Term
Abiotic Definition: Characterized by absence of life; abiotic materials include non-living environmental media (e.g., water, soils, sediments); abiotic characteristics include such factors as light, temperature, pH, humidity, and other physical and chemical influences.
Absorbed Dose Definition: The amount of a substance penetrating the exchange boundaries of an organism after contact. Absorbed dose for the inhalation and ingestion routes of exposure is calculated from the intake and the absorption efficiency. Absorbed dose for dermal contact depends on the surface area exposed and absorption efficiency.
Absorption Definition: Absorption is the passage of one substance into or through another.
Absorption Efficiency Definition: A measure of the proportion of a substance that a living organism absorbs across exchange boundaries (e.g., gastrointestinal tract).
Accuracy Definition: The degree to which a measurement reflects the true quantitative value of a variable.
Acute

Term
Definition: Having a sudden onset or lasting a short time. An acute stimulus is severe enough to induce a response rapidly. The word acute can be used to define either the exposure or the response to an exposure (effect). The duration of an acute aquatic toxicity test is generally 4 days or less and mortality is the response usually measured.
Acute Response Definition: The response of (effect on) an organisms which has a rapid onset. A commonly measured rapid-onset response in toxicity tests is mortality.
Acute Tests Definition: A toxicity test of short duration, typically 4 days or less (i.e., of short duration relative to the lifespan of the test organism).
Administered Dose Definition: The mass of a substance given to an organism and in contact with an exchange boundary (i.e., gastrointestinal tract) per unit wet body weight (BW) per unit time (e.g., mg/kgBW/day).
Adsorption Definition: Adsorption is the adhesion of molecules of gas, liquid, or dissolved solids to a surface. The term also refers to a method of treating wastes in which activated carbon is used to remove organic compounds from wastewater. See also Carbon Adsorption.
Adverse Ecological Effects Definition: Changes that are considered undesirable because they alter valued structural or functional characteristics of ecosystems or their components. An evaluation of adversity may consider the type, intensity, and scale of the effect as well as the potential for

Term
recovery.
Agent Definition: Any physical, chemical, or biological entity that can induce an adverse response (synonymous with stressor).
American Society for Testing and Materials Definition: The ASTM sets standards for many services, including methods of sampling and testing of hazardous waste and media contaminated with hazardous waste. Acronym: ASTM
Applicable or Relevant and Appropriate Requirements Definition: Applicable requirements are those clean-up standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, response action, location, or other circumstance at a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site. "Relevant and appropriate" requirements are those clean-up standards which, while not "applicable" at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. ARARs can be action-specific, location-specific, or chemical-specific. Acronym: ARARs
Aquifer Definition: An aquifer is an underground rock formation composed of such materials as sand, soil, or gravel that can store ground water and supply it to wells and springs.

Term
Area Use Factor Definition: The ratio of an organism's home range, breeding range, or feeding/foraging range to the area of contamination of the site under investigation. (Pertains to Ecological Risk Assessments)
Aromatics Definition: Aromatics are organic compounds that contain 6-carbon ring structures, such as creosote, toluene, and phenol, that often are found at dry cleaning and electronic assembly sites.
Assessment Endpoint Definition: An explicit expression of the environmental value that is to be protected, operationally defined by an ecological entity and its attributes. For example, salmon are valued ecological entities; reproduction and age class structure are some of their important attributes. Together "salmon reproduction and age class structure" form an assessment endpoint. (Pertains to Ecological Risk Assessments)
Attribute Definition: A quality or characteristic of an ecological entity. An attribute is one component of an assessment endpoint.
Baseline Risk Assessment Definition: A baseline risk assessment is an assessment conducted before cleanup activities begin at a site to identify and evaluate the threat to human health and the environment. After remediation has been completed, the information obtained during a baseline risk assessment can be used to determine whether the cleanup levels were reached.

Term
Bedrock Definition: Bedrock is the rock that underlies the soil; it can be permeable or non-permeable. See also Confining Layer.
Benthic Community Definition: The community of organisms dwelling at the bottom of a pond, river, lake, or ocean. (pertains to ecological risk assessments)
Benzene, Toluene, Ethylbenzene, And Xylene Definition: BTEX is the term used for benzene, toluene, ethylbenzene, and xylene-volatile aromatic compounds typically found in petroleum products, such as gasoline and diesel fuel. Acronym: BTEX
Best Demonstrated Available Technology Definition: A BDAT is a technology that has demonstrated the ability to reduce a particular contaminant to a lower concentration than other currently available technologies. BDATs can change with time as technologies evolve. Acronym: BDAT
Bioaccumulation Definition: General term describing a process by which chemicals are taken up by an organism either directly from exposure to a contaminated medium or by consumption of food containing the chemical.
Bioaccumulation Factor

Term
Definition: The ratio of the concentration of a contaminant in an organism to the concentration in the ambient environment at steady state, where the organism can take in the contaminant through ingestion with its food as well as through direct contact. Acronym: BAF
Bioassay Definition: Test used to evaluate the relative potency of a chemical by comparing its effect on living organisms with the effect of a standard preparation on the same type of organism. Bioassay and toxicity tests are not the same-see toxicity test. Bioassays often are run on a series of dilutions of whole effluents. (Pertains to Ecological Risk Assessments)
Bioassessment Definition: A general term referring to environmental evaluations involving living organisms; can include bioassays, community analyses, etc. (Pertains to Ecological Risk Assessments)
Bioavailability Definition: The degree to which a material in environmental media can be assimilated by an organism.
Bioconcentration Definition: A process by which there is a net accumulation of a chemical directly from an exposure medium into an organism.
Biodegradability

Term
Definition: Biodegradability is the capability of a substance to break down into simpler substances, especially into innocuous products, by the actions of living organisms (that is, microorganisms).
Biodegrade Definition: Decompose into more elementary compounds by the action of living organisms, usually referring to microorganisms such as bacteria.
Biomagnification Definition: Result of the process of bioaccumulation and biotransfer by which tissue concentrations of chemicals in organisms at one trophic level exceed tissue concentrations in organisms at the next lower trophic level in a food chain.
Biomarker Definition: Biochemical, physiological, and histological changes in organisms that can be used to estimate either exposure to chemicals or the effects of exposure to chemicals.
Biomonitoring Definition: Use of living organisms as "sensors" in environmental quality surveillance to detect changes in environmental conditions that might threaten living organisms in the environment.
Body Burden Definition: The concentration or total amount of a substance in a living organism; implies accumulation of a substance above background levels in exposed organisms.

Term
Breeding Range Definition: The area utilized by an organism during the reproductive phase of its life cycle and during the time that young are reared. (Pertains to Ecological Risk Assessments)
Brownfields Definition: Brownfields sites are abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination.
Bulk Sediment Definition: Field collected sediments used to conduct toxicity tests; can contain multiple contaminants and/or unknown concentrations of contaminants.
Characterization of Ecological Effects Definition: A portion of the analysis phase of ecological risk assessment that evaluates the ability of a stressor to cause adverse effects under a particular set of circumstances.
Characterization of Exposure Definition: A portion of the analysis phase of ecological risk assessment that evaluates the interaction of the stressor with one or more ecological components. Exposure can be expressed as co-occurrence, or contact depending on the stressor and ecological component involved.
Chronic

Term
Definition: Involving a stimulus that is lingering or continues for a long time; often signifies periods from several weeks to years, depending on the reproductive life cycle of the species. Can be used to define either the exposure or the response to an exposure (effect). Chronic exposures typically induce a biological response of relatively slow progress and long duration.
Chronic Response Definition: The response of (or effect on) an organism to a chemical that is not immediately or directly lethal to the organism.
Chronic Tests Definition: A toxicity test used to study the effects of continuous, long-term exposure of a chemical or other potentially toxic material on an organism.
Clean Air Act Definition: The CAA is a federal law passed in 1970 that requires EPA to establish regulations to control the release of contaminants to the air to protect human health and environment. Acronym: CAA
Clean Water Act Definition: CWA is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to U.S. waters. This law gave EPA the authority to set wastewater discharge standards on an industry-by-industry basis and to set water quality standards for all contaminants in surface waters. Acronym: CWA

Term
Cleanup Definition: Cleanup is the term used for 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 sometimes is used interchangeably with the terms remedial action, removal action, response action, or corrective action.
Community Definition: An assemblage of populations of different species within a specified location and time. (pertains to ecological assessments)
Community Advisory Group Definition: A committee, task force, or board comprised of citizens affected by a hazardous waste site. CAGs provide a public forum for community members to present and discuss their needs and concerns about the decision-making process at sites affecting them. Acronym: CAG
Comparative Risk Assessment Definition: A process that generally uses a professional judgment approach to evaluate the relative magnitude of effects and set priorities among a wide range of environmental problems (e.g., U.S. EPA, 1993d). Some applications of this process are similar to the problem formulation portion of an ecological risk assessment in that the outcome may help select topics for further evaluation and help focus limited resources on areas having the greatest risk reduction potential. In other situations, a comparative risk assessment is conducted more like a preliminary risk assessment. For example, EPA's Science Advisory Board used professional judgment and an ecological risk assessment approach to analyze future ecological risk scenarios and risk management alternatives (U.S. EPA,

Term
1995e).
Complexation Definition: Formation of a group of compounds in which a part of the molecular bonding between compounds is of the coordinate type.
Comprehensive Environmental Response, Compensation, and Liability Act Definition: The NCP defines CERCLIS, in part, as "EPA's comprehensive data base and management system that inventories and tracks released addressed or needing to be addressed by the Superfund program. CERCLIS contains the official inventory of CERCLA sites and supports EPA's planning and tracking functions." See also Superfund. Acronym: CERCLA
Comprehensive Environmental Response, Compensation, and Liability Information System Definition: The NCP defines CERCLIS, in part, as "EPA's comprehensive data base and management system that inventories and tracks released addressed or needing to be addressed by the Superfund program. CERCLIS contains the official inventory of CERCLA sites and supports EPA's planning and tracking functions." Acronym: CERCLIS
Comprehensive Environmental Response, Compensation, and Liability Information System 3 Definition: The newest version of the Comprehensive Environmental Response, Compensation, and Liability Information System, EPA's primary Superfund database. CERCLIS 3 enables Superfund staff nationwide to share site specific information and eventually with other federal partners and the public.

Term
Acronym: CERCLIS 3
Concentration Definition: The relative amount of a substance in an environmental medium, expressed by relative mass (e.g., mg/kg), volume (ml/L), or number of units (e.g., parts per million).
Concentration-Response Curve Definition: A curve describing the relationship between exposure concentration and percent of the test population responding.
Conceptual Model Definition: Describes a series of working hypotheses of how the stressor might affect ecological components. Describes ecosystem or ecosystem components potentially at risk, and the relationships between measurement and assessment endpoints and exposure scenarios.
Conceptual Site Model Definition: A CSM, a key element used in facilitating cleanup decisions during a site investigation, is a planning tool that organizes information that already is known about a site and identifies the additional information necessary to support decisions that will achieve the goals of the project. The project team then uses the CSM to direct field work that focuses on the information needed to remove significant unknowns from the model. The CSM serves several purposes - as a planning instrument; as a modeling and data interpretation tool; and as a means of communication among members of a project team, decision makers, stakeholders, and field personnel. Acronym: CSM

Term
Confining Layer Definition: A "confining layer" is a geological formation characterized by low permeability that inhibits the flow of water. See also Bedrock and Permeability.
Contaminant Definition: A contaminant is any physical, chemical, biological, or radiological substance or matter present in any media at concentrations that may pose a threat to human health or the environment.
Contaminant of (Ecological) Concern Definition: A substance detected at a hazardous waste site that has the potential to affect ecological receptors adversely due to its concentration, distribution, and mode of toxicity.
Contaminants of Potential Concern Definition: Chemicals that are potentially site-related and whose data are of sufficient quality for use in a quantitative risk assessment.
Control Definition: A treatment in a toxicity test that duplicates all the conditions of the exposure treatments but contains no test material. The control is used to determine the response rate expected in the test organisms in the absence of the test material.
Corrective Measure Study

Term
Definition: If the potential need for corrective measures is verified during a RCRA Facility Investigation (RFI), the owner or operator of a facility is then responsible for performing a CMS. A CMS is conducted to identify, evaluate, and recommend specific corrective measures based on a detailed engineering evaluation. Using data collected during the RFI, the CMS demonstrates that proposed measures will be effective in controlling the source of contamination, as well as problems posed by the migration of substances from the original source into the environment. The measures also must be assessed in terms of technical feasibility, ability to meet public health protection requirements and protect the environment, possible adverse environmental effects, and institutional constraints. See also RCRA Facility Investigation. Acronym: CMS
Correlation Definition: An estimate of the degree to which two sets of variables vary together, with no distinction between dependent and independent variables.
Corrosivity Definition: Corrosive wastes include those that are acidic and capable of corroding metal such as tanks, containers, drums, and barrels.
Critical Exposure Pathway Definition: An exposure pathway which either provides the highest exposure levels or is the primary pathway of exposure to an identified receptor of concern.
Cumulative Distribution Function

Term
Definition: Cumulative distribution functions are particularly useful for describing the likelihood that a variable will fall within different ranges of x. F(x) (i.e., the value of y at x in a CDF plot) is the probability that a variable will have a value less than or equal to x. Acronym: CDF
Cumulative Ecological Risk Assessment Definition: A process that involves consideration of the aggregate ecological risk to the target entity caused by the accumulation of risk from multiple stressors.
Data Quality Definition: The term data quality refers to all features and characteristics of data that bear on its ability to meet the stated or implied needs and expectations of the user.
Data Quality Objective Definition: RAGS Volume I, Part A, Chapter 4 defines a DQO as "qualitative and quantitative statements to ensure that data of know and documented quality are obtained during an RI/FS to support an Agency decision." DQOs are qualitative and quantitative statements specified to ensure that data of known and appropriate quality are obtained. The DQO process is a series of planning steps, typically conducted during site assessment and investigation, that is designed to ensure that the type, quantity, and quality of environmental data used in decision making are appropriate. The DQO process involves a logical, step-by-step procedure for determining which of the complex issues affecting a site are the most relevant to planning a site investigation before any data are collected. Acronym: DQO
Degradation

Term
Definition: Conversion of an organic compound to one containing a smaller number of carbon atoms.
Dense Nonaqueous Phase Liquid Definition: A DNAPL is one of a group of organic substances that are relatively insoluble in water and more dense than water. DNAPLs tend to sink vertically through sand and gravel aquifers to the underlying layer. Acronym: DNAPL
Deposition Definition: The lying, placing, or throwing down of any material.
Depuration Definition: A process that results in elimination of toxic substances from an organism.
Depuration Rate Definition: The rate at which a substance is eliminated from an organism.
Detection Limit Definition: The lowest concentration of a chemical that can be distinguished reliably from a zero concentration.
Deterministic Analysis

Term
Definition: Deterministic Analysis (as opposed to probabilistic analysis) calculation and expression of health risks as single numerical values or "single point" estimates of risk. In risk assessments, the uncertainty and variability are discussed in a qualitative manner.
Dietary Accumulation Definition: The net accumulation of a substance by an organism as a result of ingestion in the diet.
Direct Effect (toxin) Definition: An effect where the stressor itself acts directly on the ecological component of interest, not through other components of the ecosystem.
Direct Push Sampling Definition: Direct push sampling is a technique in which a sampling tube is hydraulically pushed or driven into the subsurface, collecting material as it advances. This technique can be used when sampling for constituents, including VOCs, SVOCs, PCBs, and PAHs.
Disposal Definition: Disposal is the final placement or destruction of toxic, radioactive or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental release. Disposal may be accomplished through the use of approved secure landfills, surface impoundments, land farming, deep well injection, or ocean dumping.
Disturbance

Term
Definition: Any event or series of events that disrupts ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment (modified from White and Pickett, 1985).
Dose Definition: A measure of exposure. Examples include (1) the amount of a chemical ingested, (2) the amount of a chemical absorbed, and (3) the product of ambient exposure concentration and the duration of exposure.
Dose-Response Curve Definition: Similar to concentration-response curve except that the dose (i.e. the quantity) of the chemical administered to the organism is known. The curve is plotted as Dose versus Response.
Duplicate Definition: A sample taken from and representative of the same population as another sample. Both samples are carried through the steps of sampling, storage, and analysis in an identical manner.
Dynamic Work Plan Definition: A dynamic work plan is a work plan that allows project teams to make decisions in the field about how site activities will progress. Dynamic work plans provide the strategy for the way in which dynamic field activities will take place. As such, they document a flexible, adaptive sampling and analytical strategy. Dynamic work plans are supported by the rapid turnaround of data collected, analyzed, and interpreted in the field.
Easement

Term
Definition: An easement is a right to use the land of another for a specific purpose, such as a right-of-way or a utility.
Ecological Component Definition: Any part of an ecosystem, including individuals, populations, communities, and the ecosystem itself.
Ecological Entity Definition: A general term that may refer to a species, a group of species, an ecosystem function or characteristic, or a specific habitat. An ecological entity is one component of an assessment endpoint.
Ecological Relevance Definition: One of the three criteria for assessment endpoint selection. Ecologically relevant endpoints reflect important characteristics of the system and are functionally related to other endpoints.
Ecological Risk Assessment Definition: The application of a formal framework, analytical process, or model to estimate the effects of human actions(s) on a natural resource and to interpret the significance of those effects in light of the uncertainties identified in each component of the assessment process. Such analysis includes initial hazard identification, exposure and dose-response assessments, and risk characterization.
Ecosystem Definition: The biotic community and abiotic environment within a specified location and time, including the chemical, physical, and biological relationships among the biotic and abiotic components.

Term
Ecotoxicity Definition: The study of toxic effects on nonhuman organisms, populations, or communities.
Electrochemical Detector Kits Definition: Electrochemical test kits use the electrical charges of ions that make up the target analyte(s) to identify and quantify the target analyte(s) in a sample. Typically, the ions are attracted to an anode or a cathode or both, depending on their charge, resulting in the generation of an electrical current that is measured and converted into a sample concentration by the unit's display or electronics. An analyte-specific catalyst can be used to aid in the reaction. The self-contained kits include all the equipment and supplies necessary to produce an analytical result.
Electromagnetic Geophysics Definition: EM geophysics refers to technologies used to detect spatial (horizontal and vertical) differences in subsurface electromagnetic characteristics. The data collected provide information about subsurface environments. Acronym: EM Geophysics
Electromagnetic Induction Definition: EM induction is a geophysical technology used to create a magnetic field beneath the earth's surface, which in turn causes a secondary magnetic field to form around nearby objects that have conductive properties, such as ferrous and nonferrous metals. The secondary magnetic field then is used to detect and measure buried debris. Acronym: EM Induction
Emergency Removal

Term
Definition: An emergency removal is an action initiated in response to a release of a hazardous substance that requires on-site activity within hours of a determination that action is appropriate.
Emerging Technology Definition: An emerging technology is an innovative technology that currently is undergoing bench-scale testing. During bench-scale testing, a small version of the technology is built and tested in a laboratory. If the technology is successful during bench-scale testing, it is demonstrated on a small scale at field sites. If the technology is successful at the field demonstrations, it often will be used full scale at contaminated waste sites. As the technology is used and evaluated at different sites, it is improved continually. See also Established Technology.
Enforcement Action Definition: An enforcement action is an action undertaken by EPA under authority granted to it under various federal environmental statutes, such as CERCLA, RCRA, CAA, CWA, TSCA, and others. For example, under CERCLA, EPA may obtain voluntary settlement or compel potentially responsible parties (PRP) to implement removal or remedial actions when releases of hazardous substances have occurred. See also Comprehensive Environmental Response, Compensation, and Liability Act; Potentially Responsible Party; and Removal Action.
Engineered Control Definition: An engineered control, such as barriers placed between a contaminated area and the rest of a site, is a method of managing environmental and health risks. Engineered controls can be used to limit exposure pathways.
Environmental Audit

Term
Definition: An environmental audit usually refers to a review or investigation that determines whether an operating facility is in compliance with relevant environmental regulations. The audit may include checks for possession of required permits, operation within permit limits, proper reporting, and record keeping. The typical result is a corrective action or compliance plan for the facility.
Environmental Impact Statement Definition: Environmental impact statements are prepared under the National Environmental Policy Act by Federal agencies as they evaluate the environmental consequences of proposed actions. EISs describe baseline environmental conditions; the purpose of, need for, and consequences of a proposed action; the no-action alternative; and the consequences of a reasonable range of alternative actions. A separate risk assessment could be prepared for each alternative, or a comparative risk assessment might be developed. However, risk assessment is not the only approach used in EISs. Acronym: EIS
Environmental Risk Definition: Environmental risk is the chance that human health or the environment will suffer harm as the result of the presence of environmental hazards.
Environmental Site Assessment Definition: An ESA is the process that determines whether contamination is present at a site. Acronym: ESA
EPA Risk Assessor

Term
Definition: The risk assessor responsible for reviewing the risk assessment on behalf of EPA.
Established Technology Definition: An established technology is a technology for which cost and performance information is readily available. Only after a technology has been used at many different sites and the results fully documented is that technology considered established. The most frequently used established technologies are incineration, solidification and stabilization, and pump-and-treat technologies for ground water.
Ethyl Tertiary Butyl Ether Acronym: ETBE
Ex Situ Definition: The term ex situ or "moved from its original place," means excavated or removed.
Exposure Definition: The contact or co-occurrence of a stressor with a receptor.
Exposure Medium Definition: The contaminated environmental medium to which an individual is exposed, such as soil, water, sediment and air.
Exposure Pathway

Term
Definition: RAGS Volume I, Part A, Chapter 6 defines exposure pathway as "the course a chemical or physical agent takes from a source to an exposed organism. An exposure pathway describes a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from a site. Each exposure pathway includes a source or release from a source, an exposure point, and an exposure route. If the exposure point differs from the source, a transport/exposure medium (e.g. air) or media (in cases of intermedia transfer) also is included.
Exposure Pathway Model Definition: A model in which potential pathways of exposure are identified for the selected receptor species.
Exposure Point Definition: The potential contact between a person and a contaminant within an exposure medium.
Exposure Point Concentration Definition: The value that represents a conservative estimate of the chemical concentration available from a particular medium or route of exposure. See definitions for Medium EPC and Route EPC, which follow.
Exposure Profile Definition: The product of characterizing exposure in the analysis phase of ecological risk assessment. The exposure profile summarizes the magnitude and spatial and temporal patterns of exposure for the scenarios described in the conceptual model.
Exposure Route

Term
Definition: The mechanism for which a contaminant comes in contact with a person (e.g., by ingestion, inhalation, dermal contact).
Exposure Scenario Definition: A set of assumptions concerning how an exposure takes place, including assumptions about the exposure setting, stressor characteristics, and activities of an organism that can lead to exposure.
False Negative Definition: The conclusion that an event (e.g., response to a chemical) is negative when it is in fact positive.
False Positive Definition: The conclusion that an event is positive when it is in fact negative.
Fate Definition: Disposition of a material in various environmental compartments (e.g. soil or sediment, water, 5 air, biota) as a result of transport, transformation, and degradation.
Feeding Area Preferred Term: Forage Area
Filtration Definition: Filtration is a treatment process that removes solid matter from water by passing the water through a porous medium, such

Term
as sand or a manufactured filter.
Flame Ionization Detector Definition: A FID is an instrument often used in conjunction with gas chromatography to measure the change of signal as analytes are ionized by a hydrogen-air flame. It also is used to detect phenols, phthalates, PAHs, VOCs, and petroleum hydrocarbons. See also Gas Chromatography. Acronym: FID
Food-Chain Transfer Definition: A process by which substances in the tissues of lower-trophic-level organisms are transferred to the higher-trophic-level organisms that feed on them.
Forage Area Definition: The area utilized by an organism for hunting or gathering food.
Fourier Transform Infrared Spectroscopy Definition: A fourier transform infrared spectroscope is an analytical air monitoring tool that uses a laser system chemically to identify contaminants.
Fumigant Definition: A fumigant is a pesticide that is vaporized to kill pests. They often are used in buildings and greenhouses.

Term
Gas Chromatography Definition: Gas chromatography is a technology used for investigating and assessing soil, water, and soil gas contamination at a site. It is used for the analysis of VOCs and SVOCs. The technique identifies and quantifies organic compounds on the basis of molecular weight, characteristic fragmentation patterns, and retention time. Recent advances in gas chromatography that are considered innovative are portable, weather-proof units that have self-contained power supplies.
Graphite Furnace Atomic Absorption Spectroscopy Definition: Graphite furnace atomic absorption (GFAA) spectroscopy is a highly sensitive spectroscopic technique that provides excellent detection limits for measuring concentrations of metals in liquid sample media. Water samples may be analyzed directly, while soil samples first must undergo an extraction process to draw the contaminants into solution for analysis. The sample is vaporized in the graphite furnace, and light of a specific wavelength then is passed through the atomic vapor of an element of interest. The attenuation of the intensity of the light as a result of absorption is measured, and the amount of attenuation is converted into an estimate of the contaminant metal's concentration. Acronym: GFAA Spectroscopy
Ground-Penetrating Radar Definition: GPR is a technology that emits pulses of electromagnetic energy into the ground to measure its reflection and refraction by subsurface layers and other features, such as buried debris. Acronym: GPR
Ground Water

Term
Definition: CERCLA and the NCP define ground water as "water in a saturated zone or stratum beneath the surface or land or water".
Habitat Definition: Place where a plant or animal lives, often characterized by a dominant plant form and physical characteristics. (PERTAINING TO ECOLOGICAL ASSESSMENTS)
Halogenated Organic Compound Definition: A halogenated organic compound is a compound containing molecules of chlorine, bromine iodine, and fluorine. Halogenated organic compounds were used in high-voltage electrical transformers because they conducted heat well while being fire resistant and good electrical insulators. Many herbicides, pesticides, and degreasing agents are made from halogenated organic compounds.
Hazard Definition: The likelihood that a substance will cause an injury or adverse effect under specified conditions.
Hazard Assessment Definition: This term has been used to mean either (1) evaluating the intrinsic effects of a stressor (U.S. EPA, 1979) or (2) defining a margin of safety or quotient by comparing a toxicologic effects concentration with an exposure estimate (SETAC, 1987).
Hazard Identification Definition: The process of determining whether exposure to a stressor can cause an increase in the incidence or severity of a particular adverse effect, and whether an adverse effect is likely to occur.

Term
Hazard Index Definition: The sum of more than one hazard quotient for multiple substances and/or multiple exposure pathways. The HI is calculated separately for chronic, subchronic, and shorter-duration exposures.
Hazard Quotient Definition: The ratio of an exposure level to a substance to a toxicity value selected for the risk assessment for that substance (e.g., LOAEL or NOAEL).
Hazard Ranking System Definition: The NCP defines the HRS as "the method used by EPA to evaluate the relative potential of hazardous substance releases to cause health or safety problems, or ecological or environmental damage." The HRS is the primary screening tool used by EPA to assess the risks posed to human health or the environment by abandoned or uncontrolled hazardous waste sites. Under the HRS, sites are assigned scores on the basis of the toxicity of hazardous substances that are present and the potential that those substances will spread through the air, surface, water, or ground water, taking into account such factors as the proximity of the substance to nearby populations. Scores are used in determining which sites should be placed on the NPL. See also National Priorities List. Acronym: HRS
Hazardous and Solid Waste Amendments Definition: HSWA are 1984 amendments to RCRA which required phasing out land disposal of hazardous waste and added minimum technology requirements. See also Resource Conservation and Recovery Act.

Term
Acronym: HSWA
Hazardous Substance Definition: CERCLA defines a hazardous substance as "(A) any substance designated pursuant to section 1321(b0(2)(A) of Title 33, (B) any element, compound, mixture, solution or substance designated pursuant to section 9602 of this title, (C) any hazardous waste having the characteristics identified in under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which the Solid Waste Disposal Act has been suspended by Act or Congress), (D) any toxic pollutant listed under section 1317(a) of Title 33, (E) any imminently hazardous chemical substance or mixture with respect to which the (EPA) Administrator has taken action pursuant to section 2606 of Title 15. The term does not (within the context of CERCLA) include petroleum, crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance (by CERCLA)...The term (hazardous substance) does not include natural gas, natural gas liquids, liquified natural gas, or synthetic natural gas usable for fuel (or mixtures of natural gas and such synthetic gas).
Health Assessment Definition: An evaluation of available data on existing or potential risks to human health posed by a Superfund site. The Agency for Toxic Substances and Disease Registry (ATSDR) of the Department of Health and Human Services is required to perform such an assessment at every site on the National Priorities List.
Heavy Metal Definition: The term heavy metal refers to a group of toxic metals including arsenic, chromium, copper, lead, mercury, silver, and zinc. Heavy Metals often are present at industrial sites at which operations have included battery recycling and metal plating.
Herbicide

Term
Definition: A herbicide is a chemical pesticide designed to control or destroy plants, weeds, or grasses.
High-Frequency Electromagnetic Sounding Definition: High-frequency EM sounding, the technology used for nonintrusive geophysical exploration, projects high-frequency electromagnetic radiation into subsurface layers to detect the reflection and refraction of the radiation by various layers of soil. Unlike ground-penetrating radar, which uses pulses, the technology uses continuous waves of radiation. See also Ground-Penetrating Radar. Acronym: High-Frequency EM Sounding
Home Range Definition: The area to which an animal confines its activities. (PERTAINING TO ECOLOGICAL ASSESSMENTS)
Hydrocarbon Definition: A hydrocarbon is an organic compound containing only hydrogen and carbon, often occurring in petroleum, natural gas, and coal.
Hydrogeology Definition: Hydrogeology is the study of ground water, including its origin, occurrence, movement, and quality.
Hydrology

Term
Definition: Hydrology is the science that deals with the properties, movement, and effects of water found on the earth's surface, in the soil and rocks beneath the surface, and in the atmosphere.
Hydrophilic Definition: Denoting the property of attracting or associating with water molecules; characteristic of polar or charged molecules.
Hydrophobic Definition: With regard to a molecule or side group, tending to dissolve readily in organic solvents, but not in water, resisting wetting, not containing polar groups or sub-groups.
Hydrophobic Dye Definition: Hydrophobic dye is added to liquids to assist in the observation of the presence of items that are colorless.
Hypothesis Definition: A proposition set forth as an explanation for a specified phenomenon or group of phenomena.
Ignitability Definition: Ignitable wastes can create fires under certain conditions. Examples include liquids, such as solvents that readily catch fire, and friction-sensitive substances.
Immunoassay

Term
Definition: Immunoassay is an innovative technology used to measure compound-specific reactions (generally colorimetric) to individual compounds or classes of compounds. The reactions are used to detect and quantify contaminants. The technology is available in field-portable test kits.
In Situ Definition: The term in situ, "in its original place," or "on-site", means unexcavated and unmoved. In situ soil flushing and natural attenuation are examples of in situ treatment methods by which contaminated sites are treated without digging up or removing the contaminants.
Indirect Effect Definition: An effect where the stressor acts on supporting components of the ecosystem, which in turn have an effect on the ecological component of interest.
Infill Development Definition: Infill development is new construction on previously developed land in cities or developed suburbs. The term often refers to redevelopment of small residential, commercial, or industrial properties. An important aspect of many infill development projects is the enhancement of the built environment with open space and parks.
Information Repository Definition: An information repository is a location in a public building that is convenient for local residents, such as a public school, city hall, or library, that contains information about a Superfund site, including technical reports and reference documents.
Infrared Monitor

Term
Definition: An infrared monitor is a device used to monitor the heat signature of an object, as well as to sample air. It may be used to detect buried objects in soil.
Ingestion Rate Definition: The rate at which an organism consumes food, water, or other materials (e.g., soil, sediment). Ingestion rate usually is expressed in terms of unit of mass or volume per unit of time (e.g., kg/day, L/day).
Insecticide Definition: An insecticide is a pesticide compound specifically used to kill or control the growth of insects.
Integrated Risk Information System Definition: IRIS is an electronic database that contains EPA's latest descriptive and quantitative regulatory information about chemical constituents. Files on chemicals maintained in IRIS contain information related to both noncarcinogenic and carcinogenic health effects. Acronym: IRIS
Interim Deliverables Definition: A series of Standard Tables, Worksheets, and Supporting Information, identified in the Workplan for each site, that should be developed by the risk assessment author, and evaluated by the EPA risk assessor, prior to development of the Draft Baseline Risk Assessment Report. After review and revision, as necessary, these documents should be included in the Baseline Risk Assessment Report. The Standard Tables should be prepared for each site to achieve standardization in risk assessment reporting. The

Term
Worksheets and Supporting Information should also be prepared to further improve transparency, clarity, consistency, and reasonableness of risk assessments.
Ionization Definition: The process by which a neutral atom loses or gains electrons, thereby acquiring a net charge and becoming an ion.
Leachate Definition: A leachate is a contaminated liquid that results when water collects contaminants as it trickles through wastes, agricultural pesticides, or fertilizers. Leaching may occur in farming areas and landfills and may be a means of the entry of hazardous substances into soil, surface water, or ground water.
Lethal Definition: Causing death by direct action.
Light Nonaqueous Phase Liquid Definition: An LNAPL is one of a group of organic substances that are relatively insoluble in water and are less dense than water. LNAPLs, such as oil, tend to spread across the surface of the water table and form a layer on top of the water table. Acronym: LNAPL
Lines of Evidence Definition: Information derived from different sources or by different techniques that can be used to describe and interpret risk estimates. Unlike the term "weight of evidence," it does not necessarily imply assignment of quantitative weightings to information.

Term
Lipid Definition: One of a variety of organic substances that are insoluble in polar solvents, such as water, but that dissolve readily in non-polar organic solvents. Includes fats, oils, waxes, steroids, phospholipids, and carotenes.
Long-Term Monitoring Definition: Long-term monitoring of a site typically is performed to verify that contaminants pose no risk to human health or the environment and that natural processes are reducing contaminant levels and risk as predicted.
Lowest-Observable-Adverse-Effect Level Definition: The lowest level of a stressor evaluated in a toxicity test or biological field survey that has a statistically significant adverse effect on the exposed organisms compared with unexposed organisms in a control or reference site. Acronym: LOAEL
Magnetrometry Definition: Magnetrometry is a geophysical technology used to detect disruptions that metal objects cause in the earth's localized magnetic field.
Mass Spectrometry Definition: Mass spectrometry is a method of chemical analysis in which the substance to be analyzed is heated and placed in a vacuum. The resulting vapor is exposed to a beam of electrons that causes ionization to occur, either of the molecules or their fragments. The ionized atoms are separated according to their mass and can be identified on that basis.

Term
Matrix Definition: The substance in which an analyte is embedded or contained; the properties of a matrix depend on its constituents and form.
Maximum Acceptable Toxic Concentration Definition: For a particular ecological effects test, this term is used to mean either the range between the NOAEL and the LOAEL or the geometric mean of the NOAEL and the LOAEL. The geometric mean is also known as the chronic value. Acronym: MATC
Measure of Ecosystem and Receptor Characteristics Definition: Measures that influence the behavior and location of ecological entities of the assessment endpoint, the distribution of a stressor, and life history characteristics of the assessment endpoint or its surrogate that may affect exposure or response to the stressor.
Measure of Effect Definition: A change in an attribute of an assessment endpoint or its surrogate in response to a stressor to which it is exposed.
Measure of Exposure Definition: A measure of stressor existence and movement in the environment and its contact or co-occurrence with the assessment endpoint.
Measurement Endpoint

Term
Definition: A measurable ecological characteristic that is related to the valued characteristic chosen as the assessment endpoint. Measurement endpoints often are expressed as the statistical or arithmetic summaries of the observations that make up the measurement. As used in this guidance document, measurement endpoints can include measures of effect and measures of exposure, which is a departure from U.S. EPA's (1992a) definition which includes only measures of effect. (pertains to ecological assessments)
Media Definition: Specific environmental compartments-air, water, soil-which are the subject of regulatory concern and activities.
Median Effective Concentration Definition 1: The concentration of a substance to which test organisms are exposed that is estimated to be effective in producing some sublethal response in 50 percent of the test population. The EC50 usually is expressed as a time-dependent value (e.g., 24-hour EC50). The sublethal response elicited from the test organisms as a result of exposure must be clearly defined. Definition 2: A statistically or graphically estimated concentration that is expected to cause one or more specified effects in 50% of a group of organisms under specified conditions. (Pertains to ecological assessments) Acronym: EC50
Median Lethal Concentration Definition: A statistically or graphically estimated concentration that is expected to be lethal to 50 percent of a group of organisms under specified conditions. Acronym: LC50

Term
Medium Definition: The environmental substance (e.g., air, water, soil) originally contaminated.
Medium EPC Definition: The EPC, based on either a statistical derivation of measured data or modeled data. The Medium EPC differs from the Route EPC in that the Medium EPC does not consider the transfer of contaminants from one medium to another.
Metallophytes Definition: Metallophytes are plants that preferentially colonize in metal-rich soils.
Methyl Tertiary Butyl Ether Acronym: MTBE
Metric Definition: Relating to measurement; a type of measurement-for example a measurement of one of various components of community structure (e.g., species richness, % similarity).
Migration Pathway Definition: A migration pathway is a potential path or route of contaminants from the source of contamination to contact with human

Term
populations or the environment. Migration pathways include air, surface water, ground water, and land surface. The existence and identification of all potential migration pathways must be considered during assessment and characterization of a waste site.
Monitored Natural Attenuation Definition: The term monitored natural attenuation refers to the remedial approach that allows natural processes to reduce concentrations of contaminants to acceptable levels. Monitored natural attenuation involves physical, chemical, and biological processes that act to reduce the mass, toxicity, and mobility of subsurface contamination. Physical, chemical, and biological processes involved in monitored natural attenuation include biodegradation, chemical stabilization, dispersion, sorption, and volatilization.
Monitoring Well Definition: A monitoring well is a well drilled at a specific location on or off a hazardous waste site at which ground water can be sampled at selected depths and studied to determine the direction of ground water flow and the types and quantities of contaminants present in the ground water.
Mortality Definition: Death rate or proportion of deaths in a population.
National Contingency Plan Definition: The NCP is formally known as the "National Oil and Hazardous Substances Pollution Contingency Plan, and is promulgated under 40 CFR Part 300. RAGS Volume I, Part A defines the NCP as "the regulation that implements CERCLA. Among other things, the NCP establishes the overall approach for determining appropriate remedial actions at Superfund sites." See also

Term
Superfund. Acronym: NCP
National Pollutant Discharge Elimination System Definition: NPDES is the primary permitting program under the Clean Water Act, which regulates all discharges to surface water. It prohibits discharge of pollutants into waters of the United States unless EPA, a state, or a tribal government issues a special permit to do so. Acronym: NPDES
National Priorities List Definition: The NCP defines the NPL as "the list compiled by EPA pursuant to CERCLA section 105, of uncontrolled hazardous substance releases in the United States that are priorities for long-term evaluation and response. Acronym: NPL
National Response Center Definition: The NRC, staffed by the U.S. Coast Guard, is a communications center that receives reports of discharges or releases of hazardous substances into the environment. The U.S. Coast Guard in turn, relays information about such releases to the appropriate federal agency. Acronym: NRC
No-Observed-Adverse-Effect Level Definition: The highest level of a stressor evaluated in a toxicity test or biological field survey that causes no statistically significant

Term
difference in effect compared with the controls or a reference site. Acronym: NOAEL
Non-Point Source Definition: The term non-point source is used to identify sources of pollution that are diffuse and do not have a point of origin or that are not introduced into a receiving stream from a specific outlet. Common non-point sources are rain water, runoff from agricultural lands, industrial sites, parking lots, and timber operations, as well as escaping gases from pipes and fittings.
Nonaqueous Phase Liquid Definition: NAPLs are organic substances that are relatively insoluble in water and are less dense than water. See also Dense Nonaqueous Phase Liquid and Light Nonaqueous Phase Liquid. Acronym: NAPL
Nonparametric Definition: Statistical methods that make no assumptions regarding the distribution of the data.
Organic Chemical or Compound Definition: An organic chemical or compound is a substance produced by animals or plants that contains mainly carbon, hydrogen, and oxygen.
Oxygenate Definition: Oxygenates are hydrocarbons added to fuels to increase the oxygen content of those fuels to improve combustion, thereby

Term
reducing emissions, such as carbon monoxide and other pollutants. Examples of oxygenates include methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), ethanol, and other ethers and alcohols.
Parameter Definition: Constants applied to a model that are obtained by theoretical calculation or measurements taken at another time and/or place, and are assumed to be appropriate for the place and time being studied.
Parametric Definition: Statistical methods used when the distribution of the data is known.
Permeability Definition: Permeability is a characteristic that represents a qualitative description of the relative ease with which rock, soil, or sediment will transmit a fluid (liquid or gas).
Pesticide Definition: A pesticide is a substance or mixture of substances intended to prevent or mitigate infestation by, or destroy or repel, any pest. Pesticides can accumulate in the food chain and or contaminate the environment if misused.
Phase I Environmental Assessment Definition: A Phase I environmental assessment is an initial environmental investigation that is limited to a historical records search to determine ownership of a site and to identify the kinds of chemical processes that were carried out at the site. A Phase I assessment includes a site visit, but does not include any sampling. If such an assessment identifies no significant concerns, Phase II and III

Term
audits are not necessary. Phase I assessments also are commonly referred to as site assessments.
Phase II Environmental Assessment Definition: A Phase II environmental assessment is an investigation that includes tests performed at the site to confirm the location and identity of environmental hazards. The assessment includes preparation of a report that includes recommendations for cleanup alternatives. Phase II assessments also are commonly referred to as site investigations.
Phytotoxic Definition: The term phytotoxic is used to describe a substance that is harmful to plants.
Plume Definition: A plume is a visible or measurable emission or discharge of a contaminant from a given point of origin into any medium. The term also is used to refer to measurable and potentially harmful radiation leaking from a damaged reactor.
Point Source Definition: A point source is a stationary location or fixed facility from which pollutants are discharged or emitted or any single, identifiable discharge point of pollution, such as a pipe, ditch, or smokestack.
Population Definition: An aggregate of individuals of a species within a specified location in space and time.
Potentially Responsible Party

Term
Definition: A PRP is an individual or company (such as owners, operators, transporters, or generators of hazardous waste) that is potentially responsible for, or contributing to, the contamination problems at a Superfund site. Whenever possible, EPA requires PRPs, through administrative and legal actions, to clean up hazardous waste sites they have contaminated. See also Comprehensive Environmental Response, Compensation, and Liability Act and Superfund. Acronym: PRP
Power Definition: The power of a statistical test indicates the probability of rejecting the null hypothesis when it should be rejected (i.e., the null hypothesis is false). Can be considered the sensitivity of a statistical test.
Precipitation Definition: In analytic chemistry, the process of producing a separable solid phase within a liquid medium.
Precision Definition: A measure of the closeness of agreement among individual measurements.
Preliminary Assessment and Site Inspection Definition: A PA/SI is the process of collecting and reviewing available information about a known or suspected hazardous waste site or release. The PA/SI usually includes a visit to the site. Acronym: PA/SI
Preliminary Remediation Goals

Term
Definition: Initial clean-up goals developed early in the remedy selection process based on readily available information and are modified to reflect results of the baseline risk assessment. They also are used during analysis of remedial alternatives in the remedial investigation/feasibility study (RI/FS).
Presumptive Remedies Definition: Presumptive remedies are preferred technologies for common categories of CERCLA sites that have been identified through historical patterns of remedy selection and EPA's scientific and engineering evaluation of performance data on technology implementation.
Primary Effect Definition: An effect where the stressor acts on the ecological component of interest itself, not through effects on other components of the ecosystem (synonymous with direct effect; compare with definition for secondary effect).
Probabilistic Analysis Definition: Probabilistic Analysis as opposed to deterministic analysis, is calculation and expression of health risks using multiple risk descriptors to provide the likelihood of various risk levels. Probabilistic risk results approximate a full range of possible outcomes and the likelihood of each, which often is presented as a frequency distribution graph, thus allowing uncertainty or variability to be expressed quantitatively.
Probability Density Function Definition: Probability density functions are particularly useful in describing the relative likelihood that a variable will have different

Term
particular values of x. The probability that a variable will have a value within a small interval around x can be approximated by multiplying f(x) (i.e., the value of y at x in a PDF plot) by the width of the interval. Acronym: PDF
Prospective Risk Assessment Definition: An evaluation of the future risks of a stressor(s) not yet released into the environment or of future conditions resulting from an existing stressor(s).
Quality Assurance Definition: QA is a system of management activities that ensure that a process, item, or service is of the type and quality needed by the user. QA deals with setting policy and implementing an administrative system of management controls that cover planning, implementation, and review of data collection activities. QA is an important element of a quality system that ensures that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities conducted by EPA are of the highest possible quality. Acronym: QA
Quality Control Definition: QC refers to scientific precautions, such as calibrations and duplications, that are necessary if data of known and adequate quality are to be acquired. QC is technical in nature and is implemented at the project level. Like QA, QC is an important element of a quality system that ensures that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities conducted by EPA are of the highest possible quality. Acronym: QC

Term
Radioactive Waste Definition: Radioactive waste is any waste that emits energy as rays, waves, or streams of energetic particles. Sources of such wastes include nuclear reactors, research institutions, and hospitals.
Radionuclide Definition: A radionuclide is a radioactive element characterized according to its atomic mass and atomic number, which can be artificial or naturally occurring. Radionuclides have a long life as soil or water pollutants. Radionuclides cannot be destroyed or degraded; therefore, applicable technologies involve separation, concentration and volume reduction, immobilization, or vitrification.
RCRA Facility Assessment Definition: A RFA is performed at a facility to determine the existence of any continuous or non-continuous releases of wastes. During the RFA, EPA or state regulators gather information on solid waste management units and other areas of concern at RCRA facilities, evaluate this information to determine whether there are releases that warrant further investigation and action, and determine the need to proceed to a RCRA Facility Investigation. See also Resource Conservation and Recovery Act. Acronym: RFA
RCRA Facility Investigation Definition: The purpose of a RFI is to gather sufficient data at a facility to fully characterize the nature, extent, and rate of migration of contaminant releases identified in the RCRA Facility Assessment. The data generated during the RFI is used to determine the potential need for corrective measures and to aid in the selection and implementation of these measures. See also Corrective Measure Study and Resource Conservation and Recovery Act.

Term
Acronym: RFI
Reactivity Definition: Reactive wastes are unstable under normal conditions. They can create explosions and or toxic fumes, gases, and vapors when mixed with water.
Receptor Definition: The ecological entity exposed to the stressor.
Receptor Age Definition: The description of the exposed individual as defined by the EPA region or dictated by the site.
Receptor Population Definition: The exposed individual relative to the exposure pathway considered.
Record of Decision Definition: A ROD is a legal, technical, and public document that explains which cleanup alternative will be used at a Superfund NPL site. The ROD is based on information and technical analysis generated during the remedial investigation and feasibility study (RI/FS) and consideration of public comments and community concerns. See also Preliminary Assessment and Site Investigation and Remedial Investigation and Feasibility Study. Acronym: ROD

Term
Recovery Definition: The rate and extent of return of a population or community to some aspect(s) of its previous condition. Because of the dynamic nature of ecological systems, the attributes of a "recovered" system should be carefully defined.
Reference Site Definition: A relatively uncontaminated site used for comparison to contaminated sites in environmental monitoring studies, often incorrectly referred to as a control.
Regression Analysis Definition: Analysis of the functional relationship between two variables; the independent variable is described on the X axis and the dependent variable is described on the Y axis (i.e. the change in Y is a function of a change in X).
Relative Risk Assessment Definition: A process similar to comparative risk assessment. It involves estimating the risks associated with different stressors or management actions. To some, relative risk connotes the use of quantitative risk techniques, while comparative risk approaches more often rely on professional judgment. Others do not make this distinction.
Release Definition: A "release" is defined by CERCLA as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles containing any hazardous substance or pollutant or contaminant". See also Resource Conservation and

Term
Recovery Act.
Remedial Design and Remedial Action Definition: Remedial Design is defined in the NCP as "the technical analysis and procedures which follow the selection of (a) remedy for a site and result in a detailed set of plans and specifications for implementation of the remedial action. See also Remedial Investigation and Feasibility Study. "Remedial Action" is defined in the NCP in part as "those actions consistent with (a) permanent remedy taken instead of, or in addition to, (a) removal action(s) in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate or cause substantial danger to present or future public health or welfare, or the environment." CERCLA defines a removal action in part as "the cleanup or removal of hazardous substances from the environment, which may be taken in the event of the threat of release of hazardous substances into the environment." Acronym: RD/RA
Remedial Investigation and Feasibility Study Definition: The RI/FS is the step in the Superfund cleanup process that is conducted to gather sufficient information to support the selection of a site remedy that will reduce or eliminate the risks associated with contamination at the site. The RI involves site characterization -- collection of data and information necessary to characterize the nature and extent of contamination at the site. The RI also determines whether the contamination presents a significant risk to human health or the environment. The FS focuses on the development of specific response alternatives for addressing contamination at a site. Acronym: RI/FS
Removal Action

Term
Definition: CERCLA defines a removal action in part as "the cleanup or removal of hazardous substances from the environment...which may be taken in the event of the threat of release of hazardous substances into the environment." See also Comprehensive Environmental Response, Compensation, and Liability Act.
Replicate Definition: Duplicate analysis of an individual sample. Replicate analyses are used for quality control.
Reportable Quantity Definition: The RQ is the quantity of hazardous substances that, when released into the environment, can cause substantial endangerment to public health or the environment. Under CERCLA, the federal government must be notified when quantities equaling or exceeding RQs specified in regulations are released. Acronym: RQ
Representative Samples Definition: Serving as a typical or characteristic sample; should provide analytical results that correspond with actual environmental quality or the condition experienced by the contaminant receptor.
Resource Conservation and Recovery Act Definition: RCRA is a federal law enacted in 1976 that established a regulatory system to track hazardous substances from their generation to their disposal. The law requires the use of safe and secure procedures in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent the creation of new, uncontrolled hazardous waste sites. Acronym: RCRA

Term
Response Action Definition: A response action is a short-term removal action or a long-term remedial response, authorized under CERCLA that is taken at a site to address releases of hazardous substances.
Retrospective Risk Assessment Definition: An evaluation of the causal linkages between observed ecological effects and stressor(s) in the environment.
Reuse Assessment Definition: A reuse assessment involves the collection and evaluation of information to develop assumptions about reasonably anticipated future land use(s) at Superfund sites. It provides a tool for implementing the Superfund land use directive and can involve a review of available records, visual inspections of the site, and discussions with local government officials, property owners, and community members about potential future land uses.
Risk Definition: The expected frequency or probability of undesirable effects resulting from exposure to known or expected stressors.
Risk Assessment Definition: Qualitative or quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence or release of hazardous substances, pollutants or contaminants.
Risk-Based Corrective Action

Term
Definition: As defined by EPA, RBCA is a streamlined approach through which exposure and risk assessment practices are integrated with traditional components of the corrective action process to ensure that appropriate and cost-effective remedies are selected and that limited resources are allocated properly. RBCA refers specifically to the standard Guide for Risk-Based Corrective Action Applied At Petroleum Release Sites, published by ASTM. The RBCA process can be tailored to applicable state and local laws and regulatory practices. See also American Society for Testing and Materials. Acronym: RBCA
Risk-Based Decision-Making Definition: The term RBDM refers to a process through which decisions are made about contaminated sites according to the risk each site poses to human health and the environment. RBDM is a mechanism for identifying necessary and appropriate action at any phase of the corrective action process. Depending on known or anticipated risks to human health and the environment, appropriate action can include site closure, monitoring and data collection, active or passive remediation, containment, or imposition of institutional controls. Acronym: RBDM
Risk Characterization Definition: A phase of risk assessment that integrates the results of the exposure and effects analyses to evaluate the likelihood of adverse effects associated with exposure to the stressor. The ecological significance of the adverse effects is discussed, including consideration of the types and magnitudes of the effects, their spatial and temporal patterns, and the likelihood of recovery.
Risk Communication Definition: Risk communication, the exchange of information about health or environmental risks among risk assessors, risk managers, the local community, news media and interest groups, is the process of informing members of the local community about

Term
managers, the local community, news media and interest groups, is the process of informing members of the local community about environmental risks associated with a site and the steps that are being taken to manage those risks.
Route EPC Definition: The EPC, based on either a statistical derivation of measured data or based on modeled data, that was selected to represent the route-specific concentration for the exposure calculations. The Route EPC differs from the Medium EPC in that the Route EPC may consider the transfer of contaminants from one medium to another, where applicable for a particular exposure route.
Safe Drinking Water Act Definition: The Safe Drinking Water Act (SDWA) of 1974 was established to protect the quality of drinking water in the United States. The act focuses on all waters actually or potentially designed for use as drinking water, whether from aboveground or underground sources. The Act authorized EPA to establish safe standards of purity and requires all owners or operators of public water systems to comply with primary (health-related) standards. State governments that assume that authority from EPA also encourage attainment of secondary (nuisance-related) standards. Acronym: SDWA
Sample (Environmental) Definition: Fraction of a material tested or analyzed; a selection or collection from a larger collection.
Sampling and Analysis Plan Definition: A sampling and analysis plan (SAP) documents the procedural and analytical requirements for a one-time or time-limited project that involves the collection of samples of water, soil, sediment, or other media to characterize areas of potential environmental

Term
contamination. A SAP contains all the elements of a quality assurance project plan (QAPP) and a field sampling plan (FSP) that must be provided to meet the requirements for any project funded by the EPA under which environmental measurements are to be taken.
Sanborn Map Definition: A Sanborn map is a record kept for insurance purposes that shows, for a specific property, the locations of such items as USTs, buildings, and areas where chemicals have been used for certain industrial processes. A Phase I environmental assessment includes a review of Sanborn maps. See also Phase I Environmental Assessment.
Saturated Zone Definition: The saturated zone is the area beneath the surface of the land in which all openings are filled with water.
Scenario Timeframe Definition: The time period (current and/or future) being considered for the exposure pathway.
Scientific/Management Decision Point Definition: A point during the risk assessment process when the risk assessor communicates results of the assessment at that stage to a risk manager. At this point the risk manager determines whether the information is sufficient to arrive at a decision regarding risk management strategies and/or the need for additional information to characterize risk. Acronym: SMDP
Secondary Effect Definition: An effect where the stressor acts on supporting components of the ecosystem, which in turn have an effect on the

Term
ecological component of interest (synonymous with indirect effects; compare with definition for primary effect).
Sediment Definition: Particulate material lying below water.
Semi-Volatile Organic Compound Definition: SVOCs, composed primarily of carbon and hydrogen atoms, have boiling points greater than 200°C. Common SVOCs include phenols and phthalates. Acronym: SVOC
Sensitive Life Stage Definition: The life stage (i.e., juvenile, adult, etc.) that exhibits the highest degree of sensitivity (i.e., effects are evident at a lower exposure concentration) to a contaminant in toxicity tests.
Sensitivity Definition: In relation to toxic substances, organisms that are more sensitive exhibit adverse (toxic) effects at lower exposure levels than organisms that are less sensitive.
Sludge Definition: Sludge is a semisolid residue from air or water treatment processes. Residues from treatment of metal wastes and the mixture of waste and soil at the bottom of a waste lagoon are examples of sludge, which can be a hazardous waste.

Term
Solubility Definition: Solubility is a measure of the amount of solute that will dissolve in a solution. It is the ability or tendency of one substance to dissolve into another at a given temperature and pressure and is generally expressed in terms of the amount of solute that will dissolve in a given amount of solvent to produce a saturated solution.
Source Definition: An entity or action that releases to the environment or imposes on the environment a chemical, physical, or biological stressor or stressors.
Source Term Definition: As applied to chemical stressors, the type, magnitude, and patterns of chemical(s) released.
Species Definition: A group of organisms that actually or potentially interbreed and are reproductively isolated from all other such groups; a taxonomic grouping of morphologically similar individuals; the category below genus.
Standard Operating Procedure Definition: A standard operating procedure (SOP) is a step-by-step procedure that promotes uniformity in operations to help clarify and augment such operations. SOPs document the way activities are to be performed to facilitate consistent conformance to technical and quality system requirements and to support data quality. The use of SOPs is an integral part of a successful quality system because SOPs provide individuals with the information needed to perform a job properly and facilitate consistency in the

Term
quality and integrity of a product or end result. SOPs also provide guidance in areas in which the exercise of professional judgment is necessary and specify procedures that are unique to each task.
Standard Tables Definition: One of the Standard Tools under the RAGS Part D approach. The Standard Tables have been developed to clearly and consistently document important parameters, data, calculations, and conclusions from all stages of human health risk assessment development. Electronic templates for the Standard Tables have been developed in LOTUS and EXCEL for ease of use by risk assessors. For each site-specific risk assessment, the Standard Tables, related Worksheets, and Supporting Information should first be prepared as Interim Deliverables for EPA risk assessor review, and should later be included in the Draft and Final Baseline Risk Assessment Reports. The Standard Tables may be found in Appendix A and on the electronic media provided with this guidance document. Use of the Standard Tables will standardize the reporting of human health risk assessments. The Standard Table formats can not be altered (i.e., columns can not be added, deleted, or changed); however, rows and footnotes can be added as appropriate. Standardization of the Tables is needed to achieve Superfund program-wide reporting consistency and to accomplish electronic data transfer to the Superfund database.
Standard Tools Definition: A basic element of the RAGS Part D approach. The Standard Tools have been developed to standardize the planning, reporting, and review of Superfund risk assessments. The three Standard Tools contained in the Part D approach include the Technical Approach for Risk Assessment (TARA), the Standard Tables, and Instructions for the Standard Tables.
Statistic Definition: A computed or estimated statistical quantity such as the mean, the standard deviation, or the correlation coefficient.

Term
Stratigraphy Definition: Stratigraphy is the study of the formation, composition, and sequence of sediments, whether consolidated or not.
Stress Regime Definition: The term "stress regime" has been used in at least three distinct ways: (1) to characterize exposure to multiple chemicals or to both chemical and nonchemical stressors (more clearly described as multiple exposure, complex exposure, or exposure to mixtures), (2) as a synonym for exposure that is intended to avoid overemphasis on chemical exposures, and (3) to describe the series of interactions of exposures and effects resulting in secondary exposures, secondary effects and, finally, ultimate effects (also known as risk cascade [Lipton et al., 1993]), or causal chain, pathway, or network (Andrewartha and Birch, 1984).
Stressor Definition: Any physical, chemical, or biological entity that can induce an adverse response. Preferred Term: Agent
Stressor-Response Profile Definition: The product of characterization of ecological effects in the analysis phase of ecological risk assessment. The stressor-response profile summarizes the data on the effects of a stressor and the relationship of the data to the assessment endpoint.
Sublethal Definition: Below the concentration that directly causes death. Exposure to sublethal concentrations of a substance can produce less obvious effects on behavior, biochemical and/or physiological functions, and the structure of cells and tissues in organisms.
Superfund

Term
Definition: Superfund is the trust fund that provides for the cleanup of hazardous substances released into the environment, regardless of fault. The Superfund was established under CERCLA and subsequent amendments to CERCLA. The term Superfund also is used to refer to cleanup programs designed and conducted under CERCLA and its subsequent amendments. See also Comprehensive Environmental Response, Compensation, and Liability Act.
Superfund Amendment and Reauthorization Act Definition: SARA is the 1986 act amending CERCLA that increased the size of the Superfund trust fund and established a preference for the development and use of permanent remedies, and provided new enforcement and settlement tools. See also Comprehensive Environmental Response, Compensation, and Liability Act. Acronym: SARA
Supporting Information Definition: Information submissions that substantiate or summarize detailed data analysis, calculations, or modeling and associated parameters and assumptions. Examples of recommended Supporting Information include: derivations of background values, exposure point concentrations, modeled intakes, and chemical-specific parameters. Supporting Information should be provided as Interim Deliverables for EPA risk assessor review prior to the development of the Draft Baseline Risk Assessment Report.
Surface Water Definition: Surface water is all water naturally open to the atmosphere, such as rivers, lakes, reservoirs, streams, and seas.
Systematic Planning

Term
Definition: Systematic planning is a planning process that is based on the scientific method. It is a common-sense approach designed to ensure that the level of detail in planning is commensurate with the importance and intended use of the data, as well as the available resources. Systematic planning is important to the successful execution of all activities at hazardous waste sites, but it is particularly important to dynamic field activities because those activities rely on rapid decision-making. The data quality objective (DQO) process is one formalized process of systematic planning. All dynamic field activities must be designed through the use of systematic planning, whether using DQO steps or some other system. See also Data Quality Objective.
Technical Approach for Risk Assessment Definition: One of the Standard Tools under the RAGS Part D approach. The TARA is a road map for incorporating continuous involvement of the EPA risk assessor throughout the CERCLA remedial process. Risk-related activities, beginning with scoping and problem formulation, extending through collection and analysis of risk-related data, and supporting risk management decision making and remedial design/remedial action issues are addressed. The TARA should be customized for each site and the requirements identified should be included in project workplans so that risk assessment requirements and approaches are clearly defined. Chapters 2 through 5 of Part D present the TARA. Worksheets Formats for documenting assumptions, input parameters, and conclusions regarding complex risk assessment issues. The Data Useability Worksheet (found in Exhibit 3-3) should be an Interim Deliverable for all sites. Worksheets addressing Lead and Radionuclides are under development and will be provided in a revision to RAGS Part D. Acronym: TARA
Technical Assistance Grant Definition: An EPA grant awarded to eligible community groups for the purpose of hiring an independent technical advisor, enabling community members to participate more effectively in the decision-making process at Superfund sites. Acronym: TAG

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Tertiary Amyl Methyl Ether Acronym: TAME
Threshold Concentration Definition: A concentration above which some effect (or response) will be produced and below which it will not.
Total Petroleum Hydrocarbon Definition: TPH refers to a measure of concentration or mass of petroleum hydrocarbon constituents present in a given amount of air, soil, or water. Acronym: TPH
Toxic Mechanism of Action Definition: The mechanism by which chemicals produce their toxic effects, i.e., the mechanism by which a chemical alters normal cellular biochemistry and physiology. Mechanisms can include; interference with normal receptor-ligand interactions, interference with membrane functions, interference with cellular energy production, and binding to biomolecules.
Toxic Substance Definition: A toxic substance is a chemical or mixture that may present an unreasonable risk of injury to health or the environment. Toxic Substances Control Act (TSCA) TSCA was enacted in 1976 to test, regulate, and screen all chemicals produced or imported into the U.S. TSCA requires that any chemical that reaches the consumer marketplace be tested for possible toxic effects prior to

Term
commercial manufacture. Any existing chemical that poses health and environmental hazards is tracked and reported under TSCA.
Toxicant Definition: A poisonous substance.
Toxicity Definition: EPA's Integrated Risk Information System (IRIS) defines toxicity as "The degree to which a chemical substance (or physical agent) elicits a deleterious or adverse effect upon the biological system of an organism exposed to the substance over a designated time period."
Toxicity Assessment Definition: Review of literature, results in toxicity tests, and data from field surveys regarding the toxicity of any given material to an appropriate receptor.
Toxicity Characteristic Leaching Procedure Definition: The TCLP is a testing procedure used to identify the toxicity of wastes and is the most commonly used test for degree of mobilization offered by a solidification and stabilization process. Under this procedure, a waste is subjected to a process designed to model the leaching effects that would occur if the waste was disposed of in a RCRA Subtitle D municipal landfill. Acronym: TCLP
Toxicity Test Definition: The means by which the toxicity of a chemical or other test material is determined. A toxicity test is used to measure the

Term
degree of response produced by exposure to a specific level of stimulus (or concentration of chemical) compared with an unexposed control.
Toxicity Value Definition: A numerical expression of a substance's exposure-response relationship that is used in risk assessments.
Trophic Level Definition: A functional classification of taxa within a community that is based on feeding relationships (e.g., aquatic and terrestrial plants make up the first trophic level, and herbivores make up the second).
Type I Error Definition: Rejection of a true null hypothesis.
Type II Error Definition: Acceptance of a false null hypothesis.
Uncertainty Definition: Imperfect knowledge concerning the present or future state of the system under consideration; a component of risk resulting from imperfect knowledge of the degree of hazard or of its spatial and temporal distribution.
Underground Storage Tank

Term
Definition: A UST is a tank and any underground piping connected to the tank that is used to contain gasoline or other petroleum products or chemical solutions and that is placed in such a manner that at least 10 percent of its combined volume is underground. Acronym: UST
Unexploded Ordnance Definition: The term exploded ordnance refers to any munition, weapon delivery system, or ordnance item that contains explosives, propellants, and chemical agents. Unexploded ordnance (UXO) consists of the same items after they (1) have been armed or otherwise prepared for action; (2) have been launched, placed, fired, or released in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (3) remain unexploded either by design or by malfunction, or for any other reason.
Uptake Definition: A process by which materials are transferred into or onto an organism.
Vadose Zone Definition: The vadose zone is the area between the surface of the land and the surface of the water table in which the moisture content is less than the saturation point and the pressure is less than atmospheric. The openings (pore spaces) also typically contain air or other gases.
Vapor Definition: Vapor is the gaseous phase of any substance that is liquid or solid at atmospheric temperatures and pressures. Steam is an example of a vapor.

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Volatile Organic Compound Definition: A VOC is one of a group of carbon-containing compounds that evaporate readily at room temperature. Examples of VOCs include trichloroethane; trichloroethylene; and BTEX. These contaminants typically are generated from metal degreasing, printed circuit board cleaning, gasoline, and wood preserving processes. Acronym: VOC
Volatilization Definition: The conversion of a chemical substance from a liquid or solid state to a gaseous vapor state.
Wastewater Definition: Wastewater is spent or used water from an individual home, a community, a farm, or an industry that contains dissolved or suspended matter.
Xenobiotic Definition: A chemical or other stressor that does not occur naturally in the environment. Xenobiotics occur as a result of anthropogenic activities such as the application of pesticides and the discharge of industrial chemicals to air, land, or water.
Zoning Definition: Zoning is the exercise of the civil authority of a municipality to regulate and control the character and use of property.