

8.0 REFERENCES AND RESOURCES

8.1 ACRONYMS

ACHP	Advisory Council on Historic Preservation
Amsl	Above Mean Sea Level
ARB	California Air Resources Board
ASC	Anthropological Studies Center of Sonoma State University
Bgs	Below Ground Surface
BLM	Bureau of Land Management
BMPS	Best Management Practices
C	Chemical concentration in $\mu\text{g}/\text{m}^3$
CAGS	California Geological Survey
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer's Association
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEG	California Certified Engineering Geologist
CEPA	California Environmental Protection Agency
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHHSLs	California Human Health Screening Levels
CHP	California Highway Patrol
City	City of Grass Valley
CIWMB	California Integrated Waste Management Board
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
COC	Constituents of Concern
County	Nevada County
CPUC	California Public Utilities Commission
CRGE	California Registered Geotechnical Engineer
CRHP	California Register of Historical Resources
CRLF	California Red Legged Frog

8.0 References and Resources

CSM	Conceptual Site Model
CTR	California Toxic Rule
CVC	California Vehicle Code
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationship database
dB	Decibel
DDT	Dichlorodiphenyltrichloroethane
DGR	Data Gap Report
Dbh	Diameter Breast Height (4.5 above groundlevel)
DLRP	California Department of Conservation, Division of Land Resource Protection
DODS	Division of Dam Safety
DOTS	Nevada County Department of Transportation and Sanitation
DPM	Diesel Particulate Matter
DPR	California Department of Parks and Recreation
Draft PEIR	Draft Program Environmental Impact Report
DTER	Data Transmittal and Evaluation Report
DTSC	California Department of Toxic Substance Control
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FMBTA	Federal Migratory Bird Treaty Act
GCL	Geosynthetic Clay Liner
GHG	Green House Gases
GPM	Gallons Per Minute
GPS	Global Positioning System
GVFD	Grass Valley Fire Department
GVPD	Grass Valley Police Department
HERD	Human and Ecological Risk Division
H&SC	Health and Safety Code
HCP	Habitat Conservation Plan
HFCs	Hydrofluorocarbons
HHS	Department of Human and Health Services
HI	Hazard index
HMTA	Hazardous Materials Transportation Act
HPD	Historic Properties Directory
HSAA	Hazardous Substance Account Act
HWCA	Hazardous Waste Control Act
Hz	Hertz
IBC	International Building Code
IEPR	Integrated Energy Policy Report
IP	Implementation Plan

ISWPPP Joint Order	Industrial Stormwater Pollution Prevention Plan Joint Cleanup and Abatement Order, Imminent and/or Substantial Endangerment Determination and Partial Consent Order
LDL	Larson Davis Laboratories
L _{dn}	Day/Night Average Sound Level
LEA	Lifetime exposure adjustment
LECR	Lifetime excess cancer risk
L _{eq}	Equivalent or energy-averaged sound level.
L _{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
LOS	Level of Service
MDS	Maximum Daily Scenario
MFG	MFG Inc.
MLD	Most Likely Descendent
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MT	Mine Tailings
MW	Mine Waste
N ₂ O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCFD	Nevada County Consolidate Fire District
NCCP	Natural Community Conservation Plan Act
NCDEH	Nevada County Department of Environmental Health
NCIC	North Central Information Center
NCSD	Nevada County Sheriff Department
NCTC	Nevada Country Transportation Commission
NEPA	National Environmental Policy Act
Newmont	Newmont USA Limited
NID	Nevada Irrigation District
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NOA	Notice of Availability
NOC	Notice on Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places

NSAQMD	Northern Sierra Air Quality Management District
NWP	Nationwide Permit
OEHHA	California Office of Health Hazard Assessment
OES	Office of Emergency Services
OHFD	Ophir Hill Fire District
OHP	California Office of Historic Preservation
OPH/SCH	Governor's Office of Planning and Research-State Clearinghouse
Osborne Hill Project	Osborne Hill Trail Network Project
OSHA	Occupational Safety and Health Administration
Park	Empire Mine State Historic Park
PCOC	Potential Constituents of Concern
PEA	Preliminary Endangerment Assessment
PEIR	Program Environmental Impact Report
PFCs	Perfluorocarbons
PG&E	Pacific Gas and Electric
PGA	Peak Ground Acceleration
POC	Point of Contact
POST	Police Officer Standards and Training
PRC	Public Resource Code
PRGs	Preliminary Remediation Goals
Project	Site Characterization and Remediation Project
RAAR	Remedial Actions Analysis Report
RCRA	Resource Conservation and Recovery Act
REL	Reference Exposure Level
Resource Design	Resource Design Technology
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SARA	Superfund Amendment and Reauthorization Acts of 1986
SEL	Decibel rating for total sound energy of a discrete event
SF ₆	Sulfur Hexafluoride
SFR Act	State Fire Responsibility Act
SHPO	State Historic Preservation Officer
SMARA	Surface Mining and Reclamation Act
SO ₂	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasures
SR	State Route
SRA	State Responsibility Area
SSSP	Site Specific Safety Plan (cultural p 4.4-13)
STLC	Soluble Threshold Limit Concentrations
SVP	Society for Vertebrate Paleontology

SWMP	Surface Water Monitoring Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TDS	Total Dissolved Solids
TIS	Traffic Impact Study
TTLC	Total Threshold Limit Concentrations
UCMP	University of California, Museum for Paleontology
URF	Unit risk factor
US DOI	United States Department of the Interior
USACE	United States Army Corp of Engineers
USEPA	United States Environmental Protection Agency
USFS	United State Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
Vestra	Vestra Resources, Inc.
VHFHSZ	Very High Fire Hazard Severity Zone
VIA	Visual Impact Assessment
WDR	Water Discharge Requirements
WHO	World Health Organization
WSNMB	Western Sierra Nevada Metamorphic Belt
W.Y.O.D.	Work Your Own Digs
ZEV	Zero Emission Vehicles

8.2 GLOSSARY OF TERMS

Accreted Terrain: A mass of continental or oceanic material added to the margin of a continent by collision or subduction.

Acoustics: The science of sound.

Active treatment measures: Measures such as the construction of a water treatment facility that would use chemical agents or treatment processes to cleanse water.

Adit: A horizontal or gently inclined passage leading into a drift or lode mine that follows the *auriferous* gravels or vein. Containing only one opening, as opposed to a tunnel, which has two. Frequently associated with *shafts*, adits contrast with *cross-cuts*. On archaeological sites, adits have frequently collapsed. Generally used as any horizontal hole into a hill or mountain.

Aluminum: A metallic element noted for its thermal and electrical conductivity. The toxicity of this element is related to overexposure and is linked to reduced skeletal mineralization in infants.

Alluvial: An adjective used in describing materials or processes associated with the transportation or deposition by running water .

Alluvium: A general term for clay, silt, sand, gravel, or similar unconsolidated detrital material deposited during geologically recent time by a stream or other body of flowing water.

Amador Contract: A number of contracts available to California fire departments through Cal Fire. Departments utilizing this contract are staffed by Cal Fire through the winter “off-season.” In those areas without a contract the winter will be spent with reduced staff and closed Cal Fire stations.

Amalgam: In gold metallurgy, an alloy of gold and mercury.

Amalgamation: The process of combining gold and mercury. In placer gold mining, adding *mercury* into a *pan* at the end of a day or behind the *riffles* in a *sluice* whereby it combines with the gold to form an alloy or *amalgam*. In gold milling, the process of extracting gold from pulverized ores by producing amalgam. The next step in the gold-extraction process is *retorting*, or heating up the mercury until it turns to vapor and leaves only the gold behind.

Ambient Noise: The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Ancillary Mining Complex: A cultural resource *property type* consisting of systems commonly found in association with ore extraction and processing, such as assays, offices, and blacksmith or mechanic shops. It can be a distinct property when separated from mining and milling facilities by a reasonable distance.

Antimony: A metallic element frequently used in alloys and medicine. Antimony is toxic; exposure to large doses induces vomiting and can be fatal.

Arrastra: A circular stone-lined mill with a center post and dragstone used to pulverize *cobble*-size deposits. Water or animal operated, arrastras require very little energy and capital once constructed. Once the gold-bearing rock was pulverized, mercury was added for amalgamation. Gold was recovered from cracks and unchinked spaces in the rock floor during periodic clean-up events. Similar device is Chili Mill; Spanish spelling is *arrastre*.

Arsenic: A solid element used in insecticide and weed-killers. Arsenic and several of its compounds are poisonous. Exposure can cause fatal organ failure.

Artifact: A single portable cultural item typically found in an archaeological context.

Artifact Deposit: A cultural resource feature or *property type* consisting of sparse-to-dense concentrations of historic-era *artifacts* without evidence of temporary or permanent shelter or other structural features. The deposits can be sheet concentrations on the surface or accumulations filling natural or cultural hollow features, such as a gully or a privy.

Assay: Testing a deposit for the quality and quantity of gold or other valuable substance. Assaying focuses on specific minerals, such as gold, and does not provide the range of minerals available at a location. Typical for most mining

operations a *prospect* is excavated and the material reduced and assayed to determine if development is practical.

Attenuation: The reduction of an acoustic signal.

Auriferous: Containing gold.

A-Weighting: A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Barium: A malleable metallic element that occurs only in combination. Barium and its compounds are used in the drilling and medical industries. Soluble Barium compounds are toxic and can be fatal with prolonged exposure.

Bench Placers: Sections of a former stream *channel* that have been geologically abandoned when the stream changed course or carved down into the hillside. Containing some or all of the characteristics of modern *stream placers*, bench placers are often a distance from a water source, 50 to 300 feet above the present stream. Higher locations were sometimes called hill diggings.

Beneficiation: The reduction of ores.

Board Sluice: Long, narrow, and inclined wooden trough with a riffle-lined bottom, each typically 12 feet long by 1 to 2 feet wide by 10 inches high, used in placer mining. The ends were designed so that they could be slip-joined to form chains reaching hundreds of feet in length, depending on the nature of the *placer*. See *sluicing*.

Booming: A California term that refers to the collection of water at a dam/reservoir and its sudden release, usually through a gate, to cause a forceful surge against a *working face*. The surge both erodes and transports soil and gravel through sluices. The gate allows the process to be repeated once the dam has filled with water. Used in either ground sluicing or hydraulic mining, frequently near the end of a season when water is scarce.

Boulder: Any rock 10 inches long or larger.

Cadmium: A malleable metallic element that is used in the production of protective plating and bearing metals. Cadmium is a known carcinogen and its toxicity is most frequently associated with inhalation.

Cairn: A group of stacked rocks used to demarcate a boundary. Often used in mining to define the boundaries of or denote the general area of a claim.

Calcination: Reduction of *ore* and other material to a friable condition, often using a *crucible* and furnace.

California Department of Fish and Game (DFG): DFG maintains native fish, wildlife, plant species and natural communities for their intrinsic and ecological value and their benefits to people. This includes habitat protection and maintenance in a sufficient amount and quality to ensure the survival of all species and natural communities.

California Department of Forestry and Fire Protection (CAL FIRE): Cal Fire Protection serves and safeguards the people and protects the property and resources of California.

California Department of Parks and Recreation (DPR): DPR seeks to provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

California Department of Toxic Substances Control (DTSC): The mission of the DTSC is to provide the highest level of safety, and to protect public health and the environment from toxic harm.

California Environmental Quality Act (CEQA): Legislation enacted in 1970, as amended, to protect the quality of the environment for people of California through requiring public agencies and decision makers to document and consider the environmental consequences of their actions.

California Historical Building Code (CHBC): While the California Building Code (CBC, section 3403.5) makes provisions for the special treatment of qualified historic buildings, the CHBC amplifies and codifies this protection. The CHBC governs all other statutes or regulations as they may apply to qualified historical buildings.

California Human Health Screening Levels (CHHSLs): Regulations that define thresholds of COCs that are harmful to human health.

California Master Mutual Aid Agreement: CalFire assists other fire departments within the state when Department resources are available, regardless of the type of disaster. In turn CalFire can access the local government fire departments through the same agreement for assistance with wild-land fire suppression.

California Natural Diversity Database (CNDDDB): A program that inventories the status and locations of rare plants and animals in California.

California State Park and Recreation Commission: The responsibilities of the Commission include the approval of general plans for units of the State Park System, classifying units of the System, establishing general policies for the guidance of the Director of State Parks in the administration, protection and development of the System, and recommending to the Director a comprehensive recreation policy for the state.

California State Park System: Maintains and manages more than 270 park units, which contain the finest and most diverse collection of natural, cultural, and recreational resources to be found within California.

California Toxic Rule (CTR): A promulgated numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to waters in California. This rule is based on the Administrator's determination that the numeric criteria are necessary in California to protect human health and the environment.

Californios: A 19th century term for native and naturalized Californians under the Mexican Empire.

Central Valley Regional Water Quality Control Board: The primary duty of the RWQCB is to protect the quality of the waters within the Region for all beneficial

uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges.

Check Dams: A dam that divides a drainage-way into two sections with reduced slopes.

Channel: A linear depression where a stream of water runs.

Chlorine: A halogen element that can be isolated in its gaseous form. Chlorine is used as a bleach and water purifier. The element is toxic in its gaseous form and can cause respiratory irritation and death at high concentrations.

Chromium: A metallic element found organically only in combination and used in alloys and electroplating. Chromium is not toxic, but various Chromium compounds are known carcinogens.

Claim: The portion of mineral ground held under federal and local laws by claimant or company, also called a *location*. Sometimes marked with either rock cairns or blazed trees. Not all mining events had filed claims.

Clast: An individual constituent, grain, or fragment of sediment or rock, produced by the mechanical weathering of a larger rock mass. Adjective is clastic (Natural Resources Conservation Service 2004).

Clean-up: The practice of collecting gold taken out during a single *run* of a *stamp mill*, or in a placer mine.

Cobble: Any rock between 2-1/2 and 10 inches long.

Cobalt: A magnetic metallic element related to iron and nickel and used in alloys. Cobalt can be absorbed through ingestion, inhalation, or through the skin and is toxic at high concentrations.

Colluvial: An adjective used to describe mixed deposits usually at the foot of a slope or cliff that have been transported mainly by gravity.

Colluvium: Unconsolidated, unsorted material being transported or deposited on sideslopes and/or at the base of slopes by mass movement (gravity) and by local, unconcentrated runoff.

Community Noise Equivalent Level (CNEL): Defined as the 24-hour average noise level with noise occurring during evening hours (7 a.m. - 10 p.m.) weighted by a factor of three and noise occurring during nighttime hours (10 p.m. - 7 a.m.) weighted by a factor of 10 prior to averaging.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

- Conceptual Site Model (CSM):** A report which describes potential release mechanisms, transport pathways, and exposure routes to receptors. Information from the CSM is used to determine whether remediation is necessary.
- Constituents of Concern:** Elements that could be present at the Park that exceed regulatory guidelines or background levels and could potentially effect human health.
- Copper:** A common metallic element that is a conductor of heat and electricity. A low level of toxicity is associated with overexposure to copper, which can be especially damaging to marine life.
- Corral:** A cultural resource feature or *property type* consisting of an enclosure for confining animals, typically livestock.
- Cortese List:** A list of hazardous materials sites maintained by the California Environmental Protection Agency.
- Coyote Hole:** A depression or crater resembling the burrow of a coyote created by prospecting. Also see *coyoting* and *pocket mining*.
- Coyoting:** Alternative spelling is coyoteing. A mining method “likened to the digging and burrowing of the coyote”. The result can appear like animal burrows, leading to the popular period term, coyoteing. This prospecting and limited extraction activity created a mine landscape characterized by uneven and cratered ground surface. Also see *coyote hole* and *pocket mining*.
- Creviceing:** The mining of bedrock in stream channels for gold that has washed down and lodged in irregularities. The best locations are just below fast moving sloping areas at flat areas with tilted bedrock of shale and slate. Picks, pry bars, long-handle spoons, and shovels are used to loosen the detrital material and then it is washed to recover any gold. Frequently this is a spring or summer activity for one or two people, leaving few archaeological remains. Now it is considered recreational, but previously associated with more depressed times or an activity to augment other jobs.
- Cross-cut:** A horizontal passage dug at right angles to the gold. Also see *adit*.
- Crosswalk:** A research tool used to guide analysis and reporting, particularly when there are multiple data sources. A crosswalk often is presented in table format to map relationships and equivalencies between two or more data sources.
- Crucible:** A stoneware hollow container used for melting or roasting metals and ore. See also *Calcination*.
- Cumulative impacts:** Collected look at projected results of the project, including temporary remediation and long-term operational impacts. It also identifies impacts imposed by unrelated projects planned or in progress in the area that, combined with impacts from the project, could result in significant environmental impact.
- Cut:** A general term used to describe the face of any culturally derived excavation face. In mining refers to a *working face*.

Cyanide Process: The dissolving of gold and silver by the use of a solution of alkaline cyanide.

Cyanide: A compound made of cyanogens and another more electropositive element. Many cyanide compounds are highly toxic. Frequently used in gold extraction. Large, rectangular tin cans that once contained the substance are frequently strewn over the hillside or along creekbanks near mill areas.

Dam/reservoir: A variety of dams were used in mining related activities, constructed from earth, stone, timber, and eventually concrete. In California, there were two main types—*debris dams* and *reservoir dams*. They were also used to divert flow and open portions of streams to mining, as with *wing dams*. Also a cultural resource feature or *property type* consisting of containment features, and often conveyance features such as ditches or evidence of flumes.

Data Gap Report (DGR): A compilation of existing background data, including previous investigations and data collected during these investigations, for a proposed project. It serves to identify areas for further evaluation.

Data Transmittal and Evaluation Report (DTER): A report prepared by after CITE characterization to evaluate, summarize and present the field, laboratory, and investigation data. The report also serves to update the CSM, determine if additional characterization is required and present a range of applicable remedial actions alternatives, if necessary.

Debris: A flow consisting of silt, sand, and gravel resulting from *hydraulic mining*. Archaeologically the only portion that might remain would be behind *debris dams*. Also see *tailings*.

Debris Dams: Constructed to hold back hydraulic *debris*. This was legally mandated after 1884 in any source that lead to the Sacramento River, or late 1880s in other northern California locations (such as the Siskiyou area). Often the wall was constructed of logs, bolted and spiked together, which was called a crib dam. This type of construction acted as a sieve allowing water to leak out while keeping the debris contained. Also see *tailings impoundment*.

Decibel (dB): Fundamental unit of sound, a Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.

Deflector: In hydraulic mining, the tapering end portion of a *Giant* nozzle or *monitor* that narrows the water to create added pressure and enable the stream to pivot.

Diabase: A hypabyssal rock of the composition of gabbro but having an ophitic texture and consisting of labradorite laths in a matrix of augite with magnetite a common accessory.

Diameter Breast Height (dbh): Defined as 4.5 feet above groundlevel.

Ditch: A cultural resource feature or *property type* composed of a linear structure used to transport water from one location to another. Small, hand-dug ditches are the most common. Construction consists of surveying or eyeballing along a contour.

Vegetation is removed and the ditch excavated, often using hand tools, into the hillside. Excavated material is typically mounded on the downhill side to create a berm, often incorporating local county rock on steep slopes and in drainages. *Flumes* and *siphons* were used when necessary, particularly in larger systems. Extensive water conveyance systems were usually surveyed, financed, and constructed by a company. Initial ditch building in the Sierras was by companies of miners who needed a constant supply of water to separate out gold through sluicing. The average mining ditch drops 7 to 12 feet per mile.

Draft Program Environmental Impacts Report (Draft PEIR): A detailed informational document prepared by the public agency responsible for carrying out a project as part of the CEQA process that describes and analyzes a project's significant environmental effects.

Drain Outlet: A cultural resource feature or *property type* consisting of an opening in the ground surface allowing groundwater to draw from underground workings at higher elevations.

Duff: Organic matter in various stages of decomposition on the floor of the forest.

Dredge: A scoop or suction device usually mounted on a barge and used to clear or deepen waterways, such as harbors or channels. For gold mining purposes it is combined with screening and separating apparatuses.

Dredger: 1. A person who operates a *dredge*. 2. A placer mining system operating from a large raft or barge. Bucket-lines or suction pumps scoop up *auriferous* deposits that are screened, sorted, and sluiced. Waste gravels and sand are re-deposited as tailings into the creek or sent by conveyor to stacks in the creekbed behind, leaving vast tailings fields with high, rounded parallel rows of cobbles. The first successful dredger in the United States operated at the Bannack Mining District, Montana, in 1895. The dragline or doodlebug dredge was developed in the 1930s and operated using a shore-based bucket and a floating washing plant that produced clusters of conical, or rounded, individual piles.

Dredging: The mining of *alluvial* deposits by floating washing machines (dredgers) that are either bucket-line or dragline.

Drift Mining: Employed in California by 1851 (some suggest as early as 1849), a *placer mining* technique that uses *adits* to follow the *tertiary gravels* containing gold. *Shafts* might be added to bring in air and, depending on the size of the operations, galleries and gangways were also used. When veins or old watercourses were near the surface, miners would use trenches that are archaeologically distinguishable by their irregular shape. After digging the gravels, early drift miners processed the material with a *pan*, *sluice*, or *long tom*. This technique reached its peak in the 1870s and was in use in some localities until World War II. Sometimes called *coyoting*.

Drip zone: Areas where lead contamination from roofs may concentrate and therefore target areas for clean-up.

Dry Placer: In arid or semiarid areas, dry placer refers to *placer deposits* that are transported by erratic, short-lived fast-moving creeks that are a product of heavy raining. The gold is often angular because it has not been tumbled very far or for very long. Usually the water supply must be brought into the workings. Now called desert placers. Historically, more successful in Australia than in the southwestern United States.

Dwelling: A cultural resource feature or *property type* consisting of an isolated habitation—such as an extant house, cabin or tent flat—with no evidence of gold mining, agriculture, or other notable enterprise within the site boundary. Evidence of habitation may include standing residential buildings, or archaeological manifestations of habitation, such as stone or brick foundations, cellars, chimneys, flats, and/or structural artifact assemblages such as large quantities of brick, fasteners, or window glass.

Eluvial Placers: Usually indicative of a transition stage between residual placer and stream placer. Characteristically formed of “irregular sheets of surface detritus and soil mantling a hillside below a vein or other source of mineral” (Wells 1976:11). Mining operations are often limited in extent, but a few of these placers have supported short-term, large-scale mining operations.

Eluvium: An accumulation of rock debris produced by weathering and disintegration of rock in place, which can be slumped or washed downslope a short distance but not transported by a stream; or fine soil or sand moved and deposited by the wind.

Engineered Controls: Methods that use exclusionary fencing and/or boardwalks to control unauthorized access to certain areas.

Evapotranspiration: The rate at which water is lost to evaporation from the ground surface and from transpiration by vegetation.

Exposure pathway: A description of the route a COC may take from its source to its end point and how human and ecological receptors can come into contact with (or be exposed to) the constituents along the route.

Feature System: A group of archaeologically visible features and objects that is the product of specific human activity.

Federal Migratory Bird Treaty Act: The Act, established in 1918, implements various treaties and conventions between the US and Canada, Japan, Mexico, and the former Soviet Union, for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.

Fence Line: A cultural resource feature or *property type* consisting of post and wire alignments that could involve stone masonry along the base as well. Less frequent are full stone fence lines. Post and barbed-wire fence lines were common beginning in the 1870s, and they are frequently an element of more complex site types. Many fence lines align well with property boundaries evident on historic maps. Given their linear nature and potential for identifying associations, fence lines can contribute to relative dating of District elements.

Fire hazard Severity Zones: Geographical areas designated pursuant to California Public Resource Codes Sections 4201 through 4204 and classified as Very High, High or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189.

Flood Gold Deposits: Flood gold or flour gold refers to particles of gold so small that they float in muddy water, often traveling long distances under flood conditions before they are deposited between the high and low water level along bars. Panning, or devices with riffles will not profitably capture this type of gold. Early on rockers were modified and used to capture this type of gold, with some dredging operations later in time. Typically such mining is not very profitable.

Flume: A means to convey water usually in a trough made of milled wood. It was originally constructed to bring water to mining claims. Sometimes used in conjunction with *ditches*. Later used for agricultural and municipal uses. By 1852, it was cheaper to build flumes than reservoirs, even though lumber was expensive. Also, to “divert by a flume, as the waters of a stream, in order to lay bare the auriferous sand and gravel forming on the bed”.

Free Gold: Gold that is separated and uncombined with other substances and minerals naturally through weathering processes, as a *placer*.

Frequency: The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.

Giant/Little Giant/Monitor: Names for nozzles used in *hydraulic mining* that create the intense pressure necessary to reduce hillsides to gravel.

Goals: Statuary values established by regulatory agencies that once attained eliminate the need for additional remediation.

Governor’s Office of Planning and Research (OPR): This department is designated in statute as the state comprehensive planning agency. OPR is responsible for carrying out various state level environmental review activities pursuant to CEQA.

Grain: Rock material ranging from 1/16 to 1/8 inches long. Items smaller than this are divided into various kinds of sand, followed by silt and then clay.

Granodiorite: A plutonic rock consisting of quartz, calcic oligoclase or andesine, and orthoclase. Granodiorite is an intermediate between quartz monzonite and quartz diorite.

Gravel: Any pebble between 1/8 and 2 1/2 inches long.

Grizzly: A grate or grill typically made from a series of evenly spaced ferrous bars or rails (usually 2 to 4 inches wide) sometimes used in *placer mining* at the head of a sluice to eliminate large rock (creating *placer tailings*), or along a sluice to allow smaller cobbles and gravels to pass into an *undercurrent* for finer sorting. Also used in milling to block material that is too large from entering.

Ground Sluice: Inclined trench cut into gravel or bedrock with the natural irregularities of its bottom acting as riffles. A prepared trough in the ground through which

auriferous earth is placer mined incorporating a variety of riffle designs, including the placement of large stones.

Ground Sluicing: To wash down a bank of earth with a stream of water flowing in both natural and artificial gullies. A mining method using non-pressurized flowing water to wash away and process placer deposits and overburden (Wells 1969:101). A *head race* brings water to a workings where, either from here, or using a hose, *penstock*, or a *lateral ditch*, the water is allowed to wash over gravels with the encouragement of picking and caving-in of the hillside, creating a *working face*. Dislodged gravels are processed through either a wooden *board sluice* or narrow, rock-lined custom-built *ground sluice*. Larger stones are typically cast aside or stacked, creating *placer tailings*.

Groundwater: Water within the earth that supplies wells and springs.

Group A: Mining wastes that must be managed as hazardous waste pursuant to Chapter 11 of Division 4.5, of Title 22 CCR, provided the Regional Board finds that such mining wastes pose a significant threat to water quality.

Group B: Mining wastes that are fulfill one of the following: consist of or contain hazardous wastes, that qualify for variance under the Chapter 11 of Division 4.5, of Title 22 CCR, provided that the Regional Board finds that such mining wastes pose a low risk to water quality; or consist of or contain nonhazardous soluble pollutants at concentrations which exceed water quality objectives for, or could cause, degradation of waters of the state.

Group C: Mine waste from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity.

Hazardous Materials: A substance, or combination of substances which, because of its quantity; concentration; or physical, chemical, or infectious characteristics, may either: 1) cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating illnesses or 2) Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Head: A measure of water pressure; the vertical height between the intake and discharge points of a pressurized water system. Water discharged 200 feet below the intake of a pipe is working with a 200-foot head.

Headframe: A timber or steel structure over the shaft that supports the sheave and hoisting rope and is braced to withstand the pull of a hoisting engine.

Head Race: A *ditch* or *flume* supplying water to a workings or mill. See *supply ditch* and *lateral race*.

Historical Context: A particular theme that is further delineated by a time period and geographic area.

Hole: A cultural resource feature or *property type* consisting of a single opening in the ground surface without any associated waste dump, differentiating it from *adits*,

shafts, and even *prospects*. They can be of any dimension, with some extending 20 to 30 feet deep. They are common elements of other property types. They may represent ventilation openings for extensive underground workings, or provide a similar function. They may also be the result of caving within near-surface underground workings.

Homestead/Ranch Complex: A cultural resource *property type* reflecting the core of a subsistence settlement, and consisting of a mosaic of *feature systems*: artifact deposits, dwellings, and ranch or homestead elements. They typically include corrals, outbuildings, fence lines, and/or orchards as well.

Hydraulic Mining: Invented in 1852 and legally restricted in 1884 because of its environmental impacts, hydraulic mining involves excavating a bank or hillside for gold-bearing gravel using a high-pressured jet of water. The hillside caves in, disintegrating into gravels, which are carried through *sluices* where the *riffles* catch the gold. This process leaves an easily identifiable, devastating, moon-like landscape. After 1884, or late 1880s for Northern California outside the Sacramento River shed, all hydraulic mining legally required *debris dams*.

Independent Utility: A method that allows a lead agency to evaluate a small portion of a large project as a 'stand alone' project if the small project can be viewed as autonomous from the large project while still disclosing all environmental impacts.

Institutional Controls: Non-physical administrative or legal controls to limit human exposure to COC.

Interim Actions: Actions which reduce or eliminate potential exposure of COC to humans and the environment while permanent remediation options are evaluated and then implemented.

Iron: A heavy malleable and ductile metallic element that rusts readily. Iron is used in most metals and is vital to many biological processes. Fatal liver failure can result from ingesting high concentrations of iron.

Inversion conditions/layers: A folding back of rock strata upon themselves as a result of intense and long continued lateral pressure, causing the sequence to seem reversed.

Lateral Race: A small *ditch* lying between the *main race* and a mining operation.

Lead Agencies: The public agency that has the principal responsibility for carrying out or approving a project. Lead agency will decide whether an EIR or negative declaration will be required for the project and will cause the document to be prepared.

Lead: A soft malleable but inelastic metallic element found in naturally occurring combinations. Lead is used in shields against radioactivity and for piping. Lead is toxic when inhaled or ingested and is believed to affect the central nervous system, the cardiovascular system and kidneys. Pronounced *lead*, a term applied to both *lode* and *placer* auriferous deposits.

L_{eq}: Equivalent or energy-averaged sound level.

Level of Service: A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction and delay.

L_{max}: The highest root-mean-square (RMS) sound level measured over a given period of time.

Location: A fixed mining *claim*. Steps a claimant or company take to demarcate the extent of a *claim*.

Lode: A tabular geologic deposit of valuable mineral between definite boundaries. Cornish alteration of *lead*.

Lode/Placer Mine: A cultural resource *property type* consisting of lode or placer extraction *feature systems*, depending on the type of mineral deposit targeted. A lode or placer gold mine property, for the purposes of this typology, contains no habitation evidence, and can be conceived of as a landscape element.

Lode Mine and Mill: A cultural resource *property type* that contains the same feature types as the *lode mine* property type, with the addition of *feature systems* associated with *beneficiation*.

Lode Mine and Mill Complex: A cultural resource property type containing a combination of buildings, structures, objects, features, and artifacts associated with ore extraction, beneficiation, and habitation.

Lode/Placer Mine Complex: A cultural resource *property type* reflecting mining activity and residential occupation.

Long Tom: Introduced to California gold fields beginning in 1850. The long tom is two-layered wooden device consisting of an upper trough (8 to 15 feet long by 1 1/2 to 2 feet wide) with perforations at one end allowing smaller washed gravels and smaller heavy particles to wash into the lower riffled box. Later versions combine the two layers.

Loudness: A subjective term for the sensation of the magnitude of sound.

Manganese: A brittle metallic element that resembles iron in its properties but is not magnetic. Manganese has a lower toxicity than many other common metals, but prolonged exposure to manganese compounds is associated with impaired motor skills.

Matrix: The rock containing a valuable mineral or metallic ore, such as gold.

Mercury/Quicksilver: A heavy, silver-white liquid metallic element. Combines with most metals (gold, silver, etc.) to create an alloy or *amalgam*. Mercury vaporizes at low temperatures making it easy to separate from other metals such as gold. Its abundance in the western United States made mercury the preferred way to collect gold. See *amalgamation* and *retorting*.

Mill: A cultural resource *property type* consisting of beneficiation *feature systems* set apart from extraction and domestic activities.

Miner's Inch of Water: A measurement of water volume. Once an arbitrary volume varying by locality that is still not nationally standardized, but defined for each state. In California, a miner's inch is either 9 (1/40 second-foot) or 11-1/2 gallons (1/50 second-foot) per minute.

Mining Landscape: A cultural resource *property type* consisting of densely organized lode and/or placer prospecting and/or extraction *feature systems* without evidence of habitation. Although reflecting intensive mining activity, mining landscape properties generally lack evidence of developed surface plants (e.g., hoist works, power generators), beneficiation, or ancillary facilities.

Mining Landscape Complex: A cultural resource *property type* that is essentially the same as a *mining landscape*, with the addition of one or more associated artifact deposits or features reflecting habitation.

Mitigation Measures: A method or procedures which may: (1) avoid an impact altogether by not taking a certain action or parts of an action; (2) minimize impacts by limiting the degree or magnitude of the action and its implementation; (3) rectify the impact by repairing, rehabilitating, or restoring the impacted environment; (4) reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and (5) compensate for the impact by replacing or providing substitute resources or environments.

Monument: A cultural resource feature or *property type* consisting of isolated survey or property markers. Monuments typically consist of an upright stake or post made from a pipe, tramway rail, or milled lumber, and fortified at the base with a stone cairn in some cases.

National Register of Historic Places (NRHP): The official list of the nation's historic places worthy of preservation. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior.

Negative Declaration: A written statement prepared by a lead agency that briefly describes the reasons why a proposed project will not have a significant effect on the environment and, therefore, does not require an EIR.

Nickel: A ductile metallic element that is resistant to corrosion. Nickel is used in alloys and as a catalyst. Nickel and its compounds are toxic in both solid and gaseous forms. Some nickel compounds are known carcinogens.

Noise: Unwanted sound.

Northern Sierra Air Quality Management District (NSAQMD): The District is required by state law to achieve and maintain the federal and state Ambient Air Quality Standards, which are air quality standards set at levels that will protect the public health.

Notice of Availability (NOA): A public notice that alerts interested groups, organizations, the general public, and local agencies of the Draft PEIR to solicit comments and questions regarding the Project

Notice of Completion (NOC): A brief notice filed with the Office of Planning and Research by a Lead Agency as soon as it has completed a Draft EIR and is prepared to send out copies for review.

Notice of Preparation (NOP): A brief notice sent out by a Lead Agency to notify Responsible Agencies, Trustee Agencies, the Office of Planning and Research, and involved federal agencies that the Lead Agency plans to prepare an EIR for a project.

Nutrient: A nutritious or nourishing substance; any substance which promotes growth or provides energy for physiological processes.

Open Cut: A surface working that is open to daylight, generally used for gravel or stone masonry. See also *cut* and *working face*.

Open space: Defined in Grass Valley as “any parcel or area of land or water which is essentially unimproved and devoted to an open space use.”

Ore: A mineral aggregate containing a valuable constituent (such as a metal), which is mined and worked for a profit.

Orchard: A cultural resource feature or *property type* consisting of fruit or nut tree plantings, or their remains, that generally retain an organizational layout, usually rows. Fence lines and irrigation elements can be components. While often elements of other property types, namely a *homestead/ranch complex*, an orchard property type is devoid of dwellings or other substantial facilities.

Panning: In use in California by 1848, panning is the earliest and least complicated of all methods, with a miner using a shovel and a flat pan. Any dish could be used, even baskets and wooden bowls; Euroamericans preferred “tin” (ferrous) pans with an approximate 10 in. base and gently tapered sides of about 4 inches. The pan allows the gravel to be separated from the gold and the soil by washing this material in a pan with water in a swirling motion. It had widespread use by very early miners in California. By 1849, it was typically used in conjunction with more efficient devices, such as *rockers*, *sluices*, and *long toms*. Its continued use was not as the main method to process gold, but to *assay* or assess the quality and quantity of gold from a new area and to further process the reduced remains at the end of a day.

Passive Treatment Measures: Passive measures such as the construction of a wetland and/or passive treatment measure system of vegetation to remove targeted materials from the water source.

Peizometer: Any of several instruments for measuring the pressure of a fluid or the compressibility of a substance when subjected to such a pressure.

Piecemealing: When a large project is analyzed as independent projects, thereby avoiding full environmental analysis. Piecemealing is prohibited by CEQA.

Penstock: A cultural resource feature or *property type* consisting of wrought-iron heavy-grade sheet metal pipe that was transported in manageable segments to a working, *ditch*, or *flume* and then custom assembled for an individual working or water system. The pipe was placed resting on the ground, buried to last longer, or, when

spanning a gulch, supported by a trestle. This was often left on site once workings were abandoned. Canvas hose was used first, and then penstock was introduced, being first manufactured and commercially used in California in 1856.

Placer: *Auriferous* gravel deposit containing *free gold*, or other valuable minerals, usually in alluvium. Wells divides placers into the following classifications: *residual placers*, *eluvial placers*, *stream placers* (including the subcategories *gulch*, *creek*, *river*, and *gravel-plain*), *bench placers*, *flood gold deposits*, *desert (dry) placers*, *tertiary gravels*, and miscellaneous types (beach placers, glacial placers, and eolian placers).

Placer Mine: See *lode mine*.

Placer Mine Complex: See *lode mine complex*.

Placer Mining: Practice of processing auriferous sediments to extract gold. Typically using water to separate gold from other sediment, methods included panning, rocking, sluicing, ground sluicing, hydraulicking, and dredging.

Placer Tailings: In historical archaeology the term is used to describe any size *gravels*, *cobbles* and *boulders* that are moved in the act of *placer mining*. Large sediment components are typically relocated into unnatural piles or are stacked in order to gather *auriferous* deposits, which are further sorted by size through various separation and collection means. It is important to note the size and origin of the material to elaborate on specific placer mining processes (Lindström, Wells, and Wilson 2000). This material is typically waterworn, as opposed to the angular nature of *waste rock*. Also contrast with *tailings*.

Pocket Mining: Pocket mining begins with *panning* a shovel of dirt from a hillside, looking for isolated surface veins of gold. When gold is identified, another sample is taken uphill nearby, until a small area is defined or the pocket can be defined. Then a *prospect* pit was dug and occasionally blasting was necessary. Made famous in Mark Twain's *Roughing It*, this method was sometimes called *coyoting* in California.

Point Source: A source, especially of pollution or radiation, occupying a very small area and having a concentrated output.

Portal: An entrance to the underground workings of a mine, primarily a tunnel, shaft, or adit opening.

Potential Constituents of Concern: Elements that could be present at the Park that potentially exceed regulatory guidelines or could be above background levels and could affect human health.

Preliminary Endangerment Assessment (PEA): An analysis to determine whether current or past waste management practices have resulted in the release or threatened release of hazardous substances.

Program Actions: The range of characterization, evaluations, interim actions, and remediation that collectively constitute the Project.

Project Actions: The range of actions that could occur as a result of the implementation of Program Actions.

Property Type: A cultural resource defined by common physical and associative attributes.

Prospect: A cultural resource feature or *property type* reflecting lode exploration that did not lead to a developed mine. Any mine workings the value of which have not been determined. A gold mining prospect consists of one or more exploratory excavations, generally shallow in nature, isolated from any developed mining, and devoid of habitation evidence. Excavated material, typically quartz or other parent rock, has been piled around or adjacent to the prospect. Valuable prospects are typically developed.

Prospecting: Conducting exploratory excavations.

Race: An open *ditch* that carries water. There are various kinds of races: *head races*, *lateral races*, and *tail races* are used most often.

Ranch Complex: See *homestead complex*.

Ranch Element: A cultural resource feature or *property type* consisting of limited ranch or farm components, devoid of substantial habitation features, such as an isolated barn or outbuilding.

Reagent concentration: The concentration of a particular chemical or solution which takes part in a biological process or is used to produce a desired chemical reaction.

Reconstruction: Defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure or object for the purpose of replicating its appearance at a specific period of time and its historic location.

Reference Exposure Level (REL): A concentration level or dose at (or below) which no adverse health effects are anticipated for a specified time period. RELs are used by the California Environmental Protection Agency (Cal/EPA) as indicators of potential adverse health effects.

Rehabilitation: The act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

Remedial Actions Analysis Report (RAAR): A report that evaluates the range of applicable remedial action alternatives and to refine the action(s) to a specific site. A RAAR serves to define action(s) to address exposure pathways related to elevated concentrations of COC and to evaluate alternative actions based on effectiveness, permanency and cost.

Remediation options: Actions which serve to eliminate or reduce the risk of potential exposure pathways to humans or the environment from identified COC.

Reservoir Dams: Dams constructed to store a constant water source for *ground sluicing*, *booming*, and *hydraulicking* operations. Preferred locations for storage reservoirs are those that contained compact rock and steep, denuded watershed. Masonry dams were expensive to build but to successfully hold large amounts of

water at least one side must be stone. Later dams were constructed from concrete. Often these have been turned into part of the municipal water system for the county.

Residual Placers: A concentration of gold at or close to the parent rock from which it was released. These deposits are not large and are usually considered relatively unimportant, although they may be rich.

Responsible Agency: A public agency which proposes to carry out or approve a project, for which lead agency is preparing or has prepared an EIR or negative declaration.

Restrictive Covenants: A clause in the deed of a property that limits the actions of future owners.

Restoration: The act of or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of removal of features from other periods of history and reconstruction of missing features from the restoration period.

Retorting: For gold, following *amalgamation* is the process of vaporizing the *mercury* from the alloy or *amalgam* so that only the gold remains and the mercury can be recovered. A retort is iron bowl with a fitted lid and a pipe leading from it to a container of condensing water.

Riddle: A metal, perforated screen or sieve used to separate small cobbles and large gravel from auriferous sediment, particularly with a *long tom*.

Riffle: A small ridge in sluice-type mining devices to trap the heavier gold while lighter material would be washed away and larger material would be forked out. Sometimes this is as simple as a series of small pieces of wood nailed to the base of a *sluice*, *long tom*, or *rocker*.

Riparian Habitat: Areas adjacent to rivers and streams with a differing density, diversity, and productivity of plant and animal species relative to nearby uplands.

River Mining: This mining method consists of temporary diversions of rivers and creeks during the dry season to mine exposed gravels and bedrock for gold. Euroamericans employed diversions consisting of *wing dams*, *ditches*, and *flumes*. In use in California by 1849, this technique peaked in 1855 and 1856, before rapidly declining among Euroamericans. Chinese miners continued to use this technique using a waterwheel pump, which picked up the water and dumped it into a nearby sluice. Occasional later ventures included constructing the 12,000-foot, almost-one-million-dollar Big Bend Tunnel to expose 13 miles of the North Fork of the Feather River.

Rocker: Also called a rocker cradle or miner's cradle, the rocker is a two-layered wooden box and trough device. Dirt and water pass through the upper box through perforations (or *riddle*), where the remainder is washed over *riffles* that catch the gold with the rest washed out the end. The removable top box has a handle. First used in 1848, the rocker was an improvement over *panning* (four times more efficient) and was popular with most miners in the early 1850s. It continued to be

popular with Chinese miners and also where water was limited or available only seasonally. There were variations to the basic design—one was called a bullrocker.

Run: The duration a mine operates before it is shut down to *clean up*, repair, or other tasks.

Rural Road: A cultural resource feature or *property type* representing the classic narrow country road that dominates the region's rural landscape. Rural roads consist of a graded, two-track roadbed typically ranging in surface width from 10 to 15 feet, and wider in a few cases.

Sampling and Analysis Plan (SAP): A report that provides the appropriate procedures and protocol for documenting information, performing field soil/water analysis, laboratory analysis for proper sample collection, and an outline of health and safety guidelines for people conducting analysis.

SEL: A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-second time period.

Shaft: A vertical or near-vertical passage used for airshafts (typically smaller) or framed with wood for support for hard-rock mining endeavors. Entrance shafts to hard-rock mines may involve hoists and their accompanying stone or concrete foundation.

Significant effect on the environment: Significant" is defined in CEQA Guidelines §15382 as: "...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."

Siphon: A closed, ferrous-pipe portion of a water conveyance system designed to use gravity down one side and pressure, or *head*, up the other side, to span gullies and drainages.

Slickens: In California, a word describing the debris, or tailings, discharged from the hydraulic mines or stamp mills.

Sluice: A placer mining device. There were two basic types both requiring proper grade to operate correctly: (1) either alone or as an interconnecting series of wooden *board sluice* boxes with many *riffles* or other gold-trapping items crossing its width, through which the earth and water was passed; and (2) a prepared *ground sluice* trough carved into bedrock, and using the uneven rock surface or alignments of stones as *riffles*. Placer mining using sluices usurped the Long Tom between 1850 and 1852, revolutionizing gold washing. Gravel and cobbles were periodically forked out to keep the path open creating piles of *placer tailings* and sometimes *stacked rock*. Sluices were used in *sluicing*, *ground sluicing*, *drift*, and *hydraulic mining*.

Sluice Channel: Also called sluice water channel, a descriptive name for the U- or V-shaped channel where a *sluice* was operated, typically framed by *placer tailings*.

Sluiceplate: A shallow, flat-bottomed metal hopper at the head of a *board sluice* designed to catch large stones that could reduce gold recovery (Wells 1969:108). Also see *riddle* and *grizzly*.

Sluicing: In *placer mining*, the process of washing *auriferous* deposits through a *sluice*. Also see *board sluice* and *ground sluice*. The method uses open troughs lined with *riffles* to process creek and creek terrace gravels for gold. Using a high amount of water, sluicing is often associated with *ditches* bringing water to the workings.

Smart Sponge: An engineered filter-fabric insert for precipitating metals.

Smelting: The chemical reduction of a metal from its ore and certain fluxes by melting at high temperatures.

Solid Waste: Any unwanted or discarded material that is not a liquid or gas. Includes organic wastes, paper products, metals, glass, plastics, cloth, brick, rock, soil, leather, rubber, yard wastes, and wood, but does not include sewage and hazardous materials.

Special-status wildlife species: Species listed as threatened or endangered, proposed for listing, or are candidates for listing by either the Federal or State resource agencies. Wildlife species identified as state species of special concern are also considered special-status species under CEQA.

Specific Project Requirements: Requirements written for, and applied to, Projects based on specific actions unique to the project and/or site that are necessary to complete the project while protecting resources.

Stamp Mill: First documented use in California was 1851. A stamp mill consists of a vertical steel stem with an iron foot or shoe that is lifted by a cam and dropped with weight and gravity crushing the ore placed below. Stamp mills vary by the number of stamps and are described as such. Typically surrounded by *tailings* in gold-rich areas, stamp mills were in use seven days a week, throughout the day and night. Also see *mill*.

Standard Project Requirements: Requirements applied to projects state-wide that take accommodate BMPs, Department of Interior Standards and accepted regulatory requirements to reduce impacts to resources.

State Clearinghouse: This department coordinates the state-level review of environmental documents pursuant to the CEQA, provides technical assistance on land use planning and CEQA matters, and coordinates state review of certain federal grant applications.

State Responsibility Area (SRA): An area in which the financial responsibility of preventing or suppressing fires is primarily the responsibility of the state.

State Water Resources Control Board (SWRCB): The mission of the Water Board is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses.

Stope: An opening in the underground workings of a mine from which ore is mined.

Stream Placer: Deposits concentrated in current watercourses. This placer has been further subdivided by landscape form: gulch, creek, river, and gravel-plain placers:

- Gulch placers are small in area, steep, and typically limited to minor watercourses. Usually of poorly sorted gravels, they are often thin and discontinuous, surround by large quantities of boulders. In California, usually these areas were mined early on using basic hand tools, with some areas re-mined.
- Creek placers were often an important source of gold and have been mined using many methods beginning with *panning* and continuing through Depression-era re-mining *dredging* events.
- River deposits usually constitute the most extensive and important areas to be worked. These overall low-grade deposits have spurred *river mining* and *dredging* sometimes with very high yields.
- Gravel-plain or bar placers are formed on large rivers during times of high water creating geographic features frequently named flats, bars, or gravel bars. Ranging in age from geologically old to recent, they are found in flat areas of rivers just beyond steep drop offs and the inside curve of a gooseneck. Similar to *river placers*, the gold deposit tends to be larger in size with higher gold yields.

Strip: To remove overlying earth, low-grade or barren material from a placer deposit.

Substantial adverse change: For purposes of cultural resources, "substantial adverse change" means "demolition, destruction, relocation, or alteration of the resource such that the significance of a historical resource would be materially impaired."

Substrate: A layer of metal underlying a coating, regardless of whether the layer is basis metal.

Superintendent Orders: An authoritative mandate, command, or direction issued by a senior administrator, or Superintendent, under the authority of California State Parks.

Supply Ditch: A ditch that carries water to the general area of a mine or group of mines, but cannot be specifically called a *head race*.

Tail Race: The ditch at the end of a sluice containing water and *tailings*, most of which gets carried downstream.

Tailings: Any incoherent or fluid material separated as refuse, or separately treated as inferior in quality or value. In *lode* mining, mill discard that is rejected after ore passes through the screens of a *stamp mill*, or the worthless slimes after separation by dressing or concentration. In *hydraulic mining*, the sediments that pass through sluices as *debris*. See also *slickens*; contrast with *placer tailings*.

Tailings Impoundment: A generally large cultural resource *property type* designed to contain fine sediment *debris* or *tailings* disposed at the tail end of a hydraulic mine or *beneficiation* process, such as a *stamp mill*.

Tertiary Gravels: Gold-bearing gravels from Tertiary age (60 to 1 million years ago) stream alluvium.

Thallium: A metallic element that resembles lead in its physical properties and is used in insecticide. Thallium and its compounds are highly toxic and exposure can result in hair-loss, nerve damage and death.

Threshold of Hearing: The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.

Threshold of Pain: A level approximately 120 dB above the threshold of hearing.

Tiering: A method of complying with CEQA used in dealing with very large projects that will be reviewed and built over a long period of time, as with an extensive road-building program.

Trails: A narrow, single-track pathway of linear construction.

Tramway: A cultural resource feature or *property type* consisting of narrow-gauge tramway grade alignment and associated features. This type of feature system is common in *lode mines*, and often found associated with *waste dumps*.

Trustee Agency: A state agency having jurisdiction by law over natural resources that could be affected by a specific project.

Undercurrent: In association with a board *sluice*, a large, flat, broad wooden box platform lined with *riffles* located below and to the side of any *sluice*-type device. Water and material are diverted through a *grizzly* into the box where the velocity slows in order to collect fine gold particles. It is in this portion of the device that the gold is typically *amalgamated*.

United States Army Corp of Engineers (USACE): The USACE seeks to provide vital public engineering services in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters.

United States Fish and Wildlife Service (USFWS): The premier government agency dedicated to the conservation, protection, and enhancement of fish, wildlife and plants, and their habitats for the continuing benefit of the American people.

Use Restriction: A clause in the deed of a property that places limits on its use.

Utility Line: A cultural resource feature or *property type* consisting of various transmission lines, most commonly for electricity and water, and possibly telegraphs or telephone service as well. Electrical and other elevated types consist of wood utility poles—either standing or the stumps of cut-down poles on razed lines—that often occur with glass or ceramic insulators, wire, and/or other hardware.

Values: A numeric indicator that is utilized to determine whether additional evaluation and/or characterization is necessary.

Vanadium: A malleable and ductile metallic element found organically in mineral combinations. Vanadium is used in alloys, such as steel. Vanadium and its compounds are considered toxic and can be fatal with prolonged exposure.

Wagon Road: A cultural resource *property type* consisting of narrow, two-track alignments and associated features. Wagon roads range in surface width from 6 to 9 feet and may include dry-laid stone-masonry components and/or an earthen berm along the downhill edge.

Waste Rock: In lode mining, barren or marginal rock that has been excavated but not of sufficient value to warrant milling, and therefore deposited or dumped usually in the vicinity of the mine *portal*. It is rock not valuable enough to be classified as *ore*, and is also called waste. This material is typically angular, as opposed to the water-worn nature of *placer tailings*.

Waste Rock Dump: The uneconomical rock that was mined and disposed of in the vicinity of a mining operation.

Wastewater: Water that has been used, as in a manufacturing process or sewage.

Wetlands: An area of land consisting of soil that is saturated with moisture, such as a swamp, marsh, or bog. A wetland may serve many functions, including wildlife habitat, water storage, and nutrient cycling.

Wetland Delineation: A determination of the landward extent of a wetland, conducted by a qualified environmental professional. Binding or jurisdictional wetland delineations will be required in cases of suspected violations of the County's wetland regulations or in those cases where development adjacent to a wetland may have a negative impact on the wetland.

Wing Dam: Employed historically in *river mining*, a means of diverting and exposing a portion of a riverbed. The simplest version is built partly across a river to deflect the water from its course. Another version is L-shaped, extending out from the bank into the middle of the *channel*, and then angling downstream. A more robust version employs a wing dam parallel to and within the *channel* of a segment of a river, connecting to perpendicular upper and lower cross dams, in order to box a portion of river. The continuing flow on the other side sometimes was used to operate a pump to drain the exposed bed.

Working Face: Any portion of a *claim* where development is underway.

Zinc: A crystalline metallic element that occurs abundantly in many minerals. Zinc is a micronutrient for many organisms, and is used as a protective coating for iron and steel. Absorption of zinc at high concentrations can be harmful.

8.3 GENERAL REFERENCES

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