 give a measure of the precision associated with sample collection, preservation and storage, as well as with laboratory procedures.

Field reagent blank (FRB) – Reagent water placed in a sample container in the laboratory and treated as a sample in all respects, including exposure to sampling site conditions, storage, preservation and all analytical procedures. The purpose of the FRB is to determine if method analytes or other interferences are present in the field environment.

Filter pack - Sand or gravel that is smooth, uniform, clean, well-rounded and siliceous. It is placed in the annulus of the well between the borehole wall and the well screen to minimize formation material from entering the screen.

Floaters - Lighter-than-water fluids, generally petroleum hydrocarbons or other organic liquids, capable of forming an immiscible layer that can float on the water table.

Flow line - Lines indicating the direction followed by groundwater toward points of discharge. Flow lines are perpendicular to equipotential lines.

Fracture - A break in a geological formation.

Free product - Liquid hydrocarbons or other chemical that accumulate on top of groundwater (capillary fringe).

FS - Feasibility Study

Gaining stream - A stream or reach of stream whose flow is being increased by inflow of ground water (an effluent stream).

Gas chromatography (GC) - An instrumental method for separating and identifying organic compounds, and measuring their concentrations. The various compounds pass through the chromatographic column at different rates; this time of travel through the column (called retention time) forms the basis for compound identification.

Gas chromatography/mass spectroscopy (GC/MS) - A tandem instrumental method for separating, identifying, and quantifying organic compounds. The GC separates the compounds. Compound identification is based on the compound retention time in the GC and on the mass spectral pattern. Compound quantification is normally done by measuring peak heights in the mass spectra.

General notice - A written statement from USEPA to a party notifying the party of its potential liability for the investigation and remediation of contamination at the party's facility.

gpm - Gallons per minute

GPR - Ground Penetrating Radar

Grab sample - Soil sample obtained without a coring device.

Graded - An engineering term pertaining to a soil or an unconsolidated sediment consisting of particles of several or many sizes or having a uniform or equable distribution of particles from coarse to fine.

Ground water - Water beneath the land surface contained in interconnected pores in the saturated zone that is under hydrostatic pressure. The water that enters wells and issues from springs.

Ground water divide - A high in the water table or other potentiometric surface from which ground water moves away in both directions normal to the ridge line.

Ground water elevation - The elevation of the water table at a particular place, as represented by the level of water in wells or other natural or artificial openings or depressions communicating with the zone of saturation.

Ground water flow direction - The direction of groundwater movement and any contaminants it contains; governed primarily by the hydraulic gradient.

Ground water monitoring - The periodic sampling and analysis of groundwater to determine the changes in concentration of chemical constituents in groundwater.

Groundwater monitoring well - A well that is constructed by one of a variety of techniques for the purpose of extracting ground water for physical, chemical, or biological testing, or for measuring water levels.

Ground water quality - Refers to chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use.

Ground water sampling - The collection and subsequent chemical analysis of ground water samples.

Grout - Fluid mixture of cement and water (neat cement) of a consistency that can be forced through a pipe and placed as required. Various additives, such as sand, bentonite, and hydrated lime, may be included in the mixture to meet certain requirements. Bentonite and water are sometimes used for grout.

Grouting - The operation by which grout is placed between the casing and the sides of the well bore to a predetermined height above the bottom of the well. This secures the casing in place and excludes water and other fluids in the well bore

HASP - Health and Safety Plan (see also Site Safety Plan)

Head - Combination of elevation above datum, and pressure energy imparted to a column of water. (Velocity energy is ignored due to low velocities of ground water.) Measured in length units i.e. feet or meters.

Head loss - That part of head energy which is lost because of friction as water flows.

Head space - The air space at the top of a water or soil sample.

Heterogeneous - Nonuniform in structure or composition throughout.

HNU - Indicates a photolization device for measuring aromatic compounds (e.g., benzene, toluene, xylene - petroleum hydrocarbons).

HSL - Hazardous Substance List (previous term for Target Administration Compound List)

HSO - Health and Safety Officer

NPDES - National Pollution Discharge Elimination System

HSWA - Hazardous and Solid Waste Amendments

Hydraulic conductivity - The rate of flow of water in gallons per day through a cross section of one square foot under a unit hydraulic gradient, at the prevailing temperature (gpd/ft²). In the SI System, the units are m³/day/m² or m/day.

Hydraulic containment - Refers to modification of hydraulic gradients, usually by pumping groundwater, injecting fluids, and/or cur-off-walls, to control (contain) the movement of contaminants in the saturated zone.

Hydraulic gradient - The inclination of the groundwater surface measured as the degree of deviation from horizontal in unconfined aquifers, which may be highly variable. Change in head per unit distance in a given direction, typically in the principal flow direction.

Hydrocarbon - Any compound which contains only atoms of carbon and hydrogen, e.g., benzene or toluene.

Hydrogeologic - Those factors that deal with subsurface waters and related geologic aspects of surface waters.

Hydrogeology - The study of the physical earth properties that control the distribution and occurrence of subsurface fluids and gases and the medium in which they occur.

Hydrograph - Graph that shows the groundwater surface as a function of time.

Hydropunch - A soil and water sampling tool that is forced to a depth of about five to 10 feet below the water table in order to retrieve a water sample through a one-way valve.

IDL - Instrument Detection Limit

IDLH - Immediately dangerous to life and health

Impermeable - Having a texture that does not permit water to move through it perceptibly under the head difference that commonly occurs in nature.

Industrial Hygienist - A qualified person who is responsible for: recognition of hazards, identification of controls, calibration of equipment, interpretation of standards, collection of samples, and preparation of Health and Safety Plans.

Interface - In hydrology, the contact zone between two different fluids.

Internal standard -- A pure analyte(s) added to a solution in known amount(s) and used to measure the relative responses of other method analytes that are components of the same solution. The internal standard must be an analyte that is not a sample component

Intrinsic Permeability - Pertaining to the relative ease with which a porous medium can transmit a liquid under a hydrostatic or potential gradient. It is a property of the porous medium and is independent of the nature of the liquid or the potential field.

IP - Ionization potential

Isoconcentration lines - Lines of equal contaminant concentrations.

Isotropic - Said of a medium whose properties are the same in all directions.

Laboratory duplicates (LD1 and LD2) -- Two sample aliquots taken in the analytical laboratory and analyzed separately with identical procedures. Analyses of LD1 and LD2 give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.

Laboratory performance check solution (LPC) -- A solution of one or more compounds used to evaluate the performance of the instrument system with respect to a defined set of method criteria.

Laboratory reagent blank (LRB) -- An aliquot of reagent water that is treated exactly as a sample including exposure to all glassware, equipment, solvents, reagents, internal standards, and surrogates that are used with other samples. The LRB is used to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

LACDOHS - Los Angeles County Department of Health Services.

LACDPW - Los Angeles County Department of Public Works.

LACFD - Los Angeles County Fire Department

Laminar flow - Water flow in which the stream lines remain distinct and in which the flow direction at every point remains unchanged with time. It is characteristic of the movement of groundwater.

Landfill - A waste management unit at which waste is discharged in or on land for disposal. It does not include surface impoundment, waste pile, land treatment, or soil amendments.

LDP - Leak Detection Program.

Leachate - The solution produced by the movement or percolation of liquid through soil or solid waste, and the subsequent dissolution of certain constituents in the water.

Leaching - Percolation of liquid or gases through soil or other materials.

LEL - Lower explosive limit

LEL - Lower explosive limit.

Lithology - The composition and texture of sediment or rock.

Local Implementing Agency (LIA) - County or city who regulates operations of underground storage tanks (USTs) and is the first contact when contamination is discovered.

Local Oversight Program (LOP) - Unit established in the Ventura County Environmental Health Division, in charge of overseeing cleanup of leaking USTs in Ventura County. Under contract with the State Water Resources Control Board.

Losing stream - A stream or reach of a stream that is losing water to the subsurface (also called influent stream).

LUFT - Leaking underground fuel tanks.

LUFT Manual - A State of California field manual to provide practical guidance to regulatory agencies with regard to the cleanup of contamination from underground fuel tanks.

LUST - Leaking underground storage tank

Manifest (soil, rinseate) - Documents hazardous material hauled away to a landfill or other disposal facility with generating, hauling and receiving facility operator's signature.

Maximum Contaminant Level Goal (MCLG) - The maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. Maximum contaminant level goals are nonenforceable health goals.

Maximum Contaminant Level (MCL) - The maximum contaminant levels for contaminants in drinking water, established by the U.S. Environmental Protection Agency and the California Department of Health Services.

mg/Kg - Milligrams per kilogram

mg/L - Milligrams per liter

Molecular diffusion - Dispersion of a chemical caused by the kinetic activity of the ionic or molecular constituents.

Naturally developed well - A well in which the screen is placed in direct contact with the aquifer materials; no filter pack is used.

ND - Non-detect.

Nested well - A set of multiple level wells constructed in the same borehole.

NPDES - National Pollutant Discharge Elimination System.

NPL - National Priorities List

NTU - Nephelometric Turbidity Unit.

Observation well - A well drilled in a selected location for the purpose of observing parameters such as water levels and pressure changes.

Operable Unit - A subset of a larger Superfund site, typically the subject of an investigation and cleanup. An operable unit may be defined by geographic area, type of contamination, or location of the contamination (soil, groundwater, etc.)

Optimum Yield - The best use of ground water that can be made under the circumstances; a use dependent not only upon hydrologic factors but also upon legal, social, and economic factors.

Organic compound - Chemicals containing carbon, with the exception of carbon dioxide and carbonates (such as calcium carbonate).

OVA - Organic Vapor Analyzer, gives a preliminary indication of the presence of certain volatile contaminants.

Overdraft - The average annual decrease in the amount of fresh ground water in storage that occurs during a long-time mean water supply period, under a particular set of physical conditions affecting the supply, use, and disposal of water in the ground water basin.

Paint booth - An enclosed or semi-enclosed area used for paint spraying operation.

Partial penetration - When the intake portion of the well is less than the full thickness of the aquifer.

Partitioning - Refers to a chemical equilibrium condition where a chemical's concentration is apportioned between two different phases according to the partition coefficient, which is the ratio of a chemical's concentration in one phase to its concentration in the other phase.

Perched water - Unconfined groundwater separated from a underlying main body of groundwater by an unsaturated zone.

Percolate - The movement of liquid through openings (interconnected voids) within soil, sediment, or the fractures in a rock.

Perforated casing - Well casings with holes or slots permitting the passage of fluids or vapors

Permeability - The property or capacity of a porous rock sediment, or soil for transmitting a fluid; it is a measure of the relative ease of fluid flow under unequal pressure.

pH - A designation for the degree of acidity or alkalinity of any material.

PID - Photo Ionization detector

Piezometer - A nonpumping well, generally of small diameter, which is used to measure the elevation of the water table or potentiometric surface. A piezometer generally has a short well screen, five feet or less, through which water can enter.

Plume - A mass of contamination extending outward from a source.

Pollution - An alteration of the quality of the waters of the state by waste to a degree which unreasonably affects such waters for beneficial uses, or facilities which serve such beneficial uses. "Pollution" may include "contamination".

Porosity - The percentage of the bulk volume of a rock or soil that is occupied by interstices, whether isolated or connected.

Porter-Cologne Water Quality Control Act (Water Code) - Enacted in 1969, the Act passed by the California Legislature provides a broad authority to the State and Regional Boards to regulate discharges to waters of the state. The Act establishes a permit program for discharges to land, surface waters, or ground water; provides enforcement authority and procedures; and provides authority to prepare Basin Plans and Statewide Plans.

Post remedial monitoring - Activities performed after completing cleanup operation to evaluate the effectiveness of the cleanup.

Potential sources - Sources of pollution including chemical spills, sumps, clarifiers, etc.

Potentially responsible parties (PRPs) - Individuals or companies who may be liable for the investigation and cleanup costs.

Potentiometric surface - An imaginary surface representing the total head of groundwater in a confined aquifer that is defined by the level to which water will rise in a well.

POTWs - Publically owned treatment works

ppb - Part per billion, ug/Kg, ug/L

PPE - Personal protective equipment

ppm - Part per million, mg/Kg, mg/L

Pump test - A test to determine aquifer characteristics. (See Aquifer Test).

PVC - Polyvinyl chloride

QA/QC - Quality assurance/quality control

QAPP - Quality Assurance Project Plan; A plan that describes protocols necessary to achieve the data quality objectives defined for an RI. (See SAP.)

Quality control sample (QCS) -- A sample matrix containing method analytes or a solution of method analytes in a water miscible solvent which is used to fortify reagent water or environmental samples. The QCS is obtained from a source external to the laboratory, and is used to check laboratory performance with externally prepared test materials.

Radius of influence - The horizontal distance from the center of a well to the outer limit of the cone of depression or to the limit of effective vacuum pressure.

RCRA - Resource Conservation and Recovery Act of 1978 which regulates monitoring, investigation, and corrective action activities at all hazardous treatment, storage, and disposal facilities.

RD - Remedial design

Recharge - The addition of water to the zone of saturation; also, the amount of water added.

Recharge area - The area where replenishment of an aquifer occurs by a natural process, such as rainfall, lakes, or streams, or by an artificial system such as a spreading ground, leaky pipe, or injection well.

Regional Boards (RWQCB) - The nine Regional Boards together with the California State Water Resources Control Board operate collectively to protect water quality within the State.

Remedial action - Activities taken to correct a problem such as fuel contamination of soil or groundwater.

Residual drawdown - The difference between the original static water level and the depth of water at a given instant during the recovery period.

Risk analysis - Relating residual contaminants with their long-term effect on groundwater quality and potential hazard to human life.

RI - Remedial Investigation

ROD - Record of Decision

RPM - EPA Remedial Project Manager

Runoff - That part of precipitation flowing to surface streams.

Safe yield - The amount of naturally occurring groundwater that can be withdrawn from an aquifer on a sustained basis, economically and legally, without impairing the native groundwater quality or creating an undesirable effect such as environmental damage. Similar to sustained yield.

SAP - Sample and analysis plan; Consists of a quality assurance project plan (QAPP) and a field sampling plan (FSP).

SARA - Superfund Amendments and Reauthorization Act of 1986

Saturated zone - A subsurface zone in which all the pore space or interstitial spaces in the zone are filled with water under pressure equal to or greater than atmospheric pressure.

SCAQMD - South Coast Air Quality Management District.

SCBA - Self-contained breathing apparatus

SDWA - Safe Drinking Water Act

SIC - Standard industrial classification

Sieve analysis - Determination of the particle-size distribution of a soil, sediment, or rock by measuring the percentage of the particles that will pass through standard sieves of various sizes.

Site assessment - Activities taken to determine the nature and extent of contamination and the physical properties of the soil and water in which it occurs.

Site inspection (SI) - The act of examining carefully a site to locate sources of contaminants.

Slug-test - An aquifer test made by either pouring a small instantaneous charge of water into a well or by withdrawing a slug of water from the well. A synonym for this test, when a slug of water is removed from the well, is a bail-down test.

Slurry - A thin mixture of liquid, especially water, and any of several finely divided substances, such as cement or clay particles.

Soil assessment - Activities taken that involve soil and soil gas sampling and analyses and the subsequent evaluation of the results to determine the presence or absence of contaminants as well as the nature and extent of contamination and the physical properties of the soil in which it occurs.

Soil gas - Vapors (gas) that occupy the small spaces between soil particles above the saturated zone.

Solvent - Any substance that can dissolve another substance.

SOPs - standard operating procedures

SP - Spontaneous potential

Special notice letters - Special notice letters are sent to potentially responsible parties to offer them an opportunity to enter into negotiations with USEPA for conducting specific remedial activities such as RI/FS or the implementation of a remedial action. The Notice may also contain a demand for payment of past costs.

Specific capacity - The rate of discharge of a water well per unit of drawdown, commonly expressed in gpm/ft or m³/day/m. It varies with duration of discharge.

Specific gravity - The weight of a particular volume of any substance compared to the weight of an equal volume of water at a reference temperature.

Specific retention - The ratio of the volume of water that a given body of rock or soil will hold against the pull of gravity to the volume of the body itself. It is usually expressed as a percentage.

Specific yield - The ratio of the volume of water that a given mass of saturated rock or soil will yield by gravity to the volume of that mass. This ratio is stated as a percentage.

SSC - Site Safety Coordinator

State Board (SWRCB) - California State Water Resources Control Board.

Static water level - The level of water in a well that is not being affected by withdrawal of groundwater.

Stock standard solution - A concentrated solution containing a single certified standard that is a method analyte, or a concentrated solution of a single analyte prepared in the laboratory with an assayed reference compound. Stock standard solutions are used to prepare primary dilution standards.

Storage coefficient - See Coefficient of storage.

Storativity - See Coefficient of storage.

Stratigraphy - The arrangement of sediment in layers or strata.

Subsurface contamination - Any type of contamination located below the ground surface.

Superfund - Commonly-used name for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a federal law enacted in 1980 and amended in 1986. CERCLA enables USEPA to respond to hazardous sites that threaten the public health and the environment where owners or operators are either unwilling or unable to address the contamination themselves.

Surrogate analyte - A pure analyte(s), which is extremely unlikely to be found in any sample, and which is added to a sample aliquot in known amount(s) before extraction and is measured with the same procedures used to measure other sample components. The purpose of a surrogate analyte is to monitor method performance with each sample.

Sustained yield - Continuous long-term ground water production without progressive storage depletion or other undesirable result. See also safe yield.

TDS - Total dissolved solids

TEGD - The RCRA groundwater monitoring Technical Enforcement Guidance Document, (Sept. 1986) handbook addressing EPA's regulatory approach to hydrogeologic investigations at a RCRA hazardous waste facility.

Threshold limit - A chemical concentration above which adverse health or environmental effects may occur.

TLV - Threshold limit value

TOC - Total organic carbon

TOH - Total Organic Halides

Tortuosity - Sinuosity of the actual flow path in porous medium; it is the ratio of the length of the flow path divided by the length of the sample.

Total dissolved solids (TDS) - A term that expresses the quantity of dissolved material in a sample of water, either the residue on evaporation, dried at 356°F (180°C), or, for many waters that contain more than about 1,000 mg/l, the sum of the chemical constituents.

TPH - Total petroleum hydrocarbon.

Transition seal - A layer of sodium bentonite placed above the filter pack and below the annular seal in a monitoring well in order to prevent contamination from entering the filter pack.

Transmissivity - The rate at which water is transmitted through a unit width of an aquifer under a unit hydraulic gradient. Transmissivity values are given in gallons per minute through a vertical section of an aquifer one foot wide and extending the full saturated height of an aquifer under a hydraulic gradient of 1 in the English Engineering system; in the International System, transmissivity is given in cubic meters per day through a vertical section of an aquifer one meter wide and extending the full saturated height of an aquifer under a hydraulic gradient of 1.

Transpiration - The process by which water absorbed by plants, usually through the roots, is evaporated into the atmosphere from the plant surface.

Treatment - When used in connection with hazardous waste, any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or to recover energy or material resources from the waste, or to render such waste nonhazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

TSCA - Toxic Substances Control Act

TSDF - Treatment, Storage, and Disposal Facility

Turbulent flow - Water flow in which the flow lines are confused and heterogeneously mixed. It is typical of flow in surface-water bodies.

UEL - Upper explosive limit

µg/L - Micrograms per liter

Unconfined aquifer - An aquifer where the water table is exposed to the atmosphere through openings in the overlying materials.

Underground Storage Tank (UST) - Any containment device and associated piping made of non-earthen material which is situated partially or substantially below ground.

Unique site feature - Natural or man-made physical characteristic of the site which could influence the movement and direction of contaminants through the subsurface.

Upgradient - In the direction of increasing static head.

Upgradient well - One or more wells placed hydraulically upgradient of a site, that are capable of yielding ground water samples representative of regional conditions, and that are not affected by activities at the site.

USCS - Unified Soil Classification System

USEPA - The Federal Environmental Protection Agency.

USGS - U.S. Geological Survey

UV - Ultraviolet

Vadose zone (unsaturated zone) - A zone that is not saturated by groundwater, but may have high moisture content and local areas of saturation (perched zones). This zone extends between the ground surface and the water table and includes the capillary fringe overlying the water table.

Vapor degreasers - An open-top aboveground tank where metal parts can be dipped into liquid or vaporized chlorinated solvents for removing oil and grease.

Vapor extraction - A remedial action involving the forced extraction of gas (with volatile contaminants) from the vadose zone,

Viscosity - The property of a substance to offer internal resistance to flow. Specifically, the ratio of the shear stress to the rate of shear strain.

VOA - Volatile organic analysis

Volatile organic compounds (VOCs) - Organic compounds (carbon-containing) that evaporate readily at room temperature, which are commonly used in dry cleaning, paint stripping, metal plating, electronics manufacturing and machine degreasing.

Waste - Includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation of whatever nature, including such waste placed within containers of whatever nature prior to, and for purposes of disposal.

Water table - The surface of an unconfined groundwater at which the pressure is equal to that of the atmosphere.

WDR - Waste Discharge Requirements

Well development - The act of restoring the hydraulic conductivity of the formation and removing all foreign sediment after constructing the monitoring well to ensure turbid-free groundwater samples.

Well purging - The removal of water from a well to bring representative groundwater into the casing during sample collection activities.

Well seal - The seal placed from the top of the filter pack to the ground surface. The preferred design is a seal of three to four feet thick sodium bentonite placed directly on top of the filter pack with the remaining annular space sealed with a cement grout from the top of the bentonite to the ground surface.

Well yield - The volume of water discharged from a well in gallons per minute or cubic meters per day.

WIP - Well Investigation Program; Regional Board program, under authority of the California Water Code, Section 13304, which locates and abates the sources of pollutants affecting public drinking water wells and oversees the remediation of the pollution.

WRR - Water Reclamation Requirements