Glossary of Terms

17(b) Easement – Section 17(b) of ANCSA reserves linear access easements to public lands and water on lands that have been or will be conveyed to Alaska Native Village and Regional Corporations. Easements can take the form of 60-foot wide roads, 25- and 50-foot trails, or 1-acre sites for short-term uses, and are reserved to allow the public to cross private property in order to reach public lands and waterways. They do not authorize public access to the private land that the easement crosses.

Acid generation potential (or net acid generation potential) – A measure of the sulfide minerals in mine dumps and mill tailings and their capability, under oxidizing conditions, to form acid.

Acid wash – Use of a weak acid solution, typically hydrochloric acid, to remove calcium-type scales from the carbon.

Acidulation – The addition of sulfuric acid to remove excess carbonates in the ore before it enters the autoclave circuit. This pre-treatment improves the efficiency of the autoclave from both operations and maintenance aspects. After acidulation, the slurry moves forward to autoclaving.

Activated carbon (or granular activated carbon) – Carbon particles, approximately ⅛-inch in size, typically made by roasting coconut shells.

Adsorption – The adhesion of atoms, ions, biomolecules, or molecules of gas, liquid, or dissolved solids to a surface.

Albedo – A measure of how the surface reflects incoming radiation.

Affected environment – The existing environmental conditions of the potentially affected geographic area or areas.

Alaska Heritage Resources Survey (AHRS) – A data repository with information on reported cultural resources (archaeological sites, buildings, structures, objects or locations, etc.) maintained by the State of Alaska. This data repository is restricted by state law to prevent unauthorized use and to protect identified cultural resources from unwarranted destruction. The AHRS is maintained by the Alaska Department of Natural Resources, Office of History and Archaeology.

Alternatives – Approaches to project design, technology, location, or operations that differ from the Proposed Action but address the project purpose and need, as developed through the NEPA process.

Amphipods – Any of a large order of small crustaceans with a laterally compressed body.

Anadromous – Migrating from the sea to fresh water to spawn. Pertaining to species such as fish that live their lives in the sea and migrate to a freshwater river to spawn.

Apron feeder – A large, variable-speed, steel track (similar to wide bull dozer tracks) with attached pans to carry material. Used to control the rate of material fed into or out of a process.

Archeological eras (Paleo-Indian, Arctic Small Tool Tradition, etc.) – Periods of time in a chronological sequence defined by archaeologists on the basis of artifacts and other archeological data and used to characterize changes through time in technology, subsistence practices, settlement patterns, and other aspects of culture.

Area of Potential Effects (APE) – The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.

Aufeis – A sheet-like mass of layered ice that forms from successive flows of groundwater during freezing temperatures.

Autoclave – A pressurized container used at mines that are producing refractory gold ore with very high sulfide content. Within the autoclave vessel, the sulfide ore is subjected to oxygen at high temperature and pressure to convert it into an oxide ore, which is then amenable to conventional cyanidation to recover the gold.

Ballast water – For ships, water taken onboard into specific tanks to permit proper angle of repose of the vessel in the water, and to ensure structural stability.

Ball mill – A large rotating cylinder partially filled with steel balls. The cascading balls grind the ore into fine particles.

Bathymetry – The measurement of water depth at various places in a body of water; the information derived from such measurements.

Barren solution – Solution from which most of the dissolved gold has been removed.

Baseline condition/data – The existing condition, or conditions prior to future development; serves as a foundation for analysis.

Bench – Step- or terrace-like areas on the sides of a pit. Benches improve pit wall stability and worker safety in working areas.

Benthic – Relating to, or occurring at the bottom of a body of water; in the depths of the ocean.

Best Management Practice (BMP) and standard permit requirements – These are the predictable requirements that are required in regulation or would be stipulated in project permits. For example, the Construction General Stormwater Permit will require a Stormwater Pollution Prevention Plan (SWPPP). Since these are predictable requirements, they are analyzed as part of the proposed action.

Bioaccumulation – Used to describe the increase in concentration of a substance in an organism over time.

Biodiversity – The number and variety of organisms found within a specified geographic region, or the variability among living organisms and the environments to which they belong; including diversity at the genetic, species, population, and ecosystem levels.

Biological Assessment (BA) – An evaluation conducted for federal projects requiring an environmental impact in accordance with the legal requirements under Section 7(e) of the Endangered Species Act, as amended (16 U.S.C. 1536(c)). The purpose of the assessment is to determine whether the proposed action is likely to affect any endangered, threatened, or proposed species or critical habitat.

Biological Opinion – The FWS or NMFS evaluation of the impact of a proposed action on endangered and threatened species, in response to formal consultation under Section 7 of the endangered Species Act.

Carbon monoxide (CO) – One of the six criteria pollutants for which the U.S. EPA established National Ambient Air Quality Standards (NAAQS).

Carbon safety screens – Vibrating screens that ensure coarse carbon loaded with gold remains in the circuit and is not lost to the tailings system.

CIP (carbon-in-pulp) – A method of recovering gold and other precious metals from pregnant cyanide solutions by adsorbing the precious metals onto activated carbon.

Carbon-in-Leach (CIL) – Carbon-in-leach is the process of leaching gold and other precious metals (if present) in agitated tanks in the presence of activated carbon particles. The gold-loaded carbon is then physically separated for further processing to recover the adsorbed gold.

Cetacean – Large aquatic carnivorous mammal with fin-like forelimbs and no hind limbs; includes whales, dolphins, porpoises, and narwhals. Also, of or relating to these animals.

Channel depth – The depth of a channel measured from the bankfull elevation.

Channel gradient – The slope of the stream channel floor with respect to the horizontal, measured in the direction of flow.

Channel width – The width of a river or stream channel measured from one bank to the other at the bankfull elevation.

Clearing – Removal of vegetation above ground level, but with little or no disturbance to the vegetative mat on the ground surface.

Closed circuit – A loop in the milling process wherein a selected portion of the product of a machine is returned to the head of the machine for finishing to required specification. In a closed circuit, only material meeting specification is allowed to exit the loop. A common example would be a grinding mill in closed circuit with hydrocyclones.

Coastal wetlands – Forested and non-forested habitats, mangroves, and marsh islands exposed to tidal activity. These areas directly contribute to the high biological productivity of coastal

waters by input of detritus and nutrients, by providing nursery and feeding areas for shellfish and finfish, and by serving as habitat for birds and other animals.

Coastal zone – The coastal waters (including the lands therein and thereunder) and the adjacent shore lands (including the waters therein and thereunder) strongly influenced by each other and in proximity to the shorelines of the several coastal states; the zone includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches and extends seaward to the outer limit of the United States territorial sea. The zone extends inland from the shorelines only to the extent necessary to control shore lands, the uses of which have a direct and significant impact on the coastal waters. Excluded from the coastal zone are lands the use of which is by law subject to the discretion of or which is held in trust by the Federal Government, its officers, or agents. (The State land and water area officially designated by the State as "coastal zone" in its State coastal zone program as approved by the U.S. Department of Commerce under the Coastal Zone Management Act.)

Connected Action – an action connected in time or geographically to a proposed project, but which may be undertaken by another party. For example, Knik Construction has applied to upgrade the Bethel Yard Dock, and the action is connected to the Donlin Gold Project, although not undertaken by Donlin Gold. The impacts of a connected action must be included in the EIS analysis.

Community – A group of interacting plants and animals inhabiting a given area.

Community types (vegetation) – A group of plants living in a specific region under relatively similar conditions.

Coniferous – Referring to a cone-bearing, usually evergreen, tree.

Contact water – Contact water includes "mine drainage" defined in 40 CFR 440.132(h) as "any water drained, pumped, or siphoned from a mine." It would include runoff and seepage from the waste rock facility, runoff and seepage from ore stockpiles, and water from horizontal drains that accumulate in the open pit.

Continental Shelf – The gently seaward-sloping surface that extends between the shoreline and the top of the continental slope at about 150 meters (345 feet) depth. The average gradient of the shelf is between 1:500 and 1:1,000 and, although it varies greatly, the average width is approximately 70 kilometers (44 miles). This can also be a judicial term; for example, the outer limit of the legal continental shelf is determined by reference to be a distance of 200 nautical miles (370 kilometers, 230 miles) or to the outer edge of the geological continental margin, wherever the margin extends beyond 200 nautical miles (370 kilometers, 230 miles).

Construction emissions – Air pollutants released as a result of construction activities either as exhaust from vehicles and equipment driven by combustion engines, or from the ground disturbance (and releases of particulate matter and fugitive dust).

Contrast Rating Procedure – A BLM method for assessing the visual contract between proposed project components and the existing landscape character. The method addresses visual object characteristics and viewshed limiting factors.

Council on Environmental Quality (CEQ) – An advisory council to the President of the United States established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

Cover type – Generic term for a mapping unit; typically used to reference individual plant communities or unvegetated habitats such as open water, sand, or mud flats.

Critical habitat – Specific areas within the geographical area occupied by the species at the time of listing (under the ESA), if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and specific areas outside the geographical area occupied by the species if the agency (FWS or NMFS) determines that the area itself is essential for conservation.

Criteria pollutants – Air pollutants for which the EPA has established State and National Ambient Air Quality Standards. These include particulate matter ($PM_{2.5}$, PM_{10}), nitrogen oxides (NOx), sulfur dioxide (SO_2), carbon monoxide (CO), and volatile organic compounds (VOCs).

Cross-section – A section formed by a plane cutting through an object, usually at right angles to an axis.

Cryoturbation – The mixing of materials from various horizons of the soil right down to the bedrock due to freezing and thawing.

Crusher (including gyratory and short head cone) – A material size reducing machine that reduces or (crushes) material by compression. The machine consists of a moveable conical member (head) gyrating within an inverted concave cone (bowl). Material is crushed between the moveable head and the bowl. The material is gravity-fed through the crusher. Gyratory crushers reduce rock from the size of a small vehicle to 10 inches. Short head cone crushers reduce rock from two inches to ⅜-inch.

Crustacean – Includes a diversity of marine, freshwater, and terrestrial animals. All crustaceans have a head and five pairs of appendages, two of which are antennae. Many microscopic crustaceans, like krill and brine shrimp, are marine plankton, an important food source for other animals in the sea. Shrimp, lobsters, crabs, crayfish, and barnacles are crustaceans.

Cultural resources –A general term used to describe prehistoric or historic sites, districts, structures, buildings, or objects, inclusive of archeological resources, historic resources, and places of traditional or religious significance. A cultural resource listed in or determined eligible for listing in the National Register is considered a historic property.

Cultural significance – Embodied in those qualities of prehistoric or historic districts, sites, buildings, structures, or objects that meet the National Register Criteria for Evaluation (36 CFR 60.4). The application of these criteria is explained in National Register Bulletin 15, distributed by the National Park Service.

Cultural site – Any location that includes prehistoric and/or historic evidence of human use, or that has important socio-cultural value.

Cumulative effects/impacts – As defined by 40 CFR 1508.7, these are the accumulated impacts on the environment that result from the current action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes other such actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Cyanidation – A chemical reaction that uses diluted cyanide-containing solutions and oxygen to selectively solubilize (leach) gold or other precious metals from the host rock, making these metals available for separation.

Cyanide – A chemical compound of carbon and nitrogen (CN-) used to dissolve gold and other precious metals. Typically, cyanide is delivered dry in the form of sodium cyanide (NaCN) briquettes and is dissolved in water and caustic to make a solution for use.

Cyanide process – That part of the milling process where ore in the form of a slurry is exposed to a weak cyanide solution, which dissolves gold and other precious metals.

Cyclone (hydrocyclone) – A particle sizing device that uses circular motion to generate centrifugal forces greater than the force of gravity. These high forces are used to separate particles by size and specific gravity.

Deciduous – Trees or shrubs that lose their leaves each year during a cold or dry season.

Depleted species – Defined by the MMPA as any case in which: (a) the Secretary of Commerce, after consultation with the Marine Mammal Commission and the Committee of Scientific Advisors on Marine Mammals, determines that a species or population stock is below its optimum sustainable population; (b) a State determines that such species or stock is below its optimum sustainable population; or (c) a species or population stock is listed as a threatened species or endangered species under the ESA.

Design features – Impact-reducing actions or designs that Donlin Gold has committed to in their permit applications and supporting documents. These are analyzed as part of the proposed action. If during the NEPA process the proposed action is required to be changed, some aspects of those required changes may become design features.

Development – Activities that take place following discovery of economically recoverable mineral resources including geophysical surveying, drilling, platform construction, operation of onshore support facilities, and other activities that are for the purpose of ultimately producing the resources.

Discharge – Something that is emitted; flow rate of a fluid at a given instant expressed as volume per unit of time.

Dispersant – A suite of chemicals and solvents used to break up an oil slick into small droplets, which increases the surface area of the oil and hastens the processes of weathering and microbial degradation.

Distribution – The natural geographic range of an organism.

Disturbance – A natural or human-induced disruption or alteration of an ecosystem. Forest fires, tornadoes, and rock slides are examples of natural disturbances; logging, acid rain, and road-building are examples of human-induced disturbances.

Doré – A metal alloy composed of gold and other precious metals. Typically the final product from a precious metals mine.

Easement – An encumbrance or limitation on the ownership title to a parcel of land, reserving certain use rights for specified purposes.

Ecoregion – Geographic areas of relative homogeneity in ecological systems or in relationships between organisms and their environment.

Ecosystem – A dynamic complex of biotic (plant, animal, fungal, and microorganism) communities and their associated abiotic (non-living) environment interacting as a functioning unit. An interacting system of organisms considered together with their environment (e.g., marsh, watershed, and stream ecosystems).

Effluent – A waste product that is discharged to the environment, usually used to mean treated wastewater discharged from a wastewater treatment plant, sewer, or industrial outfall.

Effluent limitations – Any restriction established by a State or the USEPA on quantities, rates, and concentrations of chemical, physical, biological, and other constituents discharged from point sources into U.S. waters, including schedules of compliance.

Electrowinning – The electrolytic process of capturing dissolved gold onto a negatively charged cathode. Materials commonly used as cathodes include steel wool and stainless steel sheets.

Emission – Air pollution discharge into the atmosphere, usually specified by mass per unit time. In the analysis of air quality, emissions have been subdivided into three types: operating emissions, construction emissions, and fugitive dust emissions.

Eradication – The complete elimination of a population and its progeny.

Endangered species – Defined under the ESA as “any species which is in danger of extinction throughout all or a significant portion of its range.”

Environmental effect – A measurable alteration or change in environmental conditions.

Environmental Impact Statement (EIS) – A statement required by the National Environmental Policy Act of 1969 (NEPA) or similar State law in relation to any major action significantly affecting the environment; a NEPA document.

Environmental Justice – Executive Order 12898 (February 11, 1994) requires that federal agencies identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

Erosion – Detachment or movement of soil or rock fragments by water, wind, ice, gravity, or human-induced activities.

Essential Fish Habitat (EFH) – Defined under the Magnuson-Stevens Fishery Conservation and Management Act as waters and substrate that are necessary to the fish species for spawning, breeding, feeding, or growth to maturity.

Estuary – Coastal semi-enclosed body of water that has a free connection with the open sea and where freshwater meets and mixes with seawater.

Eutrophication – The process whereby an aquatic environment becomes rich in dissolved nutrients, causing excessive growth and decomposition of oxygen-depleting plant life and resulting in injury or death to other organisms.

Evapotranspiration – The sum of evaporation and plant transpiration from the earth's land surface to atmosphere.

Exploration – The process of searching for minerals. Exploration activities include: 1) geophysical surveys where magnetic, gravity, seismic, or other systems are used to detect or infer the presence of such minerals; and 2) any drilling, except development drilling, whether on or off known geological structures. Exploration also includes the drilling of a well in which a discovery of oil or natural gas in paying quantities is made, and the drilling, after such a discovery, of any additional well that is needed to delineate a reservoir and to enable the lessee to determine whether to proceed with development and production.

Fault – A fracture in the earth’s crust accompanied by a displacement of one side of the fracture with respect to the other.

Feasible – Capable of being done or carried out; can be accomplished with the technology available.

Fill – The material used in construction of facilities.

Flotation – Flotation is the process of using minute amounts of chemicals, separating sulfide minerals from ore by inducing them to gather in and on the surface of a froth layer within a flotation cell. This process recovers the sulfide minerals containing the gold, which are then skimmed off the top of the flotation cells. Spent ore (tailings) is sent to a tailing storage facility.

Fluvial – Of or relating to or happening in a river.

Flux – Substances such as silica, borax, soda ash, etc. used in the refinery to upgrade the gold by reacting at high temperatures with undesirable materials to form slag. Fluxes are liquid at furnace temperatures and are light enough in density to float on top of the molten metal.

Flyway – An established air route of migratory birds.

Footprint – The ground area to be disturbed or covered by a new facility or activity.

Forb – A broad-leaved flowering plant.

Formation – A bed or deposit sufficiently homogeneous to be distinctive as a unit. Each different formation is given a name, frequently as a result of the study of the formation outcrop at the surface and sometimes based on fossils found in the formation.

Fugitive emissions – Emission into the atmosphere that cannot reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

Geochemical – Of or relating to the science dealing with the chemical composition of and the actual or possible chemical changes in the crust of the earth.

Geologic hazard – A feature or condition that, if unmitigated, may seriously jeopardize offshore oil and gas exploration and development activities. Mitigation may necessitate special engineering procedures or relocation of a well.

Geomorphology – The study of the physical features of the surface of the earth and their relation to its geological structures.

Geophysical – Of or relating to the physics of the earth, especially the measurement and interpretation of geophysical properties of the rocks in an area.

Geophysical data – Facts, statistics, or samples that have not been analyzed or processed pertaining to gravity, magnetic, seismic, or other surveys/systems.

Geophysical survey – A method of exploration in which geophysical properties and relationships are measured remotely by one or more geophysical methods.

Governance capacity – The skill and ability of local leaders in tribes, municipalities, and regional service organizations to anticipate, plan, and respond to changes on behalf of community residents.

Gravity circuit (or gravity gold recovery circuit, or gravity concentration circuit) – A circuit that uses any of several types of devices to separate gold from the other materials based on specific gravity.

Greenhouse gas (GHG) – A gas that contributes to the greenhouse effect by absorbing infrared radiation, e.g., carbon dioxide and chlorofluorocarbons.

Groundwater – All subsurface water, especially water that is distinct from the surface water portion in the zone of saturation.

Grub the pit – Dig or poke superficially at the earth; dig shallowly in soil.

Habitat – The area or environment where an organism normally occurs.

Habitat modification – Any change in habitat that alters its structure or plant species composition in a way that affects whether a species or group of species will continue to use it.

Habitat type – The aggregate of all areas that support or can support the same primary vegetation at climax.

Harassment – Under the 1994 amendments to the MMPA, harassment is statutorily defined as any act of pursuit, torment, or annoyance which: has the potential to injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering, but which does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B Harassment).

Hazing – A means of wildlife hazard management in which individual animals or groups of animals are harassed or frightened away from the airfield through the use of pyrotechnics (e.g., propane canons, cracker shells), taped bird distress calls, or other non-lethal approaches.

Health Effects Categories – Characteristics of human health that may be affected by a proposed project, including examples such as social determinants of health (income, employment, education); accidents and injuries; exposure to potentially hazardous materials; and food, nutrition, and subsistence activity.

Health Impact Assessment – A set of terms, concepts, and methods to inventory current health status factors, and to analyze likely changes due to a proposed project. The Alaska Department of Health and Social Services has published technical guidance for HIA analyses in Alaska.

Herbaceous – The plant strata which contain soft, not woody, stemmed plants that die to the ground in winter.

Historic properties – any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register, including artifacts, records, and material remains relating to the district, site, building, structure, or object.

Horizontal directional drilling (HDD) – A steerable trenchless method of installing underground pipes, conduits, and cables in a shallow arc along a prescribed bore path by using a surface-launched drilling rig, with minimal impact on the surrounding area.

Hydrocarbons – Any of a large class of organic compounds containing primarily carbon and hydrogen. Hydrocarbon compounds are divided into two broad classes: aromatic and aliphatics. They occur primarily in petroleum, natural gas, coal, and bitumens.

Hydrology – The science that describes the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

Impacts – A modification of the existing environment caused by an action or alternative actions (such as construction or operation of facilities). Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance but which are still reasonably foreseeable.

Incidental take – Takings that result from, but are not the purpose of, carrying out an otherwise lawful activity (e.g., fishing) conducted by a Federal agency or applicant (see Taking).

INCO SO_2/Air process – A patented process that, after adjustment of pH and addition of a copper catalyst, uses sulfur dioxide and air to chemically change cyanide to cyanate. The cyanate is not stable and changes into carbonate and ammonium ions. The carbonate ion, which is essentially dissolved carbon dioxide, precipitates as calcium carbonate. The ammonium ion is converted to ammonia and nitrates.

Indigenous – Originating where it is found; refers to species or peoples found locally and from the local area.

Indigenous designations (Yup'ik, Deg Hit'an, Dena'ina, etc.) – Linguistic, cultural, and tribal affiliations of Alaska Native residents of a region.

Indirect economic impacts – Changes in income, employment, and tax revenues to all industries and governments within a specific area caused by changes in business spending by industries receiving a direct economic impact from a specific project in that area.

Indirect effects – Effects caused by activities that are stimulated by an action but not directly related to it.

Industry infrastructure – The facilities associated with oil and gas development, e.g., refineries, gas processing plants, etc.

Intertidal – The zone between the high and low water marks.

Invasive species – An introduced, non-native species that competes with desirable native species.

Invertebrate – An animal without a backbone or spinal column, such as an insect.

Key Observation Point (KOP) – Selected locations or vantage points for documentation of landscape characteristics. The KOPs represented several landscape analysis factors including distance from the project, viewer exposure (transient, stationary, or prolonged), predominant angle of observation, dominant use (i.e., recreation or travel), and average travel speed at which the project could be viewed.

Land with Wilderness Characteristics (LWC) – A BLM designation of BLM-managed lands based on characteristics of size, naturalness, and outstanding opportunities for solitude or primitive and unconfined type of recreation. BLM-managed LWC lands are not Congressionally-designated wilderness in the meaning of the Wilderness Act.

Land management plan – A formal plan governing management of lands managed by an agency, typically based on an assessment of land characteristics and stakeholder input. Land use plans identify policies for permitted and prohibited uses of lands. Examples include the BLM Ring of Fire Resource Management Plan, the FWS Comprehensive Conservation Plan for the Yukon Delta National Wildlife Refuge, and the State of Alaska Kuskokwim Area Plan.

Land Status – Refers to the ownership and management of parcels or areas of land. In the EIS, the analysis distinguishes federal, state, and private (Alaska Native Corporation) ownership and management.

Laydown area – Uncovered gravel pad for storage of equipment and supplies.

Least environmentally damaging practicable alternative (LEDPA) – An applicant for a Section 404 permit under the Clean Water Act must demonstrate to the U.S. Army Corps of Engineers that, among other things, the proposed project is the least environmentally damaging practicable alternative to achieve the project's purpose.

Liquefaction – Conversion of soil into a fluid-like mass during an earthquake or other seismic event.

Local and regional transportation systems – Includes ports, barge landings, airports, local roads, and trails. These are also categorized as air, water, and surface transportation systems.

Low income community – A community or group with a median household income at or below federal poverty guidelines.

Maintenance pigging – Sending a pig to clear debris from the pipeline.

Mean sea level – The average height of the surface of the sea for all stages of the tide; used as a reference for elevations.

Migratory bird – Any mutation or hybrid of a listed species, as well as any part, egg, or nest of such bird; protected under the Migratory Bird Treaty Act.

Mill (or plant) – 1) A processing facility in which ore is treated for the recovery of valuable metals (gold). 2) A piece of milling equipment consisting of a revolving cylinder for the fine grinding of ores as a preparation for leaching. See "SAG mill" and "ball mill."

Milling – The process of separating the valuable constituents (gold) from the non-economic constituents (which after milling are called tailings). Milling typically consists of crushing and grinding to liberate or free the gold, which is then recovered through a leach or gravity circuit.

Minerals – As used in this document, minerals include oil, gas, sulphur, and associated resources, and all other minerals authorized by an Act of Congress to be produced from public lands as defined in Section 103 of the Federal Land Policy and Management Act of 1976.

Mining – The process of removing the ore from the ground and transporting it to the mill. At Donlin this includes drilling, blasting, loading into trucks, and hauling to a primary crusher.

Minimize – To reduce the adverse impact of an operation or development to the lowest practical level.

Minority community – As used in the Environmental Justice analysis, a minority community is one with a majority of individuals who identify themselves as American Indian, Alaska Native, Asian or Pacific Islander, African American, or Hispanic (of any race).

Mitigation – Avoiding, minimizing, rectifying, or reducing impacts.

Mitigation measures – Measures agencies consider that would further reduce impacts. These are not considered part of the proposed action, and may take the form of permit conditions.

Mollusk – An invertebrate having a soft unsegmented body, usually enclosed in a shell. Also a group of freshwater and saltwater animals, including oysters, clams, mussels, snails, conches, scallops, squid, and octopus.

Monitor – To systematically and repeatedly watch, observe, or measure environmental conditions in order to track changes.

Monitoring and Adaptive Management – Through monitoring, appropriate data are collected to assess predicted project impacts and the effectiveness of mitigation after initial and ongoing implementation. Mitigation that is not proving effective can be adapted.

Multiplier effects – A project employs workers, pays wages, and purchases equipment and supplies. When employees take their wages and pay rent, buy homes, purchase food and goods at stores, the wages now multiply out in additional economic activity. Similarly, when equipment suppliers make sales to the project, they pay wages, order new supplies, etc. Together these secondary economic activities are referred to as multiplier effects.

National Ambient Air Quality Standards (NAAQS) – The allowable concentrations of pollutants in the air specified by the federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare from any unknown or expected adverse effects of air pollutants).

National Environmental Policy Act of 1969 (NEPA) – The original legislation establishing the environmental review process for proposed federal actions. An act that encourages productive and enjoyable harmony between humans and the environment and promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate human health and welfare; enriches the understanding or the ecological systems and natural resources important to the nation, and establishes the Council on Environmental Quality. It is the national charter for protection of the environment. NEPA establishes policy, sets goals, and provides means for carrying out the policy. Regulations at 40 CFR 1500-1508 implement the Act.

National Register of Historic Places (NRHP) – A list, maintained by the National Park Service, of areas that have been designated as being of historical significance. Historic properties are any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register, including artifacts, records, and material remains relating to the district, site, building, structure, or object.

Native species – Plants that originated in the area in which they are found, i.e., they naturally occur in that area.

Nitrogen dioxide (NO_2) – One of the six criteria pollutants for which the U.S. EPA established National Ambient Air Quality Standards (NAAQS).

Non-putrescible – Material that would not rot.

Offshore – In beach terminology, the comparatively flat zone of variable width, extending from the shore to the edge of the continental shelf. It is continually submerged. Also, the term includes the breaker zone directly seaward of the low tide line.

Operational discharge – Any incidental pumping, pouring, emitting, emptying, or dumping of wastes generated during routine offshore drilling and production activities.

Overburden – The material that lies above an area of economic or scientific interest. Overburden is also described as the soil and other material that lies above a specific geologic feature.

Overflow – That portion of a slurry that exits a hydrocyclone through the top and contains the smaller, less dense particles in the slurry.

Oversize – Particles that are too large to pass through a particular screen.

Ozone (O_3) – A molecule containing three oxygen atoms that forms when ultraviolet light or an electric spark passes through oxygen (O_2). Ozone is naturally occurring in the upper atmosphere where it shields the Earth from ultraviolet radiation. Near ground level, ozone is considered a harmful pollutant and is one of the six criteria pollutants for which the U.S. EPA established National Ambient Air Quality Standards (NAAQS).

Particulate matter (PM) – A particle of soil or liquid matter (e.g., soot, dust, aerosols, fumes and mist). Particulate matter is one of the criteria pollutants for which the U.S. EPA established National Ambient Air Quality Standards (NAAQS). Particulate matter is defined as two categories: fine particulates, with an aerodynamic diameter of 10 micrometers or less (PM_{10}), and fine particulates with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$).

Pelagic – Relating to, or living, or occurring in the open sea.

Permafrost – A thick subsurface layer of soil that remains frozen throughout the year, occurring chiefly in polar regions.

Permeability – The capacity of a soil or groundwater aquifer to transmit water.

Permeable – The property or capacity of a porous rock, sediment, or soil to transmit a liquid.

Pesticide – A chemical or biological agent intended to prevent, destroy, repel, or mitigate plant or animal life and any substance intended for use as a plant regulator, defoliant, or desiccant, including insecticides, fungicides, rodenticides, herbicides, nematocides, and biocides.

pH – The negative log10 of the hydrogen ion activity in solution; a measure of acidity or basicity of a solution.

Photosimulations – Photographic simulations can be prepared for various vantage points to support the visual resource impact analysis, and disclose expected visibility of project components from various vantage points. Simulations were produced by rendering project components using 3D computer models, and super-imposing these images onto photographs taken at KOPs.

Pig – A mechanical tool used to clean and/or inspect the interior of a pipeline.

Pig launcher – A facility on a pipeline for inserting and launching a pig.

Pig receiver – A piping arrangement whereby an incoming pig can be diverted into a receiving cylinder, isolated, and then removed.

Pinniped – Aquatic carnivorous mammals having a streamlined body specialized for swimming with limbs modified as flippers, for example, seals.

Pool – A location in an active stream channel, usually on the outside bends of meanders, where the water is deepest and has reduced current velocities.

Population – Within a species, a distinct group of individuals that tend to mate only with members of the group. Because of generations of inbreeding, members of a population tend to have similar genetic characteristics.

Potential impact (effect) – The range of alterations or changes to environmental conditions that could be caused by an action.

Pregnant solution – Water containing dissolved precious metals resulting from the leaching process.

Prehistoric lithic scatter – A location containing the remains of stone tool manufacturing activities, characterized by flaked stone tools and waste flakes left behind from the flaking process used to manufacture these tools.

Pressure oxidation (POX) – Pressure oxidation is a process for pre-treating ore using elevated temperatures, pressures, and oxygen to oxidize sulfide materials to expose the valuable minerals encapsulated within the sulfides.

Production – Activities that take place after the successful completion of any means for the extraction of resources, including bringing the resource to the surface, transferring the produced resource to shore, monitoring operations, and drilling additional wells or workovers.

Programmatic Agreement (PA) – An agreement document prepared in compliance with Section 106 regulations in instances where an undertaking will or may adversely affect historic properties. The PA sets out the measures the federal agency, in consultation with the State and/or Tribal Historic Preservation Officer (SHPO, THPO) and other parties, will implement to resolve those adverse effects through avoidance, minimization, or mitigation.

Promulgated – Formally made public; published accounts.

Propagule – Seeds or vegetative plant parts (e.g., roots, shoots, buds) which are easily transported and capable of growing into a mature plant, thus allowing a plant species to spread to and colonize an area in which it did not previously occur.

Pulp – A suspension of pulverized or ground ore in water. The ore is kept in suspension by agitation and flow of the water.

R.S. 2477 – Section 8 of the 1866 Mining Act states, "the right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted." In 1873, the provision was separated from the Mining Act and reenacted as R.S. 2477. Amended many times, this authority was repealed in 1976, but all R.S. 2477 easements that existed on the date of the repeal were preserved. The State of Alaska recognizes approximately 650 R.S. 2477 routes throughout the state (Alaska Statute 19.30.400). The BLM will not process or review R.S. 2477 claims, pending further direction from the Secretary of the Interior.

Raft-type foundation – A foundation (usually on soft ground) consisting of an extended layer of reinforced concrete.

Rearing habitat – The river or stream areas where juvenile salmonids must find food and shelter to survive for a period of time.

Reclamation – The process of restoring disturbed areas in general using any of several methods: recontouring, spreading topsoil or growth medium, seeding, and planting, among others.

Reclaimed – The ROW is reclaimed or restored after ditch backfill. Reclamation consists of re-grading the earth to stable contours, placing erosion control devices (ECDs) where needed to stabilize the earthworks and/or to contain erosion, and reseeding the earth.

Recontouring – Restoration of the natural topographic contours by reclamation measures, particularly in reference to roads.

Record of Decision (ROD) – A decision document for an environmental impact statement or supplemental EIS that publicly and officially discloses the responsible official's decision regarding the actions proposed in the environmental impact statement and their implementation.

Recreation setting – The physical, social, and operational qualities and conditions of the space in which recreation occurs. Physical qualities may include the presence or absence of sound, types of plants and animals, and availability of recreational facilities. Social qualities may include the number of recreationists in the area and evidence of use. Operational qualities may include the degree of recreation management and recreation use restriction.

Refinery – That part of the mill in which gold is purified by being melted with fluxes in a furnace and is then poured into doré bars for shipment.

Refining – Plated gold is transferred to a separate area and treated by melting the gold, silver, and any other precious metals. In this process, impurities are removed.

Refractory – A term used to indicate a difficult-to-treat ore that requires some form of pre-treatment to liberate gold or other precious metals before the ore can be further processed to recover them.

Reject circuit (or pebble reject) – That part of the mill that allows screen oversize to be rejected from the grinding circuit if the gold content of this harder material is non-economic.

Resident fisheries – Non-migrating fish.

Restoration - Refers to restoration of wetlands such as re-establishment of wetland vegetation and wetland hydrology.

Riffle – A shallow rapids, usually located at the cross-over in a meander of the active channel.

Right-of-way (ROW) – A legal right of passage, an easement over land owned by another; the specific area or route for which permission has been granted to place a pipeline, (and) ancillary facilities, and for normal maintenance thereafter.

Rookery – The nesting or breeding grounds of gregarious (i.e., social) birds or mammals; also a colony of such birds or mammals.

Riparian – Of or relating to or located on the banks of a river or stream.

Rock – Uneconomic rock with no mineral value that must be removed to allow access to the ore. Some rock is used as fill in construction of roads, dams, and other mine facilities.

Royalty – A share of the minerals produced from a lease paid in either money or "in-kind" to the landowner by the lessee. Calista Corporation would receive royalties from Donln Gold for the gold extracted at the proposed Donlin Gold Project.

Runoff – That part of precipitation that appears in surface streams. Precipitation that is not retained on the site where it falls and is not absorbed by the soil.

Rural subsistence priority – Title VIII of the Alaska National Interest Lands Conversation Act (ANILCA) (1980) defines subsistence, sets a priority for subsistence by rural residents on federal lands and associated waters, and establishes a system for participation by rural residents through Regional Advisory Councils.

Semi-autogenous grinding (SAG) mill – A large rotating cylinder that uses the ore itself as a grinding medium and supplements this with steel balls, as required, to obtain the proper size grind.

Sales – In the analysis of economic activity in Section 3.18, Socioeconomics, sales refers to the potential purchases by Donlin Gold of equipment (such as barges, tanker trucks, electrical generators, hauling trucks), materials (such as steel pipe), supplies (such as natural gas, diesel fuel, and chemicals needed for the milling process), and services (such as construction contractors, and barge transportation contractors).

Salmonid – Any fish belonging to the family Salmonidae, which includes salmon, trout, char, grayling, and whitefish.

Salmonid spawning areas – Waters that provide or could provide a habitat for active, self-propagating populations of salmonid fishes.

Salmonidae – The family of ray-finned fish that includes salmon and trout.

Scenic Quality Rating unit (SQRU) – Refers to a system for assessing scenic quality by ranking seven key factors: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification. Three classes are recognized ranging from Class A, with outstanding characteristics for each rating factor, to Class C in which features are fairly common the region.

Scoping – Procedures by which agencies determine the extent of analysis necessary for a proposed action (i.e., the range of actions, alternatives, and impacts to be addressed; identification of significant issues related to a proposed action; and the depth of environmental analysis, data, and task assignments needed). The process of identifying the range of issues, management concerns, preliminary alternatives, and other components of an environmental impact statement or land-use planning document. It involves both interagency and public viewpoints.

Section 106 of the National Historic Preservation Act (Section 106) – Governs the identification, evaluation, and protection of historical and archeological resources affected by state and federal transportation projects. Principal areas identified include required evaluations to determine the presence or absence of the site, the eligibility based on National Register of Historic Places criteria, and the significance and effect of a proposed project upon such a site. Compliance with Section 106 requires that any project funded, licensed, permitted, or assisted by the federal government be reviewed for impacts to significant historic properties and that the State Historic Preservation Officer and the Advisory Council on Historic Preservation be allowed to comment on the project. Requires all Federal agencies to take into account the effects of their actions on historic properties, and provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment on those actions and the manner in which federal agencies are taking historic properties into account in their decisions.

Section 401 of the Clean Water Act (Section 401) – The State Water Quality Certification program requires that states certify compliance of federal permits or licenses with state water quality requirements and other applicable state laws. Under Section 401, states have authority to review any federal permit or license that may result in a discharge to wetlands and other waters under state jurisdiction, to ensure that the actions would be consistent with the state's water quality requirements.

Section 404 of the Clean Water Act (Section 404) – Authorizes the U.S. Army Corps of Engineers to issue permits regulating the discharge of dredged or fill material into the waters of the United States, including wetlands.

Section 7 consultation – The requirement of Section 7 of the Endangered Species Act that all federal agencies consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service if a proposed action might affect a federally listed species or its critical habitat.

Seismic – Pertaining to, characteristic of, or produced by water, earthquakes or earth vibration; having to do with elastic waves in the earth; also geophysical when applied to surveys.

Sediment – Material that has been transported and deposited by water, wind, glacier, precipitation, or gravity; a mass of deposited material.

Sequestered – The capture of carbon dioxide, such as within trees during photosynthesis.

Shoofly Road – Access road to the pipeline construction ROW, or along the ROW to provide continuous access where the ROW is too steep for pipe stringing trucks and personnel carriers.

Significant – As used in NEPA, determination of significance requires consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts, such as society as a whole, and the affected region, interests, and locality. Intensity refers to the severity of impacts (40 CFR 1508.27). An effect that is analyzed in the context of the proposed action to determine the degree or magnitude of importance of the effect, whether beneficial or adverse. The degree of significance can be related to other actions with individually insignificant but cumulatively significant impacts.

Slope breaker or Ditch Plug – On hillsides and inclined slopes, the placement of sand bags or spraying of foam to surround the pipe, as a ditch plug or dam, to the top of the ditch, to prevent water flow and subsequent erosion around the pipe. Conventionally placed in sloped riches but also used in flat permafrost terrain and on either side of streams or river crossings.

Slurry – Same as "pulp."

Socio-cultural impacts to subsistence – Effects on subsistence activities from changes in populations and cultural (or ethnic) composition of a community, employment and income, enclave workplaces and commuting, and rotational work schedules.

Socioeconomics – Refers to the analysis of population characteristics in the affected communities as well as economic activity. Population characteristics include size, ethnic composition, and educational achievement, as examples. Economic activity includes employment and income, unemployment rates, and key sectors of the economy, including the government sector.

Spread – A unit of equipment and personnel required to construct a pipeline. Also refers to the complete geographical segment assigned to one contractor which may be constructed over multiple seasons or years.

Species of Special Concern – A native species whose population is low and limited in distribution or which has suffered significant reductions because of habitat loss.

Species – Organisms that successfully reproduce among themselves and cannot reproduce successfully with other organisms.

State Historic Preservation Officers (SHPOs) – Administer the National Historic Preservation Program at the state level, review National Register of Historic Places nominations, maintain

data on historic properties that have been identified but not yet nominated, and consult with federal agencies during Section 106 review. SHPOs are designated by the governor of their respective state or territory.

Stranding – Defined under the MMPA as "an event in the wild in which A) a marine mammal is dead and is i) on a beach or shore of the United States; or ii) in waters under the jurisdiction of the United States (including any navigable waters); or B) a marine mammal is alive and is i) on a beach or shore of the United States and is unable to return to the water; ii) on a beach or shore of the United States and, although able to return to the water, is in need of apparent medical attention; or iii) in the waters under the jurisdiction of the United States (including any navigable waters), but is unable to return to its natural habitat under its own power or without assistance."

Strip (or stripping) – A high temperature and pressure process in which gold is removed from loaded carbon and placed back into solution.

Strip vessel (or stripping vessel) – An enclosed tank capable of holding solutions under elevated temperatures and pressures in which gold is removed from loaded carbon.

Sub-aerial deposition – Discharge of tailings slurry onto land as opposed to under water. A beach deposit is formed, allowing water to drain from the tailings and the tailings to densify more than when they are deposited sub-aqueously. Water is collected in a pool and reused in the mill. Typically used during summer.

Sub-aqueous deposition – Discharge of tailings under water in the tailings impoundment. Solids in the tailings slurry settle in the impoundment, and the water is reused in the mill. Typically used during winter to minimize ice formation.

Subnivean – Below the snow layer.

Subsistence subregions – Neighboring communities that often share a common ecology, a common language, and some common harvest patterns. The description of community harvest patterns in Section 3.21, Subsistence, focuses on nine subsistence subregions.

Subsistence uses – The customary and traditional uses by rural residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for making and selling of handicraft articles out of inedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.

Substrate – A surface on which an organism grows or is attached.

Subsurface title – The ownership of the subsurface of a parcel of land including such resources as minerals, like gold. ANCSA divided the ownership of Alaska Native Corporation lands, and the subsurface title generally goes to regional corporations, e.g. Calista and CIRI.

Sulfur dioxide (SO_2) – One of the six criteria pollutants for which the U.S. EPA established National Ambient Air Quality Standards (NAAQS).

Surface title – The ownership of the surface of a parcel of land including resources, such as timber. ANCSA divided the ownership of Alaska Native Corporation lands, and the surface title generally goes to village corporations, e.g. The Kuskokwim Corporation.

Surficial soils – Soils that are at or near the surface.

Sustainability – The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

Take – In the Marine Mammal Protection Act (MMPA), meaning "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." In the Endangered Species Act, the definition includes to harass, harm, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. A notable component of this definition is "harm," which means an act that actually kills or injures protected wildlife. Such acts may include significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering.

Tailings – A slurry of ground ore in water that is discharged from the mill after the gold has been extracted from it, the cyanide has been detoxified, and the pH has been neutralized.

Thermokarst – A land surface that forms as ice-rich permafrost thaws; it occurs extensively in arctic areas.

Thickening – The partial separation of solids from liquid in a slurry by means of settling in a large tank. Typically, flocculants are added as a settling aid. Clarified water overflows from the top of the tank, and the thicker slurry exits from the bottom of the tank.

Threatened species – Defined under the Endangered Species Act as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

Toe – The bottom of a fill, such as a road embankment or dam.

Topsoil – The upper, outermost layer of soil, usually the top 2 inches (5.1 cm) to 8 inches (20 cm). It has the highest concentration of organic matter and microorganisms.

Tradition – The handing down of information, beliefs, and customs by word of mouth or by example from one generation to another without written instruction.

Traditional Cultural Property (TCP) – A place that is "eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that a) are rooted in that community's history, and b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1992). TCPs often represent the location where significant traditional events, activities, or cultural observances have taken place in the past, yet remain active in the community's or tribe's cultural practices.

Traditional Ecological Knowledge (TEK) – "A cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural

transmission, about the relationship of living beings (including humans) with one another and their environments" (Berkes 1999).

Traditional Use Area – The geographic range of subsistence hunting, fishing, and gathering activities by a community, reflecting use over generations. Indigenous communities have developed a complex web of traditional place names, marking historic and ecological features and allowing members to navigate and communicate with precision about their travel across their homeland. A community's use area is typically recognized by neighboring communities, though there is also overlap of recognized areas in many instances.

Trash screen – A screen used to remove trash (such as plastic, wood, steel, etc.) from the slurry prior to leaching.

Trophic – Trophic levels refer to the hierarchy of organisms from photosynthetic plants to carnivores, such as man; feeding trophic levels refer to the hierarchy of organisms from photosynthetic plants to carnivores in which organisms at one level are fed upon by those at the next higher level (e.g., phytoplankton eaten by zooplankton eaten by fish).

Turbidity – The cloudiness or haziness of a fluid caused by large numbers of individual particles that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality.

Underflow – That portion of a slurry that exits a hydrocyclone through the bottom and contains the larger, denser particles in the slurry.

Undersize – Particles that pass through a particular screen.

Unemployment rate – The portion of the working age population that is seeking work, but unable to find employment.

Vegetation – All of the plants growing in and characterizing a specific area or region; the combination of different plant communities found there.

Viewshed – The panorama from a given viewpoint that encompasses the visual landscape, including everything visible within a 360° radius.

Viewshed Analysis – A GIS-based tool to identify locations where a project feature could potentially be visible. It indicates areas where visual resources could be affected by that project component.

Visual Management System (VMS) – Provides a method for setting measurable objectives for the management of the visual resource. It provides standards for inventorying the visual resource and documenting changes in the landscape.

Visual Quality Objective (VQO) – A desired level of excellence in visual appeal based on physical and sociological characteristics of an area. Refers to the degree of acceptable alteration to the characteristic landscape.

Visual resource – The composite of basic terrain, geologic features, water features, vegetation patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for viewers. The visible physical features of a landscape (topography, water, vegetation, animals, structures, and other features) that constitute the scenery of an area.

Visual Resource Inventory (VRI) – A process to determine scenic quality, visual sensitivity, and distance zones. VRI data is the basis for the Visual Resource Management System, which assigns one of four visual resource management classes to BLM-administered lands.

Visual Resource Management System – A policy for managing visual resources (or visual values) on BLM-administered lands by classifying all BLM-administered lands into one of four visual resource management classes. The VRM system does not apply on non-BLM-managed lands. The classifications range from preserving the landscape character (Class I) to allowing major modification (Class IV).

Volatile organic compounds (VOCs) – A group of organic (carbon-based) chemicals that are readily converted to gaseous form at relatively low temperatures. While VOCs are not a criteria air pollutant (NAAQS), they are a precursor to ozone.

Water quality (parameters) – A set of chemical, physical, or biological characteristics that describe the condition of a river, stream, or lake. The quality of water determines which beneficial uses it can support. Different instream conditions or levels of water quality are needed to support different beneficial uses.

Water table – The level of the groundwater, or the level below which the rocks are saturated with water. During dry weather the water table will sink, and during wet weather it will rise nearer to the surface.

Waters of the U.S. – Refers to a definition that delimits the waters subject to provisions of federal laws and regulations, particularly in the U.S. Army Corps of Engineers' implementation of the Clean Water Act. The term includes the following elements

1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters:
    i. That are or could be used by interstate or foreign travelers for recreational or other purposes; or
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. That are used or could be used for industrial purposes by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in 1 through 4 above;
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in 1 through 6 above.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m), which also meet the criteria of this definition) are not waters of the United States.

Watershed – All lands enclosed by a continuous hydrologic drainage that divide and lay upslope from a specified point on a stream. All of the land that drains surface water to a given stream above a designated point (usually its mouth); also called a stream drainage or drainage basin.

Wetlands – Areas that are inundated by surface or groundwater with a frequency sufficient to support (and under normal circumstances, do support or would support) a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wetland type – The classification of project area wetlands, based on the Cowardin wetland classification system, which places wetlands in one of four wetland systems: lacustrine, riverine, palustrine, or estuarine. These systems are further subdivided into subsystems, classes, and subclasses (e.g., for PEM1 wetlands: system = palustrine [P]; class = emergent [EM]; subclass = persistent vegetation structure [1]).

Work index – A measure of ore hardness used in sizing crushers, SAG mills, and ball mills.

Zero Discharge – The standard of performance that requires the containment of all process fluids for protection of surface waters.