

## OIL AND GAS ENVIRONMENTAL GLOSSARY

Acid Deposition:	A complex chemical and atmospheric phenomenon that occurs when emissions of sulfur and nitrogen compounds and other substances are transformed by chemical processes in the atmosphere, often far from the original sources, and then deposited on earth in either a wet or dry form. The wet forms, popularly called "acid rain," can fall as rain, snow, or fog. The dry forms are acidic gases or particulates.
Acidic:	A pH which can be corrosive; at hazardous waste levels of 2.0 or less.
Activated Carbon:	Carbon granules that are very absorbent. They are used in filters to absorb dissolved hydrocarbon materials, ;and sometimes to remove odors.
Acute Toxicity:	An immediate or short term toxic affect.
Adhesion:	Molecular attraction which holds the surfaces of two substances in contact.
Administrative Order:	A legal document signed by EPA directing an individual, business, or other entity to take corrective action or refrain from an activity. It describes the violations and actions to be taken, and can be enforced in court. Such orders may be issued, for example, as a result of an administrative complaint whereby the respondent is ordered to pay a penalty for violations of a statute.
Adsorption:	The adhering of contaminants to another substance, but not the chemical combination of them.
Alkaline:	A Ph greater than neutral; corrosive at 12.0 or above.
Alluvium:	The sediments usually deposited by running water, most frequently at or just below the surface of ground.
Ambient:	The surrounding environment, as opposed to the confined environment. Ambient air exposure means the exposure in the outside to some air contaminant, as opposed to a direct exposure by looking into a tank, or within a building.
Analytes:	The chemicals for which a sample is analyzed.
Attenuation:	The process by which a compound is reduced in concentration over time, through adsorption, degradation, dilution, and/or transformation.
Area Source or Permit:	A combination of sources which are permitted under one umbrella permit.
Backfill:	The material, usually dirt, used to refill a hole which has been dug.

Background:	The concentration of contaminants in an ambient area unaffected by the industrial concern at hand.
Baghouse Filter:	Large fabric bag, usually made of glass fibers, used to eliminate intermediate and large (greater than 20 microns in diameter) particles. This device operates in a way similar to the bag of an electric vacuum cleaner, passing the air and smaller particulate matter, while entrapping the larger particulates.
Bailed Sample:	A sample collected with a pail or bucket, usually stainless steel, by lowering it into the well.
Bailer:	A long cylindrical container with a valve at its lower end used to extract water from a well or test hole (such as a water sample). <sup>1</sup>
Barite:	Barium sulfate, BaSO <sub>4</sub> used to increase the weight of drilling mud. It is 4.2 times heavier than water. <sup>2</sup>
Baseline:	An established level of contamination or activity before entering a property or commencing operations. It may be the contamination level, or emission levels.
Bedrock:	Solid rock in the ground which usually prevents migration downward of water or contaminants.
Blowout:	An uncontrolled flow of gas, oil, or other well fluids from the well into the atmosphere. It occurs when the underground formation pressure exceeds the downward pressure applied through the wellbore by the column of drilling fluid <sup>3</sup>
Boom:	A floating device used to collect oil that floats on top of the water. Similar to the action of lowering a pan partially into the water.
Brackish Water:	A mixture of fresh and salt water.
Buffer:	The action of reducing the effect of one system or area on another.
Carcinogen:	A substance which produces or promotes cancer.
Cathodic Protection:	A technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell.
Circulation:	The movement of drilling fluid from the mud pits to the well and back to the mud pits. <sup>4</sup>
Clarifier:	A tank in which solids settle, usually cone shaped built into the ground.
Conductivity:	The ability of heat to flow through a material. In

---

<sup>1</sup> R. Baker, A Primer of Oilwell Drilling (1979) (“Primer”).

<sup>2</sup> Primer.

<sup>3</sup> Primer.

<sup>4</sup> Primer.

	alkaline waters, it is usually 0.64 of total dissolved solids.
Consent Decree:	A legal document, approved by a judge, that formalizes an agreement reached between EPA and potentially responsible parties (PRPs) through which PRPs will conduct all of part of a cleanup action at a Superfund site; cease or correct actions or processes that are polluting the environment; or otherwise comply with regulations where the PRP's failure to comply caused EPA to initiate regulatory enforcement actions. The consent decree describes the actions PRPs will take and may be subject to a public comment period.
Contaminant:	A substance which changes the physical characteristics of the element in which it is placed (i.e., soil, water or air). A contaminant does not of necessity imply pollution. See the definition of "pollution."
Contingency Plan:	A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that releases toxic chemicals, hazardous wastes, or radioactive materials which threaten human health or the environment. (See: National Oil and Hazardous Substances Contingency Plan.)
Cooling Tower:	A tower that uses water to cool heat in an industrial process.
Dewater:	To remove the free water. <sup>5</sup>
Dike:	A low wall that can act as a barrier to prevent a spill from spreading.
Displacement fluid:	Drilling mud or salt water that is pumped into the well after the cement to force the cement out of the casing and into the annulus for setting. <sup>6</sup>
Dispose:	To engage in any act of disposal subject to regulation by the Commission including, but not limited to, conducting, draining, discharging, emitting, throwing, releasing, depositing, burying, landfarming, or allowing to seep, or to cause or allow any such act of disposal. <sup>7</sup>
Dredging:	Removal of mud from the bottom of water bodies using a scooping machine. This disturbs the ecosystem and causes silting that can kill aquatic life. Dredging of contaminated muds can expose aquatic life to heavy

---

<sup>5</sup> Railroad Commission Rule 8(a)(23).

<sup>6</sup> Primer.

<sup>7</sup> Railroad Commission Rule 8(a)(24).

	metals and other toxics. Dredging activities may be subject to regulation under Section 404 of the Clean Water Act.
Effluent:	Waste material in liquid form, usually wastewater, from an industrial operation; frequently composed of washwater, process water, cooling water.
Emission Inventory:	A listing, by source, of the amount of air pollutants discharged into the atmosphere of a community. It is used to establish emission standards.
Existing Source:	A source which predates the effective date of environmental regulations.
Filtration:	A treatment process, under the control of qualified operators, for removing solid (particulate) matter from water by passing the water through porous media such as sand or a man-made filter. The process is often used to remove particles that contain pathogenic organisms.
Freeboard:	A distance of safety between the highest allowed level of liquid in an impoundment and the top of the surrounding dike.
Fresh water condensate:	Fresh water that has been condensed from natural gas and collected at gas pipeline drips or gas compressor stations <sup>8</sup>
Gradient:	The slope, be it surface slope or subsurface formation or water slope.
Habitat:	The environment or culture in which animals or plants live.
Heavy Metals:	Metallic elements with high atomic weights, e.g., mercury, chromium, cadmium, arsenic, and lead. They can damage living things at low concentrations and tend to accumulate in the food chain.
Hydrology:	The science dealing with the properties, distribution and circulation of water.
Inert wastes:	Wastes which are essentially insoluble oil and gas wastes, including, but not limited to, concrete, glass, wood, and wire. <sup>9</sup>
Influent:	Water, wastewater, or other liquid flowing into a reservoir, basin, or treatment plant.
Landfarming:	A waste management practice in which oil and gas wastes are mixed with or applied to the land surface in such a manner that the waste will not migrate off or

---

<sup>8</sup> Railroad Commission Rule 8(d)(3).

<sup>9</sup> Railroad Commission Rule 8(d)(3)(B).

	from the landfarmed area. <sup>10</sup>
Leachate:	The material which is removed from soils or waste materials, dissolved and moved through the soil.
Minor permit:	A Railroad Commission of Texas permit to store only a minor amount of oil field fluids or to store or dispose of only a minor amount of oil and gas waste. <sup>11</sup>
Monitoring:	Periodic sampling of water, air or soil.
Mud:	The liquid, usually composed of dry chemicals mixed with a fluid (i.e., oil, water, saltwater) used to circulate through the wellbore. Mud serves carries the drill cuttings back up the hole, protects against blowouts, and deposits a mud cake on the formation wall to prevent possible contamination by loss of fluids to the formation. <sup>12</sup>
Neutral:	Generally a pH in the range of 7.0.
Oil field fluids:	Fluids to be used or reused in connection with activities associated with the exploration, development, and production of oil or gas or geothermal resources, fluids to be used or reused in connection with activities associated with the solution mining of brine, and mined brine. The term “oil field fluids” includes, but is not limited to, drilling fluids, completion fluids, surfactants, and chemicals used to detoxify oil and gas wastes. <sup>13</sup>
Opacity:	The amount of light obscured by particulate pollution in the air; clear window glass has a zero opacity, a brickwall has 100 percent opacity. Opacity is used as an indicator of changes in performance of particulate matter pollution control systems.
Particulate:	Fine dust or particles found in the air.
PH:	Power hydrogen; a measurement of acidity; 0 most acid, 7 neutral, and 14 most alkaline.
Plume:	1. A visible or measurable discharge of a contaminant from a given point of origin. Can be visible or thermal in water, or visible in the air, as for

---

<sup>10</sup> Railroad Commission Rule 8(x)(25).

<sup>11</sup> Railroad Commission Rule 8(d)(6)(G).

<sup>12</sup> Primer.

<sup>13</sup> Railroad Commission Rule 8(a)(27).

example, a plume of smoke.

2. The area of measurable and potentially harmful radiation leaking from a damaged reactor.

3. The distance from a toxic release considered dangerous for those exposed to the leaking fumes.

Pollution:	The introduction of contaminants to the air, soil or water to such an extent that the physical characteristics of the air, soil or water is harmful to human, animal, or plant life, or reasonably poses a threat of harm.
Quality Assurance/Control	A system of procedures, checks, audits, and corrective actions to ensure that all EPA research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality.
Quench tank:	A tank with water used to cool hot materials during industrial activities.
Recharge:	The process by which water is added to a zone of saturation, usually by percolation from the soil surface, e.g., the recharge of an aquifer.
Stimulation:	Administering acid or some other material to enlarge old channels or create new ones through which the oil or gas will flow to get into the wellbore. <sup>14</sup>
Skimming:	Using a machine to remove oil or scum from the surface of the water.
Sump:	Usually a tank in the ground used to collect liquids; often has a pump to move the material through a pipe to a storage tank.
Surface or Subsurface water:	Groundwater, percolating or otherwise, and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all watercourse and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state. <sup>15</sup>

---

<sup>14</sup> Primer.

<sup>15</sup> Railroad Commission Rule 8(a)(29).

Surface Pipe:	The first string of pipe, usually set to a depth established by the regulatory agency which will protect against contamination of fresh water zones.
Tailings:	Residue of raw materials or waste separated out during the processing of crops or mineral ores.
Terotagen:	Substance that causes malformation or serious deviation from normal development of embryos and fetuses.
Turbidity:	A measure of the suspended solids in wastewater, effluent, or water bodies, determined by using tests for “total suspended nonfilterable solids. “ (See: suspended solids.)
Transpiration:	The process by which water vapor is lost to the atmosphere from living plants. The term can also be applied to the quantity of water this dissipated.
Turbidity:	<ol style="list-style-type: none"> <li>1. Haziness in air caused by the presence of particles and pollutants.</li> <li>2. A similar cloudy condition in water due to suspended silt or organic matter.</li> </ol>
Concentrations of chemicals that are present in the environment due to anthropogenic sources (e.g., industry, automobiles.)	
Unsaturated Zone:	The area above the water table where the soil pores are not fully saturated, although some water may be present.
Urban Runoff:	Stormwater from city streets and adjacent domestic or commercial properties that may carry pollutants of various kinds into the sewer systems and/or receiving waters.
Volatile:	Description of any substance that evaporates readily.
Wastewater:	The spent or used water from individual homes, a community, a farm, or an industry that contains dissolved or suspended matter.
Water Table:	The level of ground water.
Watershed:	The land area that drains into a stream.