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Standard Terminology for Waste and Waste Management[1]

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1. Scope

1.1 This terminology contains standard definitions of terms used in the general area of waste and waste management. It is intended to promote understanding by providing precise technical definitions of terms used in the standards developed by Committee D34 and its subcommittees.

1.2 Terms used only within an individual standard, and having a meaning unique to that standard, may be defined or explained in the terminology section of that individual standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1129 Terminology Relating to Water
D4439 Terminology for Geosynthetics
D4448 Guide for Sampling Ground-Water Monitoring Wells
D4547 Guide for Sampling Waste and Soils for Volatile Organic Compounds
D4646 Test Method for 24-h Batch-Type Measurement of Contaminant Sorption by Soils and Sediments
D4790 Terminology of Aromatic Hydrocarbons and Related Chemicals
D4874 Test Method for Leaching Solid Material in a Column Apparatus
D5120 Test Method for Inhibition of Respiration in Microbial Cultures in the Activated Sludge Process (Withdrawn 2014)[3]
D5231 Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste
D5285 Test Method for 24-Hour Batch-Type Measurement of Volatile Organic Sorption by Soils and Sediments (Withdrawn 2008)[3]
D5368 Test Methods for Gravimetric Determination of Total Solvent Extractable Content (TSEC) of Solid Waste Samples (Withdrawn 2014)[3]
D5369 Practice for Extraction of Solid Waste Samples for Chemical Analysis Using Soxhlet Extraction (Withdrawn 2016)[3]
D5468 Test Method for Gross Calorific and Ash Value of Waste Materials (Withdrawn 2016)[3]
D5660 Test Method for Assessing the Microbial Detoxification of Chemically Contaminated Water and Soil Using a Toxicity Test with a Luminescent Marine Bacterium (Withdrawn 2014)[3]
D5679 Practice for Sampling Consolidated Solids in Drums or Similar Containers
D5680 Practice for Sampling Unconsolidated Solids in Drums or Similar Containers
D5743 Practice for Sampling Single or Multilayered Liquids, With or Without Solids, in Drums or Similar Containers
D5744 Test Method for Laboratory Weathering of Solid Materials Using a Humidity Cell
D5745 Guide for Developing and Implementing Short-Term Measures or Early Actions for Site Remediation
D5746 Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities
D5759 Guide for Characterization of Coal Fly Ash and Clean Coal Combustion Fly Ash for Potential Uses
D5792 Practice for Generation of Environmental Data Related to Waste Management Activities: Development of Data Quality Objectives
D5956 Guide for Sampling Strategies for Heterogeneous Wastes
D6008 Practice for Conducting Environmental Baseline Surveys
D6044 Guide for Representative Sampling for Management of Waste and Contaminated Media
D6051 Guide for Composite Sampling and Field Subsampling for Environmental Waste Management Activities

[1] This terminology is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.94 on Terminology.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.

D6063 Guide for Sampling of Drums and Similar Containers by Field Personnel
D6250 Practice for Derivation of Decision Point and Confidence Limit for Statistical Testing of Mean Concentration in Waste Management Decisions
D6270 Practice for Use of Scrap Tires in Civil Engineering Applications
D6311 Guide for Generation of Environmental Data Related to Waste Management Activities: Selection and Optimization of Sampling Design
D6323 Guide for Laboratory Subsampling of Media Related to Waste Management Activities
D6346 Guide for Accepting, Segregating and Packaging Materials Collected Through Household Hazardous Waste Programs
D6538 Guide for Sampling Wastewater With Automatic Samplers
D6582 Guide for Ranked Set Sampling: Efficient Estimation of a Mean Concentration in Environmental Sampling (Withdrawn 2012)[3]
D6661 Practice for Field Collection of Organic Compounds from Surfaces Using Wipe Sampling
D6700 Practice for Use of Scrap Tire-Derived Fuel
D6759 Practice for Sampling Liquids Using Grab and Discrete Depth Samplers
D6842 Guide for Designing Cost-Effective Sampling and Measurement Plans by Use of Estimated Uncertainty and Its Components in Waste Management Decision-Making (Withdrawn 2015)[3]
D6956 Guide for Demonstrating and Assessing Whether a Chemical Analytical Measurement System Provides Analytical Results Consistent with Their Intended Use
D6982 Practice for Detecting Hot Spots Using Point-Net (Grid) Search Patterns
E135 Terminology Relating to Analytical Chemistry for Metals, Ores, and Related Materials
E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods
E456 Terminology Relating to Quality and Statistics
E702 Specification for Municipal Ferrous Scrap
E708 Specification for Waste Glass as a Raw Material for the Manufacture of Glass Containers
E711 Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter (Withdrawn 2011)[3]
E828 Test Method for Designating the Size of RDF-3 From its Sieve Analysis (Withdrawn 2009)[3]
E850 Guide for Characterization of Inorganic Process Wastes for Use as Structural Fill
E856 Definitions of Terms and Abbreviations Relating to Physical and Chemical Characteristics of Refuse Derived Fuel (Withdrawn 2011)[3]
E868 Test Methods for Conducting Performance Tests on Mechanical Conveying Equipment Used in Resource Recovery Systems (Withdrawn 2013)[3]
E884 Practice for Sampling Airborne Microorganisms at Municipal Solid-Waste Processing Facilities
E889 Test Method for Composition or Purity of a Solid Waste Materials Stream
E897 Test Method for Volatile Matter in the Analysis Sample of Refuse-Derived Fuel (Withdrawn 2011)[3]
E929 Test Method for Measuring Electrical Energy Requirements of Processing Equipment (Withdrawn 2014)[3]
E943 Terminology Relating to Biological Effects and Environmental Fate
E949 Test Method for Total Moisture in a Refuse-Derived Fuel Laboratory Sample (Withdrawn 2011)[3]
E953/E953M Practice for Fusibility of Refuse-Derived Fuel (RDF) Ash
E955 Test Method for Thermal Characteristics of Refuse-Derived Fuel Macrosamples
E959 Test Method for Characterizing the Performance of Refuse Size-Reduction Equipment
E1138 Terminology for Technical Aspects of Products Liability Litigation (Withdrawn 1995)[3]
E1248 Practice for Shredder Explosion Protection
E1266 Practice for Processing Mixtures of Lime, Fly Ash, and Heavy Metal Wastes in Structural Fills and Other Construction Applications
E1527 Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
E1528 Practice for Limited Environmental Due Diligence: Transaction Screen Process

3. Significance and Use

3.1 This terminology defines terms and specialized meanings of terms in the subject areas of waste and management of waste.

3.2 This terminology is not intended for subjects other than waste and waste management. For terms applicable to other subject areas, the appropriate terminology standard(s) should be consulted. See the current edition of the Compilation of ASTM Standard Definitions[4] and the list of terminology standards cited therein.

3.3 Standards relating to subcategories of waste or waste management may use terms defined more narrowly than those included here. The more specialized terminology standards relating to the applicable specific subcategory, or terms defined within individual standards, or both, should be consulted for the exact meaning intended within a given standard.

3.4 The Thesaurus on Resource Recovery Terminology (Special Technical Publication (STP) 832)[5] contains many terms and may be useful for those not listed in terminology standards. However, a definition in a standard terminology shall be considered governing when the term is used in the sense or meaning defined therein.

3.5 Statistical terms are not defined in this terminology to the extent that the terms, when used regarding waste and management of waste, have the same meanings as in Practice E177 or Terminology E456.

[4] *Compilation of ASTM Standard Definitions*, ASTM, 8th edition, 1994.
[5] *Thesaurus on Resource Recovery Terminology*, ASTM STP 832, ASTM, 1983.

3.6 Regulatory terms are often developed by regulatory agencies for special regulatory purposes and may have technical content or meaning different from terms defined herein. When a regulatory term exists that differs in meaning from a term given here, the regulatory term should be considered to take precedence for regulatory matters.

4. Terminology

accepts, *n*—the output stream from a materials separation device that contains the highest concentration (purity) of the components that the device is designed to separate.

accuracy, *n*—closeness of a measured value to the true or an accepted reference or standard value. **E135, D6311**

acid producing potential (AP), *n*—the potential for a solid material sample to produce acidic effluent, based on the percent of sulfide contained in that sample as iron-sulfide mineral (for example, pyrite or pyrrhotite). The AP is commonly converted to the amount of calcium carbonate required to neutralize the resulting amount of acidic effluent produced by the oxidation of contained iron sulfide minerals; it is expressed as the equivalent tons of calcium carbonate per 1000 tons of solid material. The AP is therefore calculated by multiplying the percent of sulfide contained in the material by a stoichiometric factor of 31.25. **D5744**

action level (AL)—the level above or below which will lead to the adoption of one of two alternative actions. **D6956**

adiabatic calorimeter, *n*—a calorimeter that has a jacket temperature adjusted to follow the calorimeter temperature as closely as possible so as to maintain zero thermal head. **D5468**

air drying—a process of partial drying of RDF-3 to bring its moisture content near to equilibrium with the atmosphere in the room in which the sieving is to take place. **E828**

air drying—a process of partial drying of RDF to bring its moisture content near to equilibrium with the atmosphere in which further reduction, division, and characterization of the sample are to take place. In order to bring about the equilibrium, the RDF is usually subjected to drying under controlled temperature conditions ranging from 30 to 40°C. **E949**

all season radial, *n*—a highway tire designed to meet the weather conditions in all seasons of the year, that meets the Rubber Manufacturers Association[6] definition of a mud and snow tire. **D6700**

altered tire, *n*—a scrap tire which has been modified so that it is no longer capable of retaining air, holding water, or being used on a vehicle. **D6700**

analysis, *n*—the activity to determine the proximate and ultimate analysis, fuel value and size specification of TDF. **D6700**

analysis of variance (ANOVA), *n*—a statistical method of decomposing (or breaking down) the total variance and estimating or testing its contributing component variances for statistical significance. **D6842**

analyte—the constituent to be measured. **D6956**

analytical unit, *n*—the actual amount of the sample material analyzed in the laboratory. **D6044**

applicable or relevant and appropriate requirements (ARAR)—those requirements, cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that show either a direct correspondence or address problems or situations sufficiently similar at a site to show that they are well suited for application. **D5745**

asbestos—six naturally occurring fibrous minerals found in certain types of rock formations. Of the six, the minerals chrysotile, amosite, and crocidolite have been most commonly used in building products. When mined and processed, asbestos is typically separated into very thin fibers. Because asbestos is strong, incombustible, and corrosion-resistant, asbestos was used in many commercial products beginning early in this century and peaking in the period from World War II into the 1970s. When inhaled in sufficient quantities, asbestos fibers can cause serious health problems. **D6008**

asbestos-containing material (ACM)—any material or product that contains more than 1 % asbestos. **D6008**

as-determined basis, *n*—analytical data obtained from an analysis sample after conditioning and preparation which represent the numerical values obtained at the particular moisture and ash level in the sample at the time of analysis.

as-received basis, *n*—test data calculated to the condition of the sample as it arrived in the laboratory and before any laboratory processing or conditioning.

ash, *n*—the residue remaining after ignition of a substance as determined by definite prescribed methods.

DISCUSSION—Ash may not be identical in composition or quantity with the inorganic substances present in the analysis sample before ignition.

attribute, *n*—a quality of samples or a population. **D5956, D6311**

auxiliary variable, *n*—the secondary characteristic or measurement of interest.

DISCUSSION—In ranked set sampling, information contained in an auxiliary variable is useful for ranking the samples. This ranking may mimic the rankings of the samples with respect to the values of the primary variable when there is correlation between the auxiliary variable and the primary variable. Auxiliary information may include visual inspection, inexpensive quick measurement, knowledge of operational history, previous site data, or any other similar information. **D6582**

balanced design, *n*—a statistical study where replication in each of the levels of ANOVA is identical. **D6842**

[6] Available from Rubber Manufacturers Association (RMA), 1400 K St., NW, Suite 900, Washington, DC 20005, http://www.rma.org.

baling, *n*—a method of volume reduction whereby tires are compressed into bales. **D6270**

bead, *n*—the anchoring part of the tire which is shaped to fit the rim and is constructed of bead wire wrapped by the plies. **D6270**

bead, *n*—the anchoring part of the tire, which is shaped to fit the rim. The bead is constructed of high tensile steel wires wrapped by the plies. **D6700**

bead wire, *n*—a high tensile steel wire surrounded by rubber, which forms the bead of a tire that provides a firm contact to the rim. **D6270, D6700**

bear claw, *n*—the rough-edged bead wire sticking out from a shredded tire. **D6700**

belt, *n*—an assembly of rubber coated fabric or wire used to reinforce a tire's tread area. In radial tires, also constrains the outside diameter against inflation pressure and centrifugal force. **D6700**

belt wire, *n*—a brass-plated high tensile steel wire cord used in steel belts. **D6270, D6700**

bias, *n*—a systematic positive or negative deviation of the sample or estimated value from the true population value. **D6044**

bias ply tires, *n*—a tire built with two or more casing plies, which cross each other in the crown at an angle of 30 to 45° to the tread centerline. **D6700**

biased sampling, *n*—the taking of a sample(s) with prior knowledge that the sampling result will be biased relative to the true value of the population.

DISCUSSION—This is the taking of a sample(s) based on available information or knowledge, especially in terms of visible signs or knowledge of contamination. This kind of sampling is used to detect the presence of localized contamination or to identify the source of a contamination. The sampling results are not intended for generalization to the entire population. This is one form of authoritative sampling (see *judgment sampling*.) **D6044**

binary separator—a device that separates a single input feed stream into two output or product streams. **E889**

body, *n*—tire structure not including the tread portion of the tire. (See also *casing* and *carcass*.) **D6700**

bonding—touching the sampling equipment to the drum to form an electrically conductive path to minimize potential electrical differences between the sampling equipment and the drum, reducing the buildup of static electricity. **D5679, D5680, D5743**

buffing rubber, *n*—vulcanized rubber usually obtained from a worn or used tire in the process of removing the old tread in preparation for retreading. **D6270**

bulking—the act of emptying multiple containers of compatible materials and mixing those materials together in a single package unit destined for shipment. This would also include material placed in storage tanks to be packaged for shipment at a later date, or pumped into a bulk tank truck for shipment. **D6346**

bung—usually a 2-in. (5.1-cm) or ¾-in. (1.3-cm) diameter threaded plug designed specifically to close a bung hole. **D5679, D5680, D5743, D6063**

bung hole—an opening in a barrel or drum through which it can be filled, emptied, or vented. **D5679, D5680, D5743, D6063**

calorific value, *n*—the heat produced by combustion of a unit quantity of a specimen under specified conditions. **D5468**

calorific value—the heat of combustion of a unit quantity of a substance. It may be expressed in joules per gram (J/g), British thermal units per pound (Btu/lb), or calories per gram (cal/g) when required.

NOTE 1—The unit equivalents are as follows:
1 Btu (International Table) = 1055.06 absolute joules
1 Calorie (International Table) = 4.1868 absolute joules
1 Btu/lb = 2.326 J/g
1.8 Btu/lb = 1.0 cal/g **E711**

calorimeter jacket, *n*—the insulating medium surrounding a calorimeter. **D5468**

carcass, *n*—see **casing**. **D6270, D6700**

casing, *n*—the basic tire structure excluding the tread (Syn. *carcass*). **D6270, D6700**

cemented materials—materials consisting of one or more substances that develop hardness by chemical reaction after placement of the material in a fill. **E850**

characteristic, *n*—a property of items in a sample or population that can be measured, counted, or otherwise observed.

DISCUSSION—A characteristic of interest may be the cadmium concentration or ignitability of a population. **D5956, D6311**

characteristic product size, *n*—the screen size corresponding to 63.2 % cumulative passing by mass. **E959**

chip size, *n*—the range of rubber particle sizes resulting from the processing of whole tires. **D6700**

chipped tire, *n*—a classified scrap tire particle that has a basic geometrical shape, which generally is 2 in. (5.08 cm) or smaller and has most of the bead wire removed. Also referred to as a *tire chip*. **D6700**

chopped tire, *n*—a scrap tire that is cut into relatively large pieces of unspecified dimensions. **D6700**

classifier, *n*—equipment designed to separate oversized tire shreds from the desired size. **D6700**

clean coal combustion—the burning of coal, coal culm, or coal fines in a furnace designed to operate to minimize emissions (that is, a fluidized bed or aerated fluidized bed, etc.) or coal burned in the presence of alkaline materials, which combine to reduce these emissions. **D5759**

coarse material—material coarser than a No. 200 (75-µm) U.S. standard sieve. **E850**

color—that is, the presence of dissolved matter that absorbs the light emitted by *P. phosphoreum* (that is, wavelength of 490 ± 100 nm). **D5660**

combustibles, *n*—the portion of a sample which is consumed by oxidation upon ignition and exclusive of the moisture present. **E955**

combustion, *n*—the chemical reaction of a material through rapid oxidation with the evolution of heat and light. **D6700**

combustion unit, *n*—any number of devices to produce or release energy for the beneficial purpose of production by burning a fuel to include, but not limited to, units such as industrial power boilers, electrical utility generating boilers, and cement kilns. **D6700**

commercial tire, *n*—truck and industrial tires. **D6700**

composite item—an object in the waste composed of multiple waste components or dissimilar materials, such as disposable diapers, bi-metal beverage containers, electrical conductors composed of metallic wire encased in plastic insulation, etc. **D5231**

composite sample, *n*—a combination of two or more samples. **D1129, D6044, D6051, D6311, D6538**

compound, *n*—a mixture of blended chemicals tailored to meet the needs of the specific components of the tire. **D6700**

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)—the list of sites compiled by EPA that EPA has investigated or is currently investigating for potential hazardous substance contamination for possible inclusion on the National Priorities List. **D6008**

conceptual site model, *n*—a mental or physical representation of the physical system and the iterative characterization of the physical and chemical processes and conditions that affect the transport of contaminants from sources through environmental media to receptors or potential receptors. **D5745**

confidence interval, *n*—a numerical range within which the true parameter is estimated to fall.

DISCUSSION—The confidence interval percentage estimates the likelihood that the true value will fall within the numerical range if the procedure is repeated.

confidence level, *n*—the probability, usually expressed as a percent, that a *confidence interval* is expected to contain the parameter of interest (see discussion of *confidence interval*). **D5792**

confidence limits, *n*—the limits on either side of the mean value of a group of observations which will, in a stated fraction or percent of the cases, include the expected value. Thus the 95 % confidence limits are the values between which the population mean will be situated in 95 out of 100 cases. **D4790**

DISCUSSION—A one-sided upper or lower confidence limit can also be used when appropriate. An upper confidence limit is a value below which the population mean is expected to be with the specified confidence. Similarly, a lower confidence limit is a value above which the population mean is expected to be with the specified confidence. It is to be noted that confidence limits are calculated after the collection of sample data. **D6250**

consolidated—the characteristic of being cemented or compacted, or both, and not separated easily into smaller particles. **D5679**

consolidation—the act of combining two or more materials to make a single package unit. Common types of consolidation packaging used by HHW programs include: bulking, lab packaging, and composite packaging. **D6346**

constituent, *n*—an element, component, or ingredient of the population.

DISCUSSION—If a population contains several contaminants (such as acetone, lead, and chromium), these contaminants are called the constituents of the population. **D6044**

contaminant, *n*—any substance potentially hazardous to human health or the environment and present in the environment above background concentration. **D5745**

contaminant unit, *n*—the largest particle size that contains the contaminant of interest.

DISCUSSION—The contaminant of concern, as defined by the project objectives, may be associated with all the particle sizes or associated with only a certain particle size or sizes. At the time of waste generation, discharge or spill, the particle size of this contaminant of concern may be on the atomic or molecular scale, such as solvent spill into sand, or a macro scale, such as lead acid batteries at a dump site. The contaminant unit may also be in-between these scales, such as lead particles encapsulated in coal. In practice, the contaminant unit may change if the contaminant unit becomes absorbed or adsorbed to particles larger than the contaminant unit. It is the size of the contaminant unit at the time of subsampling, not at the time of generation, that is referred to as the contaminant unit. **D6323**

contaminated public wells—public wells used for drinking water that have been designated by a government entity as contaminated by toxic substances (for example, chlorinated solvents), or as having water unsafe to drink without treatment. **D6008**

converted tire, *n*—a scrap tire that has been processed into a usable commodity other than a tire. **D6700**

cords, *n*—the strands of wire or fabric that form the plies and belts in a tire. **D6700**

corrected temperature rise, *n*—the increase in temperature of the calorimeter caused by the process that occurs inside the bomb; the observed temperature change corrected for various effects.

data quality objectives (DQOs), *n*—qualitative and quantitative statements derived from the DQO process describing the decision rules and the uncertainties of the decision(s) within the context of the problem(s). **D6311, D6044**

DISCUSSION—DQOs clarify the study objectives, define the most appropriate type of data to collect, determine the most appropriate conditions from which to collect the data, and establish acceptable levels of decision errors that will be used as the basis for establishing the quantity and quality of data needed to support the decision. The DQOs are used to develop a sampling and analysis design. **D5792**

data quality objectives process, *n*—a quality management tool based on the scientific method and developed by the U.S. Environmental Protection Agency (EPA) to facilitate the planning of environmental data collection activities. The DQO process enables planners to focus their planning efforts by specifying the use of the data (the decision), decision criteria (decision point), and decision maker's acceptable decision error rates. The products of the DQO process are the DQOs.

DISCUSSION—DQOs result from an iterative process between the decision makers and the technical team to develop qualitative and quantitative statements that describe the problem and the certainty and uncertainty that decision makers are willing to accept in the results derived from the environmental data. This acceptable level of uncertainty should then be used as the basis for the design specifications for project data collection and data assessment. All of the information from the first six steps of the DQO process are used in designing the study and assessing the data adequacy. **EPA QA/G-4, D5792**

data quality objectives process (DQO), *n*—a quality management tool based on the scientific method and developed by the U.S. Environmental Protection Agency (EPA) to facilitate the planning of environmental data collection activities. **D6582**

DISCUSSION—The DQO process enables planners to focus their planning efforts by specifying the use of the data (the decision), the decision criteria (action level) and the decision maker's acceptable decision error rates. The products of the DQO Process are the DQOs. **D5956, D6311**

data quality objectives process, *n*—a quality management tool based on the Scientific Method and developed by the U.S. Environmental Protection Agency to facilitate the planning of environmental data collection activities. The DQO process enables planners to focus their planning efforts by specifying the use of the data (the decision), decision criteria (action level), and decision maker's acceptable decision error rates. The products of the DQO process are the DQOs. **D6044**

decision error—

false negative error, n—this occurs when environmental data mislead decision maker(s) into not taking action specified by a decision rule when action should be taken. **D5792**

false positive error, n—this occurs when environmental data mislead decision maker(s) into taking action specified by a decision rule when action should not be taken. **D5792**

decision point, *n*—the numerical value which causes the decision maker to choose one of the alternative actions (for example, conclusion of compliance or noncompliance). **D6250**

decision rule, *n*—a set of directions in the form of a conditional statement that specify the following: (*1*) how the sample data will be compared to the decision point, (*2*) which decision will be made as a result of that comparison, and (*3*) what subsequent action will be taken based on the decisions. **D5792, D6250**

decision rule, *n*—a set of directions in the form of conditional statements that specifies: (*1*) how the sample data will be compared to the decision point or action level, (*2*) which decision will be made as a result of that comparison, and (*3*) what subsequent action will be taken based on the decisions. **D6311**

deflagration—an explosion in which the flame or reaction front propagates at a speed well below the speed of sound in the unburned medium, such that the pressure is virtually uniform throughout the enclosure (shredder) at any time during the explosion. **E1248**

deheading—removal of the lid of a closed-head drum; usually accomplished with a drum deheader. **D5679, D5680, D5743**

detonation—an explosion in which the flame or reaction front propagates at a supersonic speed into the unburned medium, such that the pressure increases occur in the form of shock waves. **E1248**

dewired, *n*—the absence of exposed wire on the perimeter of the tire chips. Belt wire typically remains in the chip, but is is embedded in the chip. **D6700**

discarded tires, *n*—a worn or damaged tire that has been removed from a vehicle. **D6700**

discrete depth sample, *n*—sample obtained from a defined level within the liquid being sampled. **D6759**

discrete throughput method—the method whereby average throughput is calculated as the average of a number of discrete throughput measurements conducted during a test period. **E959**

dispose, *v*—to discard, abandon, or manage as waste.

drum—implicity any drum, barrel, or non-bulk container of 5 to 110 U.S. gal (19 to 416 L) capacity. **D5743**

drum—implies any drum, barrel, or non-bulk container of 5 to 110 U.S. gal (19 to 416 L) capacity. **D5679, D5680**

drum—a container (typically, but not necessarily, holding 55 gal [208 L] of liquid) that may have been used to store hazardous substances or petroleum products. **D6008**

dry ash-free basis, *n*—test data calculated to a theoretical base of no moisture or ash associated with the sample.

dry basis, *n*—test data calculated to a theoretical base of no moisture associated with the sample.

duplicate analysis, *n*—paired determinations on the same sample performed by one analyst at essentially the same time.

dwelling—structure or portion thereof used for residential habitation. **D6008**

early action, *n*—any remedial plan initiated in advance of a complete or final characterization of a contaminated site. **D5745**

EC_{50}—the concentration of the test candidate in this procedure (volume percent or mg/L) that results in a reduction of

respiration rate to 50 % of that observed for the control. D5120

effective coefficient of permeability—the coefficient of permeability that characterizes a fill and is the result of combined materials characteristics and construction techniques including compaction, capping, placement of impermeable layers, etc. E850

electrical metering system—a system composed of current and potential transformers and a wattmeter electrically connected in such a manner so as to measure the energy usage of a piece of equipment driven by an electric motor. E929

end user, *n*—the facility which utilizes the heat content or other forms of energy from the combustion of scrap tires (for energy recovery). The last entity who uses the tire, in whatever form, to make a product or provide a service with economic value (for other uses). D6700

energy equivalent, *n*—the energy required to raise the temperature of a calorimeter system 1°C (or 1°F) per gram of sample.

energy recovery, *n*—a process by which all or part of the tire is utilized as fuel (TDF) to recover its entire value. D6700

energy value, *n*—the assignment of a value to the tire-derived fuel as measured in British thermal units per pound or calories per gram. D6700

environmental baseline survey (EBS)—a survey of DoD real property based on all existing environmental information related to the storage, release, treatment, or disposal of hazardous substances or petroleum products or derivatives on the property to determine or discover the obviousness of the presence or likely presence of a release or threatened release of any hazardous substance or petroleum product. In certain cases, additional data, including sampling and analysis, may be needed in the EBS to support classification of the property into one of the standard environmental condition of property area types. Additionally, an EBS may also satisfy the uncontaminated property identification requirements of CERFA. An EBS will consider all sources of available information concerning environmentally significant current and past uses of the real property and shall, at a minimum, consist of the following: (*1*) a detailed search and review of available information and records in the possession of the DoD components or records made available by the regulatory agencies or other involved Federal agencies. DoD components are responsible for requesting and making reasonable inquiry into the existence and availability of relevant information and records to include any additional study information (for example, surveys for radioactive materials, asbestos, radon, lead-based paint, transformers containing PCB, Resource Conservation and Recovery Act Facility Assessments and Investigations (RFA and RFI), and underground storage tank cleanup program) to determine the environmental condition of the property; (*2*) a review of all reasonably obtainable Federal, state, and local government records for each adjacent facility where there has been a release or likely release of any hazardous substance or any petroleum product, and that is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product on the DoD real property; (*3*) an analysis of aerial photographs that may reflect prior uses of the property, which are in the possession of the Federal government or are reasonably obtainable through state or local government agencies; (*4*) interviews with current or former employees, or both, involved in operations on the real property; (*5*) visual inspections of the real property; any buildings, structures, equipment, pipe, pipeline, or other improvements on the real property; and of properties immediately adjacent to the real property, noting sewer lines, runoff patterns, evidence of environmental impacts (for example, stained soil, stressed vegetation, and dead or ill wildlife), and other observations that indicate the actual or potential release of hazardous substances or petroleum products; (*6*) the identification of sources of contamination on the installation and on adjacent properties that could migrate to the parcel during Federal government ownership; (*7*) ongoing response actions or actions that have been taken at or adjacent to the parcel; and (*8*) physical inspection of the property adjacent to the real property, to the extent permitted by owners or operators of such property. D5746

environmental baseline survey (EBS) report—the written record of an EBS that includes the following: (*1*) an executive summary briefly stating the areas of real property (or parcels) evaluated and the conclusions of the EBS; (*2*) the property identification (for example, the address, assessor parcel number, or legal description); (*3*) any relevant information obtained from a detailed search of Federal government records pertaining to the property, including available maps; (*4*) any relevant information obtained from a review of the recorded chain of title documents regarding the real property. The review should address those prior ownerships and uses that could reasonably have contributed to an environmental concern, and, at a minimum, cover the preceding 60 years; (*5*) a description of past and current activities, including all past DoD uses to the extent such information is reasonably available, on the property and on adjacent properties; (*6*) a description of hazardous substances or petroleum products management practices (to include storage, release, treatment, or disposal) at the property and adjacent properties; (*7*) any relevant information obtained from records reviews and visual and physical inspections of adjacent properties; (*8*) a description of ongoing response actions or actions that have been taken at or adjacent to the property; (*9*) an evaluation of the environmental suitability of the property for an intended lease or deed transaction, if known, including the basis for determination of such suitability; and (*10*) references to key documents examined (for example, aerial photographs, spill incident reports, and investigation results). D5746

environmental condition of property map—a map, prepared on the basis of all environmental investigation information conducted to date, that shows the environmental condition of a DoD installation's real property in terms of the seven

standard environmental condition of property area types defined in this classification. D5746

environmental lien—a charge, security, or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon a property, including (but not limited to) liens imposed pursuant to CERCLA 42 USC § 9607(1) and similar state or local laws. D6008

equal allocation, *n*—this occurs when the number of sets in ranked set sampling is an integer multiple of the size of the set. D6582

ERNS list—EPA's Emergency Response Notification System list of reported CERCLA hazardous substance releases or spills in quantities equal to or greater than the reportable quantity, as maintained by the National Response Center. Notification requirements for such releases or spills are codified in 40 CFR Parts 302 and 355. D6008

error, *n*—the random or systematic deviation of the observed sample value from its true value (see *bias* and *sampling error*). D6044

explosion—a rapid release of energy (usually by means of combustion) with a corresponding pressure buildup capable of damaging equipment and building structures. E1248

explosion suppression—the technique of detecting and extinguishing incipient explosions in the shredder enclosure and contiguous enclosed areas before pressures exceed the damage threshold. E1248

explosion venting—the provision of an opening(s) in the shredder enclosure and contiguous enclosed areas to allow gases to escape during a deflagration and thus prevent pressures from reaching the damage threshold. E1248

fabric, *n*—textiles cords used in tire manufacturing. D6700

false negative error, *n*—occurs when environmental data mislead decision maker(s) into not taking action specified by a decision rule when action should be taken. D5792, D6250

false negative error, *n*—an error which occurs when (environmental) data misleads the decision maker(s) into not taking action when action should be taken. D6311

false positive error, *n*—occurs when environmental data mislead decision maker(s) into taking action specified by a decision rule when action should not be taken. D5792, D6250

false positive error, *n*—an error which occurs when environmental data misleads the decision maker(s) into taking action when action should not be taken. D6311

Federal Register (FR)—publication of the United States government published daily (except for Federal holidays and weekends) containing all proposed and final regulations and some other activities of the Federal government. When regulations become final, they are included in the Code of Federal Regulations (CFR) as well as published in the Federal Register. D6008

fill material, *n*—material used in the construction of a structural fill. E850

final remedy, *n*—site restoration. D5745

fine material—material finer than No. 200 (75-µm) U.S. standard sieve. E850

fishhooks, *n*—strands of belt or bead wire exposed from a processed scrap tire or an individual piece of belt or bead wire. (See also *bear claw*). D6700

fixed carbon, *n*—the ash-free carbonous material that remains after volatile matter is driven off during the proximate analysis of a dry sample.

flint glass cullet, *n*—a particulate glass material that contains no more than 0.1 mass percent Fe_2O_3, or 0.0015 mass percent Cr_2O_3, as determined by chemical analysis.

flint glass cullet—a particulate glass material that contains no more than 0.1 weight % Fe_2O_3, or 0.0015 weight % Cr_2O_3, as determined by chemical analysis. E708

fluff, *n*—the fibrous, nonrubber, nonmetal portion of a tire that remains after the scrap tire is processed (that is, cotton, rayon, polyester, fiberglass, or nylon). D6700

fluid temperature, FT, *n*—in ash fusion determinations, the temperature at which a fused mass has spread out in a nearly flat layer with maximum height of 1.6 mm (1⁄16 in.).

fluid temperature, FT—the temperature at which the fused mass has spread out in a nearly flat layer with a maximum height of 1.6 mm (1⁄16 in.). E953/E953M

fly ash, *n*—the finely divided particles of ash entrained in flue gases arising from the combustion of fuel.

DISCUSSION—The particles of ash may contain incompletely burned fuel. The term has been applied predominantly to the gas-born ash from boilers with spreader stoker, underfeed stoker, and pulverized fuel (coal firing) D22

freewheeling condition—a piece of equipment under an unloaded condition wherein the electrical energy is dissipated due to friction and windage. E929

freewheeling power—power requirement of a piece of equipment under unloaded, or freewheeling, conditions. E929

fuel value, *n*—the heat content, as measured in British thermal units (Btu)/lb or cal/g. D6700

GC—gas chromatography. D5369

GC/MS—gas chromatography with mass spectrometric detection. D5369

grab sample, *n*—individual sample collected over a period of time usually not exceeding 15 min. and in such a manner as to be representative of conditions at the time of sampling. Grab samples are sometimes called individual or discrete samples. D6759

granulated rubber, *n*—particulate rubber composed of mainly nonspherical particles that span a broad range of maximum particle dimension, from below 425 µm (40 mesh) to 12 mm (also refer to **particulate rubber**).[7] **D6270**

gross calorific value, (gross heat of combustion), Q_v (gross), *n*—the heat produced by combustion of unit quantity of a solid or liquid specimen when burned at constant volume in an oxygen bomb calorimeter under specified conditions with the resulting water condensed to a liquid.

gross calorific value (gross heat of combustion), Qv (gross)—the heat produced by combustion of unit quantity of a solid or liquid fuel when burned at constant volume in an oxygen bomb calorimeter under specified conditions with the resulting water condensed to a liquid. **D5468**

gross calorific value—the heat produced by combustion of a unit quantity of solid fuel, at constant volume, in an oxygen bomb calorimeter under specified conditions such that all water in the products remains in liquid form. **E711**

gross energy—energy usage of a piece of equipment operating under loaded conditons as measured using an electrical metering system. **E929**

gross power—power requirement of a piece of equipment under loaded conditions. **E929**

gross sample, *n*—a sample representing one lot, normally composed of a number of increments, on which neither reduction nor division has been preformed.

gross sample—a sample representing a lot of RDF and composed of a number of increments on which neither reduction nor division has been performed. **E828**

gross sample—a sample representing one lot and composed of a number of increments on which neither reduction nor division has been performed. **E889, E949**

ground rubber, *n*—particulate rubber composed of mainly nonspherical particles that span a range of maximum particle dimensions, from below 425 µm (40 mesh) to 2 mm (also refer to **particulate rubber**).[7] **D6270**

hair, *n*—wire protruding from the perimeter of a tire chip or shred. (See also *fishhooks*). **D6700**

hazardous substance—a substance defined as a hazardous substance pursuant to CERCLA 42 USC § 9601(14), as interpreted by EPA regulations and the courts: "(*A*) any substance designated pursuant to section 1321(b)(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 under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC § 6921) (but not including any waste the regulation of which under the Solid Waste Disposal Act (42 USC § 6921 *et seq.*) has been suspended by Act of Congress), (*D*) any toxic pollutant listed under section 1317(a) of Title 33, (*E*) any hazardous air pollutant listed under section 112 of the Clean Air Act (42 USC § 7412), and (*F*) any imminently hazardous chemical substance or mixture with respect to which the Administrator (of EPA) has taken action pursuant to section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (*A*) through (*F*) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)." **D5746, D6008**

hazardous waste—any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (42 USC § 6901 *et seq.*) (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress) and so forth. **D6008**

heat capacity—the quantity of heat required to raise a system one degree in temperature either at constant volume or constant pressure. **D5468**

heat capacity (energy equivalent, or water equivalent), *n*—the energy required to raise the temperature of a calorimeter one arbitrary unit; the quantity that when multiplied by the corrected temperature rise, then adjusted for extraneous heat effects and divided by the mass of the sample, gives the gross calorific value.

heat of formation—the increase in heat content resulting from the formation of 1 mole of a substance from its elements at constant pressure. **D5468**

heavy-duty tires, *n*—tires weighing more than 40 lb (18.1 kg), used on trucks, buses, and off the road vehicles in heavy-duty applications. **D6700**

heavy metal wastes—industrial wastes containing heavy metals such as arsenic, cadmium, chromium, barium, lead, silver, selenium, and mercury; these wastes are generally liquids, sludges, or filter cakes. **E1266**

hemispherical temperature, HT, *n*—the temperature at which a pyrometric cone has fused down to a hemispherical lump where the height is one half the width of the base.

hemispherical temperature, HT—the temperature at which the cone has fused down to a hemispherical lump at which point the height is one half the width of the base. **E953/E953M**

heterogeneity, *n*—the condition of the population under which items of the population are not identical with respect to the characteristic of interest.

DISCUSSION—Although the ultimate interest is in the statistical parameter such as the mean concentration of a constituent of the population, heterogeneity relates to the presence of differences in the characteristics (for example, concentration) of the units in the population. It is due to the presence of fundamental heterogeneity (or

[7] The defined term is the responsibility of Committee D11 on Rubber.

fundamental error)[8] in the population that sampling variance arises. Degree of sampling variance defines the degree of precision in estimating the population parameter using the sample data. The smaller the sampling variance is, the more precise the estimate is. See also *sampling error*. **D5956**

higher heating value, HHV, *n*—a synonym for gross calorific value.

homogeneity, *n*—the condition of the population under which all items of the population are identical with respect to the characteristic(s) of interest. **D6044, D6311**

horsetail, *n*—a rough piece of shredded tire with a width of 2 to 4 in. (5.1 to 10.2 cm) and a length greater than 6 in. (15.2 cm). **D6700**

hot spot—a localized area of soil or groundwater contamination.

DISCUSSION—A hot spot may be considered as a discrete volume of buried waste or contaminated soil where the concentration of a contaminant of interest exceeds some prespecified threshold value. Although elliptically shaped hot spots or targets are assumed for the purposes of calculating probabilities of detecting hot spots, hot spots are more likely to have variable sizes and shapes and not have clear and distinct boundaries. However, the concept of hot spots is consistent with known historical patterns of contaminant distributions. **D6982**

hypothesis, *n*—a supposition or conjecture put forward to account for certain facts and used as a basis for further investigation by which it may be proved or disproved. **D6250, E1138**

IC20—a statistically or graphically estimated concentration of test material that, under specified conditions, is expected to cause a 20 % inhibition of a biological process (such as growth, reproduction, or bioluminescence) for which the data are not dichotomous. **D5660**

idling time—time periods during which a size reduction device is freewheeling, that is, not processing refuse.

incineration, *n*—controlled burning of waste products or other combustible material.

incinerator, *n*—a device constructed for the purpose of containing a material for thermal oxidation.

increment, *n*—a portion of a lot as collected by one individual manual or mechanical sampling operation and normally combined with other increments from the lot to make a gross sample.

inerting—the technique by which a combustible mixture is rendered nonflammable by addition of a gas incapable of supporting combustion. **E1248**

initial deformation temperature, IT, *n*—the temperature at which the first rounding of the apex of a pyrometric cone occurs; shrinking or warping of the cone is ignored if the tip remains sharp.

initial deformation temperature, IT—the temperature at which the first rounding of the apex of a pyrometric cone occurs. Shrinking or warping of the cone is ignored if the tip remains sharp. **E953/E953M**

innerliner, *n*—the layer or layers of rubber laminated to the inside of a tire and which meets the Rubber Manufacturers Association[6] definition of a mud and snow tire. **D6700**

interim remedial measure, *n*—a remedial action that implements a partial solution prior to the selection of a final complete remedy. Interim remedial measures may be early actions, but they are often not. **D5745**

interstitial water, *n*—the residual water remaining in the sample pore spaces at the completion of the fixed-volume weekly leach. **D5744**

isoperibol calorimeter, *n*—a calorimeter that has a jacket of uniform and constant temperature. **D5468**

judgment sampling, *n*—taking of a sample(s) based on judgment that it will more or less represent the average condition of the population.

DISCUSSION—The sampling location(s) is selected because it is judged to be representative of the average condition of the population. It can be effective when the population is relatively homogeneous or when the professional judgment is good. It may or may not introduce bias. It is a useful sampling approach when precision is not a concern. This is one form of authoritative sampling (see *biased sampling*.) **D6044**

laboratory control sample—an aliquot of the sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes, or a material containing known and verified amounts of analytes. **D6956**

laboratory sample, *n*—a representative portion of the gross sample received by the laboratory for analysis. **E949**

laboratory sample—a representative portion of the gross sample delivered to the laboratory for further analysis. **E828**

laboratory sample or analysis sample—a portion of one gross sample representative of a lot and taken at random from the gross sample. **E889**

landfill—a place, location, tract of land, area, or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term solid waste disposal site and is also known as a garbage dump, trash dump, or similar term. **D6008**

leach, *n*—a weekly addition of water to solid material that is performed either dropwise or by flooding for a specified time period. **D5744**

leachate—liquid that has percolated through or passed over a solid waste or other medium and contains dissolved or suspended materials, or both, from the medium. **E850**

light duty tires, *n*—tires weighing less than 40 lb (18.2 kg), used on passenger cars and light trucks. **D6700**

light truck tires, *n*—tires with a rim diameter of 16 to 19.5 in. (40.6 to 49.5 cm), manufactured specifically for light truck use. **D6700**

[8] Pitard, F. F., "*Pierre Gy's Sampling Theory and Sampling Practice: Heterogeneity, Sampling Correctness and Statistical Process Control*," 2nd ed., CRC Press Publishers, 1993.

lime—a commercial product derived from the calcination of high calcium or dolomitic limestone. **E1266**

loaded condition—equipment doing processing work on solids, liquids, or gases, or all of these, (for example, moving material, changing its characteristics, or separating it into different sreams). **E929**

loading, *n*—the product of the weekly concentration for a constituent of interest and the weight of solution collected that may be interpreted for water quality impacts. **D5744**

local street directories—directories published by private (or sometimes government) sources that show ownership, occupancy, or use of sites, or combination thereof, by reference to street addresses. Often local street directories are available at libraries of local governments, colleges or universities, or historical societies. **D6008**

logger tires, *n*—a special tire designed for the logging industry. **D6700**

lot, *n*—a large designated quantity of a material which can be represented by a properly selected gross sample.

lot—a large designated quantity of RDF-3. **E828**

lot—a large designated quantity (greater than the quantity of the final sample) of RDF which can be represented by a properly selected gross sample. **E949**

lower heating value, LHV, *n*—a synonym for net calorific value.

low-flow sampling—a ground water sampling technique where the purge and sampling rates do not result in significant changes in formation seepage velocity. **D4448**

material safety data sheet (MSDS)—written or printed material concerning a hazardous substance which is prepared by chemical manufacturers, importers, and employers for hazardous chemicals pursuant to OSHA's Hazard Communication Standard, 29 CFR 1910.1200. **D6008**

matrix spike—an aliquot of the sample spiked with known levels of the target analytes. **D6956**

maximum allowable particle size, *n*—the largest lineal dimension of a sample's individual particles accepted for a given sample mass.

DISCUSSION—The maximum allowable particle size is sometimes referred to as the allowable particle size. A simple method of measurement is a sieve. **D6323**

measurement process, *n*—the method and procedure of obtaining and measuring samples or their subsamples to produce sample data. **D6842**

measurement quality objectives (MQOs)—quantitative statements of the acceptable level of selectivity, sensitivity, bias, and precision for measurements of the analyte of interest in the matrix of concern. **D6956**

measurement system—all elements of the analytical process including laboratory subsampling, sample preparation and cleanup, and analyte detection and quantitation, including the analysts. **D6956**

metallic yield, *n*—the mass percentage of a ferrous waste stream that is generally recoverable as metal or alloy.

metallic yield—the weight percent of the municipal ferrous scrap that is generally recoverable as metal or alloy. **E702**

methanogenic inoculum, *n*—anaerobically digested waste containing a high concentration of anaerobic methane-producing microorganisms.

method of standard additions—the addition of a series of known amounts of the analytes of interest to more than one aliquot of the sample as a means of correcting for interferences. **D6956**

microbiological aerosol, *n*—an airborne particle partially or exclusively composed of microorganisms including bacteria and fungi. **E884**

migration, *n*—the movement of contaminant(s) away from a source through permeable subsurface media (such as the movement of a groundwater plume of contamination) or the movement of contaminant(s) by a combination of surficial and subsurface processes. **D5745**

milling, *n*—in waste derived fuels, reduction in particle size by shearing, cutting, grinding to a suitable particle size for analysis and characterization.

mill tailings, *n*—finely ground mine waste (commonly passing a 150-µm (100 mesh screen) resulting from the mill processing of ore. **D5744**

minimal purge sampling—the collection of ground water that is representative of the formation by purging only the volume of water contained by the sampling equipment (that is, tubing, pump bladder).

DISCUSSION—This sampling method should be considered in situations where very low yield is a consideration and results from this sampling method should be scrutinized to confirm that they meet data quality objectives (DQOs) and the work plan objectives. **D4448**

minus, *n*—the sieve designating the upper limit or maximum size shall be the sieve of the series with the largest opening upon which is cumulatively retained a total of less than or equal to 1 % of the sample. **D6700**

monolithic mass—a mass that has good dimensional stability, to freezing and thawing resistance, low permeability, a high bearing capacity, and resistance to attack by biological agents. The EPA states that an end product such as this could be used as a foundation for buildings or roads, or simply buried and covered over in a landfill (EPA/SW-872). **E1266**

mucker tire, *n*—a flotation type of tire specifically designed for use in soft grounds. **D6700**

multilayered sample, *n*—a sample consisting of two or more clearly differentiated components.

DISCUSSION—Multilayered samples are those with two or more distinct visual layers of material. These layers may be the result of differences in density, such as liquid/liquid layers (for example,

chlorinated solvents and water, water and oil), liquid/solid layers (for example, sludge), solid/solid layers (for example, small rocks and large rocks), or combinations of these layers (for example water, oil, and soil). These layers may also be the result of depositional layering, such as green clay and silty sand from a coring sample. **D6323**

municipal ferrous scrap, *n*—ferrous waste that is collected from industrial, commercial, or household sources and destined for disposal facilities.

municipal ferrous scrap—ferrous waste that is collected from industrial, commercial, or household sources and destined for disposal facilities. Typically, municipal ferrous scrap consists of a metal or alloy fraction, a combustible fraction, and an inorganic noncombustible fraction that includes metal oxides. **E702**

National Contingency Plan (NCP)—the National Oil and Hazardous substances Pollution Contingency Plan found at 40 CFR § 300, which is the EPA's regulations for how hazardous substances are to be cleaned up pursuant to CERCLA. **D6008**

National Priorities List—list compiled by EPA pursuant to CERCLA 42 USC § 9605(a)(8)(B) of properties with the highest priority for cleanup pursuant to EPA's Hazard Ranking System. See 40 CFR Part 300. **D6008**

natural rubber, *n*—the material processed from the spa (latex) of *Hevaca Brasiliensis* (rubber tree). **D6700**

net calorific value (net heat of combustion at constant pressure), Q_p, *n*—the heat produced by combustion of unit quantity of a solid or liquid specimen when burned at a constant pressure of 0.1 MPa (1 atm), under conditions such that all the water in the products remains in the form of vapor.

net calorific value (net heat of combustion at constant pressure), Qp—the heat produced by combustion of unit quantity of a solid or liquid fuel when burned at a constant pressure of 0.1 MPa (1 atm), under conditions such that all the water in the products remain in the form of vapor. **D5468**

net calorific value—a lower value calculated from the gross calorific value. It is equivalent to the heat produced by combustion of a unit quantity of solid fuel at a constant pressure of one atmosphere, under the assumption that all water in the products remains in the form of vapor. **E711**

net power—the difference between gross power and free-wheeling power; net power is the power required for processing. **E929**

net processing time—the time during which refuse is processed through the size reduction device. **E959**

neutralizing potential (NP), *n*—the potential for a solid material sample to neutralize acidic effluent produced from the oxidation of iron-sulfide minerals, based on the amount of carbonate present in the sample. The NP is also presented in terms of tons of calcium carbonate equivalent per 1000 tons of solid material. It is calculated by digesting the solid material with an excess of standardized acid and back-titrating with a standardized base to measure and convert the acid consumption to calcium carbonate equivalents.

DISCUSSION—The AP and NP are specifically applicable to the determination of AP from mining wastes comprised of iron-sulfide and carbonate minerals. These terms may be applicable to any solid material containing iron-sulfide and carbonate minerals. **D5744**

new tire, *n*—a tire that has never been mounted on a rim. **D6700**

nominal, *n*—commonly used to refer to the average size product (chip) that comprises 50 % or more of the throughput in a scrap tire processing operation. It should be noted that any scrap tire processing operation also would generate products (chips) above and below the "nominal" range of the machine. **D6700**

nominal product size—the screen size corresponding to 90 % cumulative passing by weight. **E959**

nominal size, *n*—the average size product (chip) that comprises 50 % or more of the through put in a scrap tire processing operation; scrap tire processing operations generate products (chips) above and below the nominal size. **D6270**

noncombustibles, *n*—the portion of a sample remaining after moisture and combustibles are driven off by heat and combustion. **E955**

occupants—those tenants, subtenants, or other persons or entities using the property or a portion of the property. **D6008**

off the road tire (OTR), *n*—tire designed primarily for use on unpaved roads or where no roads exist, built for ruggedness and traction rather than for speed. **D6700**

operating site, *n*—in waste management, a location or facility where waste is treated, stored, or disposed as part of an on-going operation.

optimum concentration range, *n*—in analysis of trace metals, a range, defined by limits expressed in concentration, below which scale expansion must be used and above which curve correction should be considered.

oversize bulky waste (OBW)—items whose large size precludes or complicates processing or sampling. **E868**

owner—generally the fee owner of record of the property. **D6008**

package or outside package—a package plus its contents. **D6346**

packaging—a receptacle and any other components or materials (drums, boxes, liners, absorbents, etc.) necessary for the receptacle to perform its containment function in conformance with the minimum packing requirements of 40 CFR 171, 172, 173. **D6346**

pail—a small container, usually with a capacity of 5 U.S. gal (19 L). Pails typically have bungs or spouts, or the entire lid can be removed. **D5679, D5680**

pail—a small container, usually of 5-gal (19-L) capacity. Pails typically have bungs or spouts, or the entire lid can be removed. **D5743**

paperwork—all required site documentation, which may include the manifests, waste profiles, material safety data sheets (MSDS), site forms, sample labels, custody seals, and chain of custody forms. **D5679, D5680, D5743**

partial remedy, *n*—an interim or incomplete solution intended to be consistent with the expected permanent remedy for treatment, control, elimination, or management of risk associated with the release of a contaminant to the environment. **D5745**

particle size, *n*—the controlling lineal dimension of individual particles (see Terminology E456). **D6323**

particulate rubber, *n*—raw, uncured, compounded or vulcanized rubber that has been transformed by means of a mechanical size reduction process into a collection of particles, with or without a coating of a partitioning agent to prevent agglomeration during production, transportation, or storage (also see definition of **buffing rubber, granulated rubber, ground rubber,** and **powdered rubber**).[7] **D6270**

passenger car tires, *n*—a tire with less than an 18 in. (45.7 cm) rim diameter for use on cars only. **D6700**

passenger tire equivalent (PTE), *n*—a measurement of mixed passenger and truck tires, where five passenger tires are equal to one truck tire. **D6700**

passive sampling—the collection of ground-water quality data so as to induce no hydraulic stress on the aquifer. **D4448**

passenger car tire, *n*—a tire with less than a 457-mm rim diameter for use on cars only. **D6270**

performance test—a test devised to permit observation and measurement of the performance of a system or unit of equipment operating under prescribed load conditions. **E868**

petroleum exclusion—the exclusion from CERCLA liability provided in 42 USC § 9601(14), as interpreted by the courts and EPA: "The term (hazardous substance) does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (*A*) through (*F*) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)." **D6008**

petroleum products—those substances included within the meaning of the petroleum exclusion to CERCLA 42 USC § 9601(14) as interpreted by the courts and EPA, that is: "petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (*A*) through (*F*) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)." **D5746, D6008**

Phase I Environmental Site Assessment—the process described in Practice E1527. **D6008**

pits, ponds, or lagoons—man-made or natural depressions in a ground surface that are likely to hold liquids or sludge containing hazardous substances or petroleum products. The likelihood of such liquids or sludge being present is determined by evidence of factors associated with the pit, pond, or lagoon, including, but not limited to, discolored water, distressed vegetation, or the presence of an obvious wastewater discharge. **D6008**

pneumatic tires, *n*—a tire that depends on the compressed air it holds to carry the load. It differs from a solid tire in which the tire itself carriers the load. **D6700**

polynary separator, *n*—a device that separates a single input feed stream into three or more output product streams. **E889**

population, *n*—the totality of items or units of materials under consideration. **D5792, D6044**

potential migration pathway, *n*—the route that may be taken by contaminants in the environment as they move or are transported from the source(s), usually in a downgradient direction. **D5745**

powdered rubber, *n*—particulate rubber composed of mainly nonspherical particles that have a maximum particle dimension equal to or below 425 µm (40 mesh) (also refer to **particulate rubber**).[7] **D6270**

precision, *n*—a generic concept used to describe the dispersion of a set of measured values.

DISCUSSION—Measures frequently used to express *precision* are standard deviation, relative standard deviation, variance, repeatability, reproducibility, confidence interval, and range. In addition to specifying the measure and the *precision*, it is important that the number of repeated measurements upon which the estimated *precision* is based also be given. **D5792**

preliminary assessment (PA), *n*—a review of existing information and an off-site reconnaissance, if appropriate, to determine whether a release may require additional investigation or action. A preliminary assessment may include an on-site reconnaissance, if appropriate. See ASTM Guidance for Transaction Screen Questionnaire (Practice E1528). **D5745**

primary variable, *n*—the primary characteristic or measurement of interest. **D6582**

process waste—inorganic by-product materials such as mine tailings, culm piles, coal processing conversion and combustion wastes, cement and limekiln dust, by-product gypsum, and chemically treated compositions made from these wastes or waste mixtures. **E850**

processed tire, *n*—a scrap tire that has been altered, converted, or size reduced. **D6700**

property—the real DoD property subject to classification under the classification of environmental condition of property area types. **D5746**

property—the real property that is the subject of the EBS described in this practice as well as the real property adjacent to the subject property (which may be privately owned). Real property includes buildings and other fixtures and improvements located on the property and affixed to the land. **D6008**

property tax files—the files kept for property tax purposes by the local jurisdiction where the property is located and includes records of past ownership, appraisals, maps, sketches, photos, or other information that is reasonably ascertainable and pertaining to the property. **D6008**

proximate analysis, *n*—the determination, by prescribed methods, of moisture, volatile matter, fixed carbon (by difference), and ash.

DISCUSSION—Unless otherwise specified, the term *proximate analysis* does not include determinations of chemical elements or any determinations other than those named.

purity—The purity of a stream is defined in terms of one or more identifiable components, *x*, *y*, *z*, etc. The purity for any component such as *x* is the mass of *x* in a stream divided by the total mass of that stream. In some cases, the mass of *x* must be defined in practical terms that relate to the origin of the feed. For example, the purity of a ferrous product magnetically recovered from refuse can be expressed as the purity of ferrous by proximate analysis. Alternatively, it can be expressed as the purity by manual sorting, with all nonferrous materials that cannot readily be removed by hand as the contaminants. In any case, purity must be defined for each application. **E889**

quality assurance (QA), *n*—an integrated system of management activities involving planning, quality control, quality assessment, reporting, and quality improvement to ensure that a process or service (for example, environmental data) meets defined standards of quality with a stated level of confidence. **EPA QA/G-4, D5792**

quality control (QC), *n*—the overall system of technical activities whose purpose is to measure and control the quality of a product or service so that it meets the needs of users. The aim is to provide quality that is satisfactory, adequate, dependable, and economical. **EPA QA/G-4, D5792**

radial tire, *n*—a tire constructed so that the ply cords extend from bead to bead at a 90° angle to the centerline of the road. **D6700**

random error, *n*—(*1*) the chance variation encountered in all measurement work, characterized by the random occurrence of deviations from the mean value; (*2*) an error that affects each member of a set of data (measurements) in a different manner. **D5792**

ranked set sampling, *n*—a sampling method in which samples are ranked by the use of auxiliary information on the samples and only a subset of the samples are selected for the measurement of the primary variable. **D6582**

RCRA generators—those persons or entities that generate hazardous wastes, as defined and regulated by RCRA. **D6008**

RCRA generators list—list kept by EPA of those persons or entities that generate hazardous wastes, as defined and regulated by RCRA. **D6008**

RCRA TSD facilities—those facilities on which treatment, storage, or disposal, or a combination thereof, of hazardous wastes takes place, as defined and regulated by RCRA. **D6008**

RCRA TSD facilities list—list kept by EPA of those facilities on which treatment, storage, or disposal, or a combination thereof, of hazardous wastes takes place, as defined and regulated by RCRA. **D6008**

receptor, *n*—humans or other species potentially at risk from exposure to contaminant(s) at the point(s) of exposure. **D5745**

recorded land title records—records to be searched during a chain of title search, including records of fee ownership, leases, land contracts, easements, liens, and other encumbrances on or of the property recorded in the place where land title records are recorded, by law or custom, for the local jurisdiction in which the property is located. (Such records are commonly kept by a municipal or county recorder or clerk.) Such records may be obtained from title companies or from the local government agency directly. **D5746**

recorded land title records—records of fee ownership, leases, land contracts, easements, liens, and other encumbrances on or of the property recorded in the place where land title records are, by law or custom, recorded for the local jurisdiction in which the property is located. (Commonly, such records are kept by a municipal or county recorder or clerk.) Such records may be obtained from title companies or directly from the local government agency. Information about the title to the property that is recorded in a U.S. district court or any place other than where land title records are, by law or custom, recorded for the local jurisdiction in which the property is located, are not considered part of recorded land title records. **D6008**

records of emergency release notifications (SARA § 304)**—**Section 304 of EPCRA or Title III of SARA requires operators of facilities to notify their local emergency planning committee (as defined in EPCRA) and State emergency response commission (as defined in EPCRA) of any release beyond the facility's boundary of any reportable quantity of any extremely hazardous substance. Often the local fire department is the local emergency planning committee. Records of such notifications are "records of emergency release notifications" (SARA § 304). **D6008**

recovery, percent, *n*—the amount of a material actually recovered by an assay using a prescribed procedure, or obtained from a process, as a percentage of the as-received material.

reference material (RM)—the generic term referring to a certified material. D6956

refuse-derived fuel (RDF)—RDF–1—Waste used as a fuel in as-discarded form.

RDF–2—Waste processed to coarse particle size with or without ferrous metal separation.

RDF–3—shredded fuel derived from municipal solid waste (MSW) that has been processed to remove metal, glass, and other inorganics. This material has a particle size such that 95 weight % passes through a 2-in. square mesh screen.

RDF–4—Combustible waste processed into powder form—95 weight % passing a 10–mesh screen.

RDF–5—Combustible waste densified (compressed) into the form of pellets, slugs, cubettes or briquettes.

RDF–6—Combustible waste processed into liquid fuel.

RDF–7—Combustible waste processed into gaseous fuel. E897

release, *n*—any spilling, leaking, pumping, emitting, emptying, discharging, injecting, escaping, leaching, dumping, and disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any hazardous chemical, extremely hazardous substance, or CERCLA hazardous substance. D5745

release, *n*—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) of any hazardous chemical, extremely hazardous substance, or CERCLA hazardous substance. D5746

relevant and appropriate requirements—those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance 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. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate. D5746

remedial actions—those actions consistent with a permanent remedy taken instead of, or in addition to, removal action 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 to cause substantial danger to the present or future public health or welfare or the environment. D5746

removal, *n*—the cleanup or removal of released hazardous substances from the environment; such actions as may be necessary to take in the event of the threat of release of hazardous substances into the environment; such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances; the disposal of removed material; or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. D5745

removal—the cleanup or removal of released hazardous substances from the environment; such actions as may be necessary to take in the event of the threat of release of hazardous substances into the environment; such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances; the disposal of removed material; or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release. D5746

representative sample, *n*—a sample collected in such a manner that it reflects one or more characteristics of interest (as defined by the project objectives) of a population from which it is collected.

DISCUSSION—A representative sample can be a single sample, a collection of samples, or one or more composite samples. A single sample can be representative only when the population is highly homogeneous. D6044, D6582

representative sample, *n*—a sample collected such that it reflects one or more characteristics of interest of the lot or population from which it was collected. D6063

representative sample, *n*—a sample collected such that it reflects one or more characteristics of interest (as defined by the project objectives) of a population from which it was collected. D5956, D6311, D6538, D6759

representative sample—a sample collected in such a manner that it has characteristics equivalent to the material being sampled. E828, E949

representative sampling, *n*—the process of obtaining a representative sample or a representative set of samples. D6044

representative set of samples, *n*—a set of samples that collectively reflect one or more characteristics of interest of a population from which they were collected. See *representative sample*. D6044

representative subsample, *n*—a subsample collected in such a manner that it reflects one or more characteristics of interest (as defined by the project objectives) of the laboratory sample from which it was collected.

DISCUSSION—A representative subsample can apply to a single sample, or a composite sample. D6323

required remedial actions—remedial actions determined necessary to comply with the requirements of CERCLA § 120(h)(3)(B)(i). D5746

required response actions—removal or remedial actions, or both, determined necessary to comply with the requirements of CERCLA § 120(h)(3)(B)(i). D5746

resource application—use of stabilized products in specific areas such as earth liners, foundations, road base, backfills, embankments, earth dams, etc. E1266

resource structural products—structural products produced by lime, fly ash, and heavy metal waste; examples are block, brick, aggregates, gabions, and miscellaneous structural shapes. **E1266**

respiration rate, *n*—in a microbial aqueous system, the quantitative consumption of oxygen, generally expressed as mg O_2/L/h.

respiration rate—the quantitative consumption of oxygen by an aqueous microbial system. The consumption is generally expressed as mg O_2/L/h. **D5120**

retainer basket, *n*—in sampling, a one-way gate on a sampling device that minimizes loss of sample when retrieving a sampler; also called a core catcher.

rim, *n*—the metal support for the tire and tube assembly on the wheel. **D6700**

rip-shear shredders, *n*—a tire shredder designed to reduce a scrap tire to pieces. The size and shape of the rubber particle is dependent on the processing action of the shredder (that is, by cutting blades, rotary shear, or rip shear). **D6700**

risk, *n*—the probability or an expected loss associated with an adverse effect.

DISCUSSION—*Risk* is frequently used to describe the adverse effect on health or on economics. Health-based *risk* is the probability of induced diseases in persons exposed to physical, chemical, biological, or radiological insults over time. This *risk* probability depends on the concentration or level of the insult, which is expressed by a mathematical model describing the dose and *risk* relationship. *Risk* is also associated with economics when decision makers have to select one action from a set of available actions. Each action has a corresponding cost. The *risk* or expected loss is the cost multiplied by the probability of the outcome of a particular action. Decision makers should adopt a strategy to select actions that minimize the expected loss. **D5792**

risk, *n*—the probability or likelihood that an adverse effect will occur. **E943, D6311**

risk-based criteria—cleanup levels intended to meet a predetermined level of acceptable risk to human health or the environment. **D5746**

rough shred, *n*—a piece of a shredded tire that is larger than 50 mm by 50 mm by 50 mm, but smaller than 762 mm by 50 mm by 100 mm. **D6270**

rough shred, *n*—a piece of a shredded tire that is larger than 2 in. (5.1 cm) by 2 in. (5.1 cm) by 2 in. (5.1 cm), but smaller than 30 in. (76.2 cm) by 2 in. (5.1 cm) by 4 in. (10.2 cm). **D6700**

rubber, *n*—an elastomer, generally implying natural rubber, but used loosely to mean any elastomer, vulcanized and unvulcanized. By definition, rubber is a material that is capable of recovering from large deformations quickly and forcibly and can be, or already is, modified to a state in which it is essentially insoluable in a boiling solvent. **D6700**

rubber fines, *n*—small particles of ground rubber that result as a by-product of producing shredded rubber. **D6270**

run-of-mine, *adj*—usage in this test method refers to ore and waste rock produced by excavation (with attendant variable particle sizes) from open pit or underground mining operations. **D5744**

sample, *n*—one or more items or portions collected from a lot or population.

sample, *n*—a portion of material taken from a larger quantity for the purpose of estimating properties or composition of the larger quantity. **E856, D4547, D6051, D6323, D6538, D6759**

sample, *n*—a portion of material that is taken for testing or for record purposes. **D6044**

sample division—the process of extracting a smaller sample from a gross sample wherein the representative properties of the large sample are retained. **E828**

sample division—the process of extracting a smaller sample from a sample so that the representative properties of the larger sample are retained. During this process it is assumed that no change in particle size or other characteristics occurs. **E949**

sample preparation—the process that includes drying, size reduction, division, and mixing of a laboratory sample for the purpose of obtaining an unbiased analysis sample. **E949**

sample reduction—the process whereby sample particle size is reduced without change in sample weight. **E949**

sampler, *n*—the device used to obtain a sample. **D6063**

sample standard deviation, *n*—the square root of the sum of the squares of the individual deviations from the sample average divided by one less than the number of results involved.

$$S = \sqrt{\frac{\sum_{j=1}^{n} \left(X_j - \bar{X}\right)^2}{n - 1}}$$

where:

S = sample standard deviation,
n = number of results obtained,
X_j = jth individual result, and
$\bar{X}$ = sample average.

D5792

sampling density—the number of borings (that is, sampling points) per unit area. **D6982**

sampling design, *n*—(*1*) the sampling schemes specifying the point(s) for sample collection; (*2*) the sampling schemes and associated components for implementation of a sampling event.

DISCUSSION—Both of the above definitions are commonly used within the environmental community. Therefore, both are used within this document. **D6311**

sampling error—the systematic and random deviations of the sample value from that of the population. The systematic error is the *sampling bias*. The random error is the *sampling variance*.

DISCUSSION—Before the physical samples are taken, potential sampling variance comes from the inherent population heterogeneity (sometimes called the "fundamental error," see *heterogeneity*). In the physical sampling stage, additional contributors to sampling variance include random errors in collecting the samples. After the samples are collected, another contributor is the random error in the measurement process. In each of these stages, systematic errors can occur as well, but they are the sources of bias, not sampling variance. **D6044**

sampling process, *n*—the method and procedure of collecting physical samples from a defined population. **D6842**

scrap tire, *n*—a tire, which can no longer be used for its original purpose due to wear or damage. **D6270**

scrap tire processing, *n*—any method of size reducing whole scrap tires to facilitate recycling, energy recovery or disposal. **D6700**

screen, *n*—an apparatus for separating sizes of granules. **D6700**

secondary material, *n*—fragments or finished products or leftovers from a manufacturing process which converts a primary material into a commodity of economic value. **D6700**

sectioned tire, *n*—a tire that has been cut into at least two parts. **D6700**

selectivity—the ability to accurately measure the analyte in the presence of other sample matrix components or analytical process contaminants. **D6956**

semi-major axis, a—one-half the length of the long axis of an ellipse. For a circle, this distance is simply the radius. **D6982**

semi-minor axis, b—one-half the length of the short axis of an ellipse. **D6982**

short-term measure, *n*—an early action designed to have an authorized duration of less than one year for the effective control or management of a contaminant released to the environment. **D5745**

shred sizing, *n*—a term which generally refers to the process of particles passing through a rated screen opening rather than those which are retained on the screen. **D6270**

shred sizing, *n*—generally refers to the process of particles passing through a rated screen opening rather than those which are retained on the screen. Examples include:

1 by 1 in. (2.5 by 2.5 cm), n—a sized reduced scrap tire, with all dimensions 1 in. (2.5 cm) maximum.

2 by 2 in. (5.1 by 5.1 cm), n—a size reduced scrap tire, with all dimensions 2 in. (5.1 cm) maximum.

X in. minus, n—sized reduced scrap tires, the maximum size of any piece has a dimension no larger than *X* plus 1 in. (*X* plus 2.5 cm), but 95 % of which is less than *X* in. (2.54 *X* cm) in any dimension (that is, 1 in. (2.5 cm) minus; 2 in. (5.1 cm) minus; 3 in. (7.6 cm) minus, and so forth). **D6700**

shredded rubber, *n*—pieces of scrap tires resulting from mechanical processing. **D6270, D6700**

shredded tire, *n*—a size reduced scrap tire where the reduction in size was accomplished by a mechanical processing device, commonly referred to as a shredder. **D6270**

shredder—a size-reduction machine that tears or grinds materials to a smaller and more uniform particle size. **E1248**

shredder, *n*—a machine used to reduce whole tires to pieces. **D6700**

sidewall, *n*—the side of a tire between the tread shoulder and the rim bead. **D6270, D6700**

significant loss, *n*—any loss that introduces a bias in final results that is of appreciable importance to concerned parties. **E949**

single pass shred, *n*—a shredded tire that has been processed by one pass through a shear type shredder and the resulting pieces have not been classified by size. **D6270, D6700**

site characterization, *n*—the process by which information relating to the nature, extent, potential migration pathways, and receptors of environmental contaminants is gathered, interpreted, and documented. Site characterization efforts to provide a basis for the following: (*1*) the development of a conceptual site model (CSM), (*2*) the selection and design of a site remediation plan, or (*3*) the measuring point against which the effectiveness of a remedy can be evaluated, or some combination thereof. **D5745**

site inspection (SI), *n*—an on-site investigation to determine whether a release or potential release exists and the nature of the associated threats. The purpose is to augment the data collected in the preliminary assessment and to generate, if necessary, sampling and other field data to determine whether further action or investigation is appropriate. **D5745, D5746**

site remediation, *n*—those actions taken in the event of a release or threatened release of a hazardous substance in to the environment, to prevent or minimize the impact of the release, or to mitigate a substantial hazard to present or future environmental conditions. This early action may or may not lead to ultimate restoration of the site. **D5745**

size characterization, *n*—the process by which information relating to the nature, extent, potential migration pathways, and receptors of environmental contaminants is gathered, interpreted, and documented. Site characterization efforts to provide a basis for the following: (*1*) the development of a conceptual site model (CSM), (*2*) the selection and design of a site remediation plan, or (*3*) the measuring point against which the effectiveness of a remedy can be evaluated, or some combination thereof. **D5745**

size reduction device or equipment—a device which size reduces (Synonyms: shredder, grinder, pulverizer, and mill). **E959**

sludge—any mixture of solids that settles out of solution. Sludges contain liquids that are not apparent as free liquids. **D5743, D6323, D6759**

softening temperature, ST, *n*—the temperature at which a pyrometric cone has fused down to a spherical lump in which the height is equal to the width at the base.

softening temperature, ST—the temperature at which the cone has fused down to a spherical lump in which the height is equal to the width at the base. **E953/E953M**

solidification—a binding physical and chemical treatment process that transforms materials containing free liquids into a solid, soil-like, or clayey material. This solid material can be a monolithic block with structural integrity. **E1266**

solid waste composition or waste composition—the characterization of solid waste as represented by a breakdown of the mixture into specified waste components on the basis of mass fraction or of weight percent. **D5231**

solid waste disposal site—a place, location, tract of land, area, or premises used for the disposal of solid wastes as defined by state solid waste regulations. The term is synonymous with the term landfill and is also known as a garbage dump, trash dump, or similar term. **D6008**

solute—chemical species (for example, ion, molecule, etc.) in solution. **D4646, D5285**

solvent—a chemical compound that is capable of dissolving another substance and a hazardous substance, used in a number of manufacturing/industrial processes including but not limited to the manufacture of paints and coatings for industrial and household purposes, equipment clean-up, and surface degreasing in metal fabricating industries. **D6008**

sorbate—chemical species sorbed by a sorbent. **D4646, D5285**

sorbent—a substance that sorbs the solute from solution (for example, soil, sediment, till, etc.). **D4646**

sorption—depletion of an amount of solute initially present in solution by a sorbent. **D4646, D5285**

sorption affinity—the relative degree of sorption that occurs by a geomedia. **D4646**

sorting sample, *n*—in waste management, a 100 to 150 kg (200 to 300 lb) portion of a vehicle load of municipal solid waste that is deemed to represent the characteristics of that load.

sorting sample—a 200 to 300-lb (91 to 136-kg) portion deemed to represent the characteristics of a vehicle load of MSW. **D5231**

source, *n*—the location at which contamination has entered the natural environment. **D5745**

source-separated steel cans, *n*—post-consumer products that are generated as separated can fractions by commercial or household sources.

(a) all other steel cans, n—steel containers for food products or liquids, with a maximum capacity of 5 gal, that are not included in one of the other definitions.

(b) bi-metal beverage cans, n—steel cans with nonferrous metal convenience ends (normally made of aluminum), originally containing beer or carbonated beverages, but not including other contaminants.

(c) bi-metal food cans, n—steel cans with nonferrous metal (usually aluminum) convenience ends, originally containing snack foods, but not including other contaminants.

specifications, *n*—written requirement for processes, materials or equipment. **D6700**

specific energy—energy comsumption expressed on the basis of unit mass of throughput. **E929**

specimen, *n*—a specific portion of a material or laboratory sample upon which a test is performed or which is taken for that purpose. **D4439, D6051**

squirrel foot, *n*—exposed, rough pieces of belt or bead wire. (See also *fishhooks*). **D6700**

stabilization—a treatment process that involves both a physical and chemical reaction for treating heavy metal waste. Heavy metal wastes are considered stabilized when they meet current applicable regulatory requirements. **E1266**

State registered USTs—State lists of underground storage tanks required to be registered under Subtitle I, Section 9002 of RCRA. **D6008**

static calorimeter, *n*—a calorimeter without a thermostated jacket. **D5468**

stationary belt method—a method of gross sample collection in which the conveyor belt is stopped and the sample of material is removed manually. **E959**

statistic, *n*—a quantity calculated from a sample of observations, most often to form an estimate of some population parameter. **D6250, E456**

steel belt, *n*—rubber coated steel cords that run diagonally under the tread of steel radial tires and extend across the tire approximately the width of the tread. **D6270**

stratum, *n*—a subgroup of the population separated in space or time, or both, from the remainder of the population, being internally similar with respect to a target characteristic of interest, and different from adjacent strata of the population.

DISCUSSION—A landfill may display spatially separated strata, such as old cells containing different wastes than new cells. A waste pipe may discharge into temporally separated strata of different constituents or concentrations, or both, if night-shift production varies from the day shift. In this guide, strata refer mostly to the stratification in the concentrations of the same constituent(s). **D6044**

structural fill—man-made deposits of solid materials. Examples include backfills, landfills, embankments, earth dams, linings and blankets, foundations, canals, road base, footings, and trenches. **E850**

structural landfill—man-made earth work meeting engineered practices and structural requirements. The fill must also be environmentally acceptable and meet EPA requirements. (See 40 CFR 268). **E1266**

subsample, *n*—a portion of a sample.

DISCUSSION—In the laboratory, a subsample is commonly referred to by such terms as specimen or aliquote.

sump—a pit, cistern, cesspool, or similar receptacle where liquids drain, collect, or are stored. **D6008**

supplemental fuel, *n*—a combustible material that displaces a portion of traditional fuel source. It refers to the product being used in conjunction with another conventional fuel but typically not as a sole fuel supply. **D6700**

surrogate—a substance with properties that mimic the performance of the analyte of interest in the measurement system, but which is not normally found in the sample of concern and is added for quality control purposes. **D6956**

target—the object or "hot spot" that is being searched for. **D6982**

TDF, *n*—See *tire-derived fuel*. **D6700**

test interval—a test interval is equal to one-quarter of the test period. **E959**

test period—the test period is two to four continuous h of net-processing time. **E959**

threshold concentration—the concentration of a contaminant above which a hot spot is considered to be detected. **D6982**

time-averaged throughput method—the method whereby the average throughput is calculated by dividing the total mass size reduced by the net processing time. **E959**

tire, *n*—a continuous solid or pneumatic rubber covering encircling the wheel of a vehicle. **D6700**

tire chip, *n*—See *chipped tire*. **D6700**

tire chips, *n*—Pieces of scrap tires that have a basic geometrical shape and are generally between 12 mm and 50 mm in size and have most of the wire removed (Syn. *chipped tire*). **D6270**

tire-derived fuel, *n*—the end product of a process that converts whole scrap tires into a specific chipped form. This specified product then would be capable of being used as fuel. **D6700**

tire shreds, *n*—Pieces of scrap tires that have a basic geometrical shape and are generally between 50 mm and 305 mm in size. **D6270**

total combustibles—materials that include paints, lacquers, coatings, plastics, etc., associated with the original ferrous product, as well as combustible materials (paper, plastic, textiles, etc.) which become associated with the ferrous product after it is manufactured. **E702**

total solvent extractable content (TSEC)—the total concentration by weight (w/w) of organic materials that is extractable from a soil or solid waste by the selected solvent. **D5368**

tread, *n*—that portion of the tire which contacts the road. **D6270, D6700**

tread rubber, *n*—compounded, natural, or synthetic rubber, which is placed on a buffed casing and vulcanized to it to provide a new wearing surface. **D6700**

trommel, *n*—a mechanical device that sorts size-reduced scrap tires. **D6700**

truck tire, *n*—a tire with a rim diameter of 500 mm or larger. **D6270**

TSEC—total solvent extractable content. The total concentration by weight (w/w) of organic materials that are extractable from a soil or solid waste by the selected solvent. **D5369**

turbidity—reduction of transparency of a sample due to the presence of particulate matter. **D5660**

ultimate analysis, *n*—in analysis of combustible materials, the determination of the percentages of carbon, hydrogen, sulfur, nitrogen, chlorine, ash, and oxygen in a moisture-free sample; the percentage of oxygen is usually determined by difference.

unbalanced design, *n*—a statistical study where replication in some or all of the levels of ANOVA is not identical. **D6842**

unconsolidated—for solid material, the characteristic of being uncemented or uncompacted, or both, and separated easily into smaller particles. **D5680**

unconsolidated geologic material (geomedia)—a loosely aggregated solid natural material of geologic origin (for example, soil, sediment, till, etc.). **D4646, D5285**

underground storage tank (UST)—any tank, including underground piping connected to the tank that is or has been used to contain hazardous substances or petroleum products and the volume of which is 10 % or more beneath the surface of the ground. **D6008**

unit cell—the smallest area into which a grid can be divided so that these areas have the same shape, size and orientation. For a triangular grid, the unit cell is a 60°/120° rhombus comprised of two equilateral triangles with a common side. **D6982**

unloaded condition—equipment not doing processing work (for example, moving, changing the characteristics of, or separating materials), but operating in a freewheeling, or idling, condition. **E929**

unprocessed municipal solid waste, *n*—municipal solid waste in its as-discarded form and that has not been size-reduced, separated, or otherwise processed.

unprocessed municipal solid waste—solid waste in its discarded form, that is, waste that has not been size reduced or otherwise processed. **D5231**

used tire, *n*—a tire removed from a vehicle's rim, which cannot be described legally as new, but which is structurally intact and has a tread depth greater than the legal limit. This tire can be remounted onto another vehicle's rim without repair. **D6700**

USGS 7.5 Minute Topographic Map—the map (if any) available from or produced by the United States Geological Survey, entitled "USGS 7.5 Minute Topographic Map" and showing the property. **D6008**

void volume—the volume between the solid particles in a bed of granular material. Also called the interstitial volume. **D4874**

volatile matter, *n*—mass loss by a material, as a gas or vapor, as determined by definite prescribed methods which may vary according to the nature of the material.

DISCUSSION—when dealing with fuels, volatile matter is exclusive of moisture.

volatile solids, *n*—the portion of total solids present in a sample that have calorific value and may be removed or reduced through biological processes.

waste, *n*—a material that is unwanted at its present location; that is no longer useful for its original purpose; that has been disposed, or any combination thereof.

waste component—a category of solid waste, composed of materials of similar physical properties and chemical composition, which is used to define the composition of solid waste, for example, ferrous, glass, newsprint, yard waste, aluminum, etc. **D5231**

waste composition, *n*—of a solid waste, characterization of multi-constituent waste by a breakdown into specified waste components on the basis of mass or volume fraction or percentage. (*Syn.* **solid waste composition**.)

waste rock, *n*—rock produced by excavation from open pit or underground mining operations whose economic mineral content is less than a specified economic cutoff value. **D5744**

waste tire, *n*—a tire which is no longer capable of being used for its original purpose but which has been disposed of in such a manner that it cannot be used for any other purpose. **D6270**

waste tire, *n*—a tire that is no longer capable of being used for its original purpose, but has been disposed of in such a manner that it can not be used for any other purpose. **D6700**

wastewater—water that (*1*) is or has been used in an industrial or manufacturing process, (*2*) conveys or has conveyed sewage, or (*3*) is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. Wastewater does not include water originating on or passing through or adjacent to a site, such as stormwater flows, that has not been used in industrial or manufacturing processes, has not been combined with sewage, or is not directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. **D6008**

water quality indicator parameters—refer to field monitoring parameters that include but are not limited to pH, specific conductance, dissolved oxygen, oxidation-reduction potential, temperature, and turbidity that are used to monitor the completeness of purging. **D4448**

whole tire, *n*—a scrap tire that has been removed from a rim but which has not been processed. **D6270**

wipe, *n*—sorbent material (e.g. cotton gauze) that is rubbed on a surface to collect a sample for chemical analysis. **D6661**

wires, *n*—high tensile, brass plated steel wires, coated with a special adhesion-promoting compound, that are used as tire reinforcement. Belts or radial tires plies and beads are common uses. **D6700**

work plan, *n*—a document describing the approach and methodology for executing a list of action items specific to a particular site.

x-mm minus, *n*—pieces of classified, size reduced scrap tires where the maximum size of 95 % of the pieces is less than x-mm in any dimension (that is, 25-mm minus; 50-mm minus; 75-mm minus, etc). **D6270**