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ITEM 24

## CANDELARIA—SILVER

Alternate names: Candelaria Partners Mine and Plant  
Pit names: Lucky Hill, Mt. Diablo, Northern Belle

Commodities: Ag, Au

## LOCATION-OWNERSHIP

County ..... Mineral.  
Mining district ..... Candelaria.  
Elevation ..... 1,731 m.  
Topography ..... Hilly.  
Domain ..... Mixed; private and BLM administered.

General location ..... About 80 km south of Hawthorne.  
Meridian ..... Mount Diablo.  
Tract ..... Sec. 3, T 3 N, R 35 E.  
Latitude ..... 38°09'32" N.  
Longitude ..... 118°05'11" W.

Owner-operator ..... NERCO Metals, Inc., Fairbanks, AK (subsidiary of Pacific Power & Light Co., Portland, OR) (1984).  
Owner ..... CoCa Mines, Inc., Denver, CO (owns 37% limited partnerships) (1984).

## GEOLOGY

Type of ore body ..... Disseminated, veins parallel to bedding.  
Origin ..... Hydrothermal.  
Shape of ore body ..... Tabular.  
Ore controls ..... Fracturing.  
Strike and dip of ..... N 45° E: 40° to 60° N.  
mineralized zone.  
Age of mineralization ..... Early Cretaceous.  
Mineralized zone average dimensions, m:  
Length ..... 1,230.  
Width ..... 40.  
Thickness ..... 130.  
Open pit depth ..... 90 to 120.  
Mineral names ..... Limonite, jarosite, gold, jamesonite, pyrite, chalcocopyrite (minor), galena (minor), clays, dolomite.

Host formation ..... Candelaria.  
Geologic age ..... Triassic.  
Rock relationships ..... Shale (tuffaceous), serpentinite, contains ore.  
Alteration ..... Silicification, dolomitization.  
Size ..... Medium.

## DEVELOPMENT

Current status ..... Active-producer.  
Type of operation ..... Surface, heap leach.  
Mining method ..... Open pit (2,400,000-t/a ore capacity; 32,600-t/d ore plus waste of which 9,300 t is recovered ore).  
Year of discovery ..... 1863.  
Discovery method ..... Surface outcrop.  
Initial production ..... August 1980 by Occidental;  
August 1983 by NERCO.  
Last production ..... June 1982 by Occidental; ongoing production by NERCO.  
Past production ..... 8,389 kg Ag (1980) (165).  
52,100 kg Ag, >286 kg Au (1981) (165, 764).  
Annual production rate ..... About 53,000 kg Ag (1.7 million tr oz) and 280 kg Au (9,000 tr oz) produced between April and September.

Distance to water supply ... 8 km to two 300-m wells.  
Road requirement ..... About 10 km, county road improved.  
Distance to power supply ... 14 km, 69-kV power.  
Mill location ..... On-site.  
Mill status ..... Active.  
Milling method ..... Agglomeration, cyanide heap leach, Merrill-Crowe zinc dust precipitation.  
Mill feed capacity ..... 7,300-t/d heap leach facility.  
Product type ..... Dore bullion (34-kg buttons).

## PUBLISHED RESERVES-RESOURCES

Class	Quantity	Grade	Year	Reference
1..Proven .....	12 to 13,000,000 tons	3.15 tr oz/ton Ag and 0.002 tr oz/ton Au .....	1980	158
2..Not reported in reference .....	18,500,000 tons .....	1.09 tr oz/ton Ag (with gold byproduct) .....	1982	423

## REFERENCES

48, 82, 83, 90, 92, 133, 158, 165, 197, 208, 300, 305, 378, 412, 423, 427, 436, 440, 491, 498, 540, 598, 599, 649, 655, 688, 691, 763, 764, 776, 777.

USGS quad maps ..... Walker Lake, 1:250,000.  
Candelaria, 7.5'.  
USBM sequence number ..... 0320210476.  
Mid number ..... 2601511.

Comments: The Candelaria Mine is the largest open pit silver mine in the United States. NERCO plans 5,000-ton/d mine rate (1.6 million tr oz) Ag production. A deeper ore body of massive sulfide nature has been tentatively recognized.



**Information Circular 9035**

# **Principal Deposits of Strategic and Critical Minerals in Nevada**

**By N. T. Lowe, Russell G. Raney, and John R. Norberg**



**UNITED STATES DEPARTMENT OF THE INTERIOR**  
**Donald Paul Hodel, Secretary**

**BUREAU OF MINES**  
**Robert C. Horton, Director**