



Supplemental road log 2: From Cuba to Nacimiento Copper mine

Spencer G. Lucas and Thomas E. Williamson
1992, pp. 71. <https://doi.org/10.56577/FFC-43.71>

in:
San Juan Basin IV, Lucas, S. G.; Kues, B. S.; Williamson, T. E.; Hunt, A. P.; [eds.], New Mexico Geological Society
43rd Annual Fall Field Conference Guidebook, 411 p. <https://doi.org/10.56577/FFC-43>

This is one of many related papers that were included in the 1992 NMGS Fall Field Conference Guidebook.

Annual NMGS Fall Field Conference Guidebooks

Every fall since 1950, the New Mexico Geological Society (NMGS) has held an annual [Fall Field Conference](#) that explores some region of New Mexico (or surrounding states). Always well attended, these conferences provide a guidebook to participants. Besides detailed road logs, the guidebooks contain many well written, edited, and peer-reviewed geoscience papers. These books have set the national standard for geologic guidebooks and are an essential geologic reference for anyone working in or around New Mexico.

Free Downloads

NMGS has decided to make peer-reviewed papers from our Fall Field Conference guidebooks available for free download. This is in keeping with our mission of promoting interest, research, and cooperation regarding geology in New Mexico. However, guidebook sales represent a significant proportion of our operating budget. Therefore, only *research papers* are available for download. *Road logs*, *mini-papers*, and other selected content are available only in print for recent guidebooks.

Copyright Information

Publications of the New Mexico Geological Society, printed and electronic, are protected by the copyright laws of the United States. No material from the NMGS website, or printed and electronic publications, may be reprinted or redistributed without NMGS permission. Contact us for permission to reprint portions of any of our publications.

One printed copy of any materials from the NMGS website or our print and electronic publications may be made for individual use without our permission. Teachers and students may make unlimited copies for educational use. Any other use of these materials requires explicit permission.

This page is intentionally left blank to maintain order of facing pages.

SUPPLEMENTAL ROAD LOG 2, FROM CUBA TO NACIMIENTO COPPER MINE

SPENCER G. LUCAS and THOMAS E. WILLIAMSON

Mileage

- 0.0 Start at intersection at NM-126 and NM-44 in Cuba, New Mexico (in front of Young's Hotel). Proceed east on NM-126. **0.5**
- 0.5 Intersection; **turn right** to continue on NM-126. **0.4**
- 0.9 Good view of Mesa de Cuba across valley at 2:00-3:00. **0.6**
- 1.5 Buff crossbedded sandstone to right of highway is Paleocene Ojo Alamo Sandstone for next 0.6 mi. **0.6**
- 2.1 Road drops into Cretaceous Fruitland-Kirtland Formations. **0.3**
- 2.4 Fruitland-Kirtland Formations crop out to left and right of road. **0.5**
- 2.9 Roadcuts in Cretaceous Lewis Shale (Point Lookout Sandstone does not form a cuesta here). **0.7**
- 3.6 Lewis Shale outcrops. **0.5**
- 4.1 Note Lewis Shale to right of road. **0.4**
- 4.5 Cretaceous Mesaverde Group forms steeply dipping hogback. **0.3**
- 4.8 Road is on Cretaceous Mancos Shale. Note spoil (red talus) from copper mine ahead and to left of road. **0.3**
- 5.1 Reverse-dipping Mesaverde Group (dips east). **0.1**
- 5.2 Purple, white and yellow beds up hill to right are Jurassic Morrison and Entrada Formations. Beds are poorly exposed and extensively faulted. **0.2**
- 5.4 Cattle guard; enter Santa Fe National Forest. Red beds (mudstones) to left are Triassic Petrified Forest Formation, Chinle Group. **0.2**
- 5.6 Tan crossbedded sandstones on left are Triassic Poleo Formation (Chinle Group). **0.1**
- 5.7 Purple muds on left are Salitral Formation of Chinle Group. **0.1**
- 5.8 Paved road to left; **turn left** to enter mine. Up highway to east is Triassic Agua Zarca Formation of Chinle Group (tan-brown sandstone cliff) above reddish-brown fine-

grained sandstones and siltstones of Permian Yeso Formation. **0.1**

- 5.9 Cross cattle guard; enter mine. **0.1**
- 6.0 Road to left leads to mine office. Go straight; outcrop on right is of mud-dominated Salitral Formation. **0.3**
- 6.3 Road forks; **go left** and stop at turnaround to discuss mine. The copper mine is developed in the steeply dipping sandstones of the Upper Triassic Agua Zarca Formation of the Chinle Group (Fig. S2.1). This deposit was mined by open-pit methods to a depth of about 2400 ft north-south by 300 ft east-west. Large petrified logs (*Araucarioxylon?*) have been replaced by chalcocite, as have carbonaceous chunks of fossil wood. Woodward (1987) summarized earlier studies of the genesis of the copper deposits here and concluded the copper was derived from an older deposit (Precambrian?) and precipitated around and through the reducing environment provided by the decaying logs during the Late Triassic.

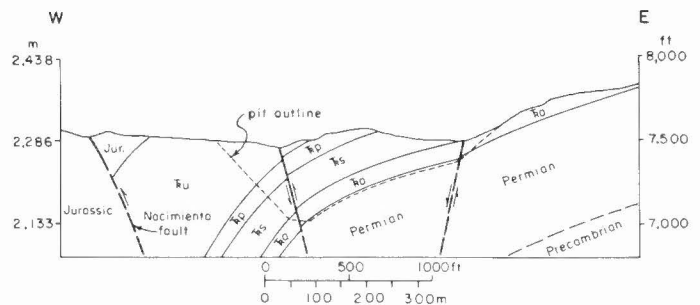
End of Supplemental Road Log 2.

FIGURE S2.1. East-west cross section through Nacimiento open pit showing geology prior to excavation. Symbols for formations of Chinle Group are: TRa = Agua Zarca Sandstone; TRs = Salitral Shale, TRp = Poleo Sandstone, TRu = upper shale (from Woodward, 1987).



Aerial view from an elevation of approximately 10,500 feet of The Hogback north of U.S. Highway 550. The Hogback is a resistant ridge of Upper Cretaceous Mesaverde Group strata that marks the western edge of the San Juan Basin. The San Juan River is visible at the bottom of the photograph. Taken the morning of 13 April 1992. Copyright © Paul L. Sealey, 1992.