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GLOSSARY AND ACRONYMS

Terms are defined within the context of this Environmental Impact Statement.

algal bloom: A sudden eruption of algae or cyanobacteria growth in water, which usually results from an excess of certain nutrients (e.g., nitrogen, phosphorous).

background: Refers to views beyond 1,500 feet and to the horizon.

chert: A fine-grained sedimentary rock that was often used as a raw material for prehistoric stone tools.

de-pyritization: The process of removing pyrite from the tailings, resulting in a tailings stream and concentrated pyrite stream.

deciview: the unit of visibility deterioration is the deciview (dV), with one dV being equivalent to a 10-fold change in atmospheric clarity.

foreground: Refers to views from zero to approximately 500 feet.

gossan: Intensely oxidized, weathered, or decomposed rock, usually the upper and exposed part of an ore deposit or mineral vein.

Isopleth: Model simulations using the AERMOD system produce diagrams that show the distribution of dispersed pollutants at ground level. These diagrams, termed “isopleth maps,” depict the distributions as a series of overlaid irregular contours onto a regional map. Isopleth maps somewhat resemble the effect of a topographic contour map, with outlines of the specific concentration levels serving the similar purpose as outlines of specific ground elevation on a topographic map.

mesic shrubs: Require a moderate amount of water to grow.

midden: A collection of branches, twigs, grasses, or leaves surrounding a nest.

middle-ground: Refers to views from approximately 500 to 1,500 feet.

mucking: Removing broken material from blast rounds.

Net Precipitation Transfer: This is made up of the net precipitation and runoff water, which together would be routed from the Process Water Pond to the mill. The net precipitation transfer would be treated at the Water Treatment Plant.

plugs: Massive concrete blocks confined by bulkheads at both ends used to completely fill a short segment of an open mine working. Grouting may accompany plug installation to minimize fracture flow around the plug and at the plug/bedrock interface.

pyrite: A yellow iron mineral.

Species of Concern: Species that are either known to be rare or declining, or declining due to the lack of basic biological information.

sub-wave base: Refers to below the wave base (i.e., the maximum depth at which a water wave’s passage causes significant water motion. For water depths deeper than the wave base, bottom sediments and the waterbody floor are no longer stirred by the wave motion above).

tailings: A fine-grained waste product from the mill.

void: The space from which the ore was removed.

°F	degree Fahrenheit
°C	degree Celsius
µg/m^3	microgram(s) per cubic meter
a.m.	ante meridian (morning and before noon)
AADT	average annual daily traffic
ABA	acid-based accounting
ACHP	Advisory Council on Historic Preservation
AES	Aquatic Ecological System
Al	aluminum
AMA	Agency Modified Alternative
amsl	above mean sea level
ANFO	ammonium nitrate/fuel oil (explosive)
AP	acid potential
ARD	acid rock drainage
ARM	Administrative Rules of Montana
As	arsenic
ASTM	ASTM International
Ba	barium
$Ba_3(AsO_4)_2$	barium arsenate
BACI	Before, After, Control (upstream and offsite reference) and Impact (within and downstream)
BACT	Best Available Control Technology
BBF	Black Butte Fault
Be	beryllium
bgs	below ground surface
BHP	Broken Hill Proprietary Company Limited
Big Sky Acoustics	Big Sky Acoustics, LLC
BLM	U.S. Bureau of Land Management
BMP	best management practice
C	Coon Creek code in sampling site
Ca	calcium

$CaCO_3$	calcium carbonate
CAA	Clean Air Act
CAI	Cominco American Inc.
CAPS	Crucial Areas Planning System
Cd	cadmium
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
Cl	chlorine
Co	cobalt
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalents
COC	contaminants of concern
Cr	chromium
Cr_2O_3	chromium(III) oxide
CTF	Cemented Tailings Facility
Cu	copper
$Cu_3(As,Sb)S_8$	chalcopyrite and tennantite
$CuFeS_2$	chalcopyrite
CWA	Clean Water Act
CWP	Contact Water Pond
dB	decibel(s)
dBA	A-weighted decibel(s)
dBC	C-weighted decibel(s)
DEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources and Conservation
DO	dissolved oxygen
DS, D/S	downstream
E. Coli	*Escherichia coli*
EBT	juvenile brook trout

EIS	Environmental Impact Statement
ELG	Effluent Limit Guidelines
EPT	Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies)
F	fluorine
Fe	iron
FeS_2	Pyrite and/or marcasite
FLM	federal land manager
FR	Forest Road
FWP	Fish, Wildlife & Parks
G	gossan
gal	gallon
GHG	greenhouse gas
gpm	gallon per minute
H_2SO_4	sulfuric acid
HAP	hazardous air pollutants
HBI	Hilsenhoff Biotic Index
HCT	humidity cell test
HDPE	High Density Polyethylene
HELP	Hydrologic Evaluation of Landfill Performance
Hg	mercury
hhs	human health standard
HNO_3	nitric acid
hp	horsepower
HRMIB	Hard Rock Mining Impact Board
HSU	hydrostratigraphic unit
I-90	Interstate 90
ICP	inductively coupled plasma
IG	Igneous Dykes
ILF	In-Lieu Fee Program
IPaC	Information for Planning and Consultation

JD	Jurisdictional Determination
K	hydraulic conductivity
K	potassium
km	kilometer
kW	kilowatt
lb	pound(s)
LCZ	Lower Copper Zone
L_d	daytime sound level
L_{dn}	day-night average sound level
LECO	Laboratory Equipment Corporation
L_{eq}	equivalent noise levels
$L_{eq}(h)$	existing peak hour sound level
L_n	nighttime sound level
LOS	Level of Service
L_{peak}	unweighted instantaneous peak noise level
LS	Little Sheep Creek Code
LSA	Local Study Area
LST	Little Sheep Creek Tributary Code
LSZ	Lower Sulfide Zone
LZ FW	lower sulfide zone footwall
MAAQS	Montana Ambient Air Quality Standards
MAQP	Montana Air Quality Permit
MBAC	Montana Business Assistance Connection
MCA	Montana Code Annotated
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
Mg	magnesium
mg/kg	milligrams per kilogram
mg/L	milligram per liter
mg/m^2	milligram per square meter
mm	millimeter

MMI	multi-metric indices
MMRA	Metal Mine Reclamation Act
Mn	manganese
MO	Moose Creek code
MOP	Mine Operating Permit
MPDES	Montana Pollutant Discharge Elimination System
mph	miles per hour
MRL	Montana Rail Link
MT	metric tonne
MTNHP	Montana Natural Heritage Program
MVE	million vehicles entering
N	nitrogen
N/D	non-detect
Na	sodium
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NAG	net acid generation
NCWR	Non-Contact Water Reservoir
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
Ni	nickel
$[Ni,Co]_3S_4$	siegenite
NO	nitric oxide
NO_2	nitrogen dioxide
NO_3	nitrate, nitric acid
NOx	nitrogen oxides
NP	neutralization potential
nPAG	non-Potentially Acid Generating
NR	not reported
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

NSPS	New Source Performance Standards
NSR	New Source Review
P	phosphorus
p.m.	post meridian (afternoon and evening)
PAG	Potentially Acid Generating
PAH	polycyclic aromatic hydrocarbons
Pb	lead
PFC	Proper Functioning Condition
pH	potential hydrogen
PHREEQC	pH-Redox-Equilibrium
PIT	passive integrated transponders
PM	particulate matter
PM_{10}	particulate matter up to 10 micrometers in diameter
$PM_{2.5}$	particulate matter up to 2.5 micrometers in diameter
ppb	parts per billion
ppm	parts per million
Project	Black Butte Copper Project
Proponent	Tintina Resources Inc.
PSD	Prevention of Significant Deterioration
PWP	Process Water Pond
Qal	Quaternary Alluvial Deposits
RICE	reciprocating internal combustion engine
RM	river miles
RO	reverse osmosis
RSA	Regional Study Area
RV	recreational vehicle
RW	riparian and wetland
s.u.	standard unit (pH)
Sandfire	Sandfire Resources America Inc. (formally Tintina Resources Inc.)
Sb	antimony
SC	Sheep Creek code

Se	selenium
SH	Sheep Creek code
SHPO	State Historic Preservation Office
Si	silicon
SIL	significant impact level
SM	Smith River code
SM	stream mile
SO_2	sulfur dioxide
SO_4	sulfate
SOC	Species of Concern
SP	undeveloped spring
SPLP	synthetic precipitation leachability procedure
Sr	strontium
$SrCO_3$	strontianite
$SrSO_4$	celestine
SW	surface water
SWPPP	Storm Water Pollution Prevention Plan
T&E	threatened and endangered
TBELs	Technology-based Effluent Limitations
TDI	trophic diatom index
Tgd	tertiary sill-form granodiorite intrusive rocks
Tl	thallium
TMDL	total maximum daily load
TN	Tenderfoot Creek code
TOC	total organic compound
tph	tons per hour
tpy	tons per year
TWSP	Treated Water Storage Pond
U	uranium
U.S.	United States
UCZ	Upper Copper Zone

UIG	Underground Infiltration Gallery
UMOWA	Upper Missouri Watershed Alliance
US, U/S	upstream
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USZ	Upper Sulfide Zone
VMT	vehicle miles traveled
VOC	volatile organic compound
VVF	Volcano Valley Fault
WEG	wind erodibility group
WESTECH	WESTECH Environmental Services, Inc.
WET	whole effluent toxicity
WQBELs	Water Quality-based Effluent Limitations
WRS	Waste Rock Storage
WTP	Water Treatment Plant
WW	wetted width
Ynl	Lower Newland Formation subunit
Ynl A	Upper Newland Formation subunit above the USZ
Ynl B	Lower Newland Formation subunit below the USZ
Ynl Ex	bedrock zones of the Lower Newland Formation
Ynu	Upper Newland Formation subunit
yr	year
Zn	zinc