Supplemental road log: From Hachita to Columbus and Deming

Russell E. Clemons
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SUPPLEMENTAL ROAD LOG, FROM HACHITA TO COLUMBUS AND DEMING

R. E. CLEMONS
New Mexico State University, Las Cruces, New Mexico 88003

This supplemental log provides an alternate return route to Deming for the more adventurous types. It parallels the El Paso and Southwestern Railroad grade and the U.S.-Mexico border to Columbus and then goes north on NM-11 to Deming. It is about 20 mi longer than via NM-81 and I-10 and includes 16.6 mi of good all-weather gravel road.

Mileage

0.0 At junction NM-81 and NM-9 (mile 50.3 on Second-Day Road Log). Proceed east on NM-9 through Hachita business district. **0.1**

0.1 MP44 (from Arizona). **0.3**

0.4 Junction, **continue straight** on NM-9. NM-81 to right goes down Hachita Valley, through Hatchet Gap and down Playas Valley to Antelope Wells on the Mexico border. See Second-Day Road Log of 1970 NMGS Guidebook for geology along northern part of this route to the south.

Cattleguard. NM-9 parallels the EP & SW RR grade to Columbus. **1.7**

2.1 MP46. Flat Hill (1474 m) is the basalt-capped mesa from 9:00 to 11:00. Seager et al. (1984) reported a K-Ar age of 11.8 ± 0.3 my for a sample of the basaltic andesite from this mesa. Thin sections contain microphenocrysts of olivine (0.3–1.4 mm) in a groundmass of plagioclase, pale-brown augite, olivine and opaques ranging in size from 0.05 to 0.3 mm. The groundmass is subophitic to intergranular and microvesicular. Plagioclase ranges from andesine to labradorite (An_{45-55}). Minor carbonate occurs in irregular patches. **1.0**

3.1 MP47. Apache Hills from 2:00 to 3:00 with Apache Peak (1756 m) at 2:30. Most of the abandoned mines are in the eastern and southern foothills. Highway ahead crosses Gila Cgl of bajada built north from Apache Hills. **2.0**

5.1 MP49. Cedar Mtn Range from 8:30 to 11:00 (Fig. S:5.1). Deer Mtn (1675 m, on Continental Divide) at 8:45 is composed of probable middle Tertiary silicic volcanic rocks. Cedar Mtn (1899 m) at 9:00 is capped by hornblende andesite flows (Varnell, 1976). **1.9**

7.0 Pavement ends; enter Luna Co. Hat Top Mtn (1703 m) on northeast flank of Cedar Mtn Range at 9:00 is also capped by hornblende andesite flows. A northwest-trending frontal fault between here and the Cedar Mtn Range is covered, but the range appears to have been tilted northeastward 10–15 degrees. Bromfield and Wrucke (1961) and Varnell (1976) mapped several high-angle, northwest-trending faults within the range. Detailed mapping of the whole range is needed. It appears that the range is related to a northwest-trending vent zone; possibly another Laramide flaw. **0.4**

7.4 **Continue straight.** Road on left to Faulkner Ranch. Sierra Rica (1670 m) at 2:00. **0.7**

8.1 MP52. Sierra Alta (previously named Sierra de los Moscos and Sierra de las Palomas) from 1:00 to 1:30 in Mexico. This northwest-trending, southwest-tilted fault block contains about 2400 m of well-exposed upper Paleozoic strata (Diaz and Navarro, 1964). See paper in NMGS 1969 Guidebook by Wilson et al. for descriptions of microfacies in the Pennsylvanian and Wolfcampian rocks. **2.0**

10.1 MP54. Northeast end of Sierra Rica (on U.S.-Mexico border) visible from 2:00 to 3:00. The abandoned International mine is along a fault between U-Bar and Hell-to-Finish Fms on the eastern side of the range on the international border. It produced lead-silver ore sporadically between 1909 and 1947 (Griswold, 1961). **0.5**

10.6 Victorio Ranch headquarters. Flying W Mtn (1895 m) at 9:30 on crest of Cedar Mtn Range (Fig. S:10.6). Valiente Peak (1758 m) at 10:00. **2.5**

13.1 Road crosses Wamels Draw. Remnant of EP & SW RR trestle on left (Fig. S:13.1). Valiente Peak at 9:30. **1.0**

14.1 MP58. Sierra Alta from 1:00 to 2:30. **1.0**

15.1 MP59. Low foothills from 9:00 to 11:00 are Gila Cgl. **2.0**

17.1 MP61. Road curves left (east-northeast) ahead. Roadcuts for next 4 mi expose fine-grained fanglomerates believed to correlate with older parts of the Santa Fe Gp and Gila Cgl (Seager and Clemons, in press). Only 3.5 km to Mexico on right. **3.0**

20.1 MP64. Carrizalillo Hills from 12:00 to 3:00 (Fig. S:20.1). NM-9 passes through gap between the Cedar Mtn Range and Carrizalillo Hills. The gap was eroded in a brec-

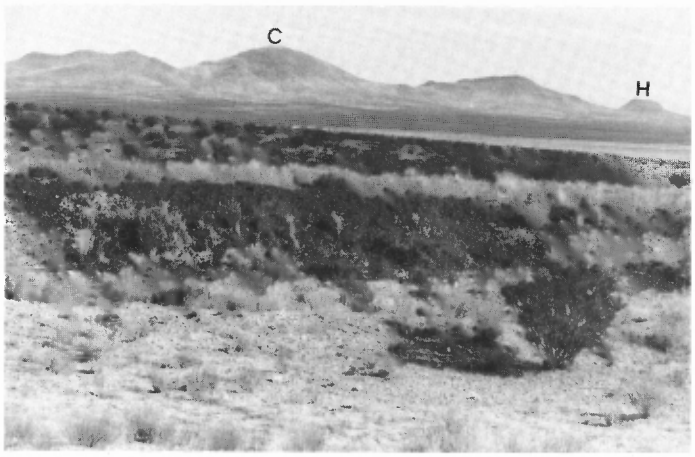

FIGURE S:5.1. Northwest end of Cedar Mtn Range; Cedar Mtn (C) and Hat Top Mtn (H).

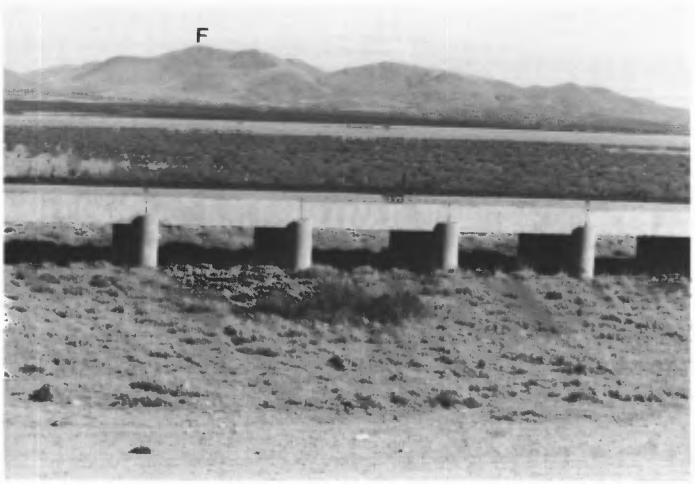

FIGURE S:10.6. Central Cedar Mtn Range with Flying W Mtn (F); EP & SW trestle in foreground.

FIGURE S:13.1. Southeast end of Cedar Mtn Range and Valiente Peak (V); EP & SW RR trestle ruins in foreground.

FIGURE S:20.1. Remnant of last road-logging attempt; Carrizalillo Hills in background.

ciated zone formed at the intersection of four major west- to northwest-trending fault zones. The Carrizalillo Hills contain about 914 m of exposed volcanic and volcaniclastic rocks of probable Oligocene age. These are overlain by about 400 m of fanglomerate and interbedded basaltic andesite (Seager and Clemons, in press). **1.0**

21.1 Roadcut exposes more upper Oligocene/lower Miocene(?) fanglomerate. **0.3**

21.4 More fanglomerate in roadcut. **0.3**

21.7 Water tank at 3:00, road curves left (north). **0.4**

22.1 MP66. Hermanas Gap from 12:00 to 1:00. Florida Mtns in distance at 1:00. Johnson Mtn (1523 m) at 2:30 is capped by an ash-flow tuff (Seager and Clemons, in press). **0.5**

22.6 Pavement begins; cattleguard; Joe Johnson Ranch on right. **0.3**

22.9 Crossing Baker Draw. Driveway to ranch and Carrizalillo Spring on left. **0.3**

23.2 One of many "quartz dikes" exposed on right. Most of the faults in this area are filled with quartz and carbonate minerals. Griswold (1961) described secondary copper minerals and gold associated with mineralization along these faults. Seager and Clemons (in press) state that exploration for precious metals was continuing in 1985. **1.3**

24.5 Cross Hermanas Draw. Water tank on left ahead is near junction of EP & SW RR grades of main line to El Paso and a branch to Deming (Fig. S:24.5a). Old Hermanas school house on right. Low hills both sides of road are mostly andesite flows. **Slow,** curve to right. Entering Hermanas: post office was established April 4, 1903 and discontinued July 31, 1925. Cattleguard, leaving Hermanas. **Continue on NM-9.** Road to left follows RR grade for about 53 km to Deming.

As EP & SW RR came east from Bisbee and Douglas, another crew began grading a line south from Deming during the summer of 1901. Rail laying started in the fall (Fig. S:24.5b). Construction trains could then operate from the Santa Fe and Southern Pacific lines in Deming. Connection with the SP was easy, but the SP line had to be crossed in order to connect with the SF. Construction of the EP & SW was nearly halted because 79 carloads of supplies came in on the SF, but SP wanted

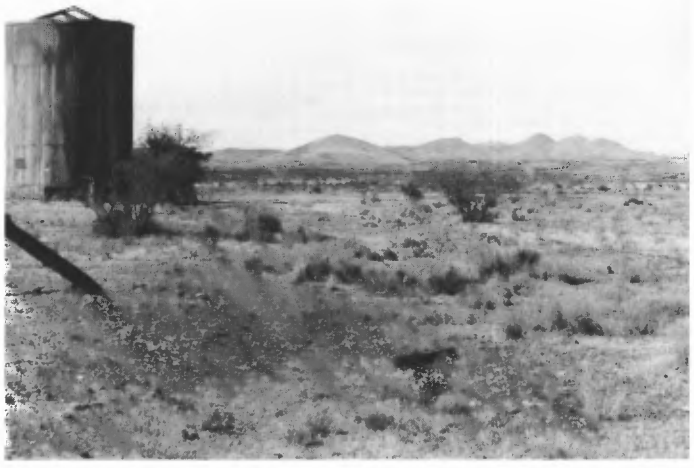

FIGURE S:24.5a. Hermanas water tank and southeast end of Cedar Mtn Range.

FIGURE S:24.5b. Track gang near Deming. Photo courtesy Museum of New Mexico. Neg. No. 14192.

a $5.00/car switching fee (considered an exhorbitant fee in 1901) to transfer the cars to the Hermanas branch line. Suspecting possible overt actions, SP placed guards along its tracks in Deming. Late at night on Nov. 5, 1901, Bill Darbyshire, EP & SW construction foreman, sent a couple of men several miles west of Deming. Acting as decoys they fired their guns and attracted the SP guards to come and investigate. Upon returning to Deming they found the crossing had been installed and the 79 cars of materials were on EP & SW tracks (Myrick, 1970). **0.6**

25.1 MP69. Tres Hermanas Mtns at 10:00. Low hills from 10:30 to 12:00 are mostly Pliocene basalt cones, plugs and flows. **1.4**

26.5 Highway curves right and then left as it crosses Hermanas Draw. Highway is on the surface of colluvium containing weak petrocalcic horizons. These fan deposits are generally considered to be late Pleistocene (0.4–0.1 my) in age (Seager and Clemons, in press). **1.0**

27.5 Cattleguard. Gravel road to right goes to several windmills. Sierra Boca Grande formerly Sierra de los Chinos (in Mexico) at 2:00, Sierra Alta at 3:00 beyond the Carrazalillo Hills. **0.6**

28.1 MP72. Cooke's Peak (north of Deming) at 9:00, Florida Mtns at 10:00, Tres Hermanas Mtns at 10:30, Sierra Boca Grande (1745 m) at 2:30 is an asymmetric, south-plunging anticline. About 750 m of Permian carbonates (mostly cherty dolostone) are exposed in the range (Diaz and Navarro, 1964). The Pemex Chino No. 1 well drilled at the southeast end of the range bottomed in Precambrian granitic gneiss at 4411 m (Thompson et al., 1978). **2.4**

30.5 Cross Simpson Draw just south of its confluence with Hermanas Draw. Malpais Hill at 12:30. **1.0**

31.5 Cattleguard. Highway curves left. Low hills from 9:00 to 1:00 are Pliocene basalt cones, plugs and flows. Seager et al. (1984) obtained a K-Ar age of 3.9 ± 0.2 my on a sample from the cone at 11:00. A thin section of the olivine basalt contains olivine (0.2–4.0 mm), minor hypersthene (0.2–0.7 mm) and augite (0.2–1.0 mm) microphenocrysts in an intergranular matrix of plagioclase, pyroxene, olivine and abundant opaques. The plagioclase laths (0.5–0.2 mm) are labradorite. A few corroded, angular fragments of more sodic plagioclase are probably xenocrysts. **1.2**

32.7 Road to right goes to Carzalia Valley Farms (cotton and onions). **2.4**

35.1 MP79. Black Top Hill, about 6.5 km distant at 9:00 (Fig. S:35.1), remnant of a basalt plug/flow complex. Seager et al. (1984) obtained a date on this rock of 5.2 ± 0.1 my. Thin sections of the olivine basalt contain phenocrysts of plagioclase (0.5–2.1 mm) and microphenocrysts of olivine (0.2–0.5 mm) and pyroxene (0.2–0.8 mm) in an intergranular groundmass of plagioclase, pyroxene, olivine and abundant opaques. Pyroxene phenocrysts are predominantly hypersthene, whereas the groundmass pyroxene appears to be mostly clinopyroxene. Plagioclase phenocrysts are zoned, and most have corroded margins. They are probably xenocrysts as suggested by their more sodic composition (An_{40}), whereas the alined, blocky groundmass laths are labradorite (An_{65}). **0.7**

35.8 Cattleguard. Sierra Bismarck at 2:00, Sierra Santa Rita at 2:30, southeast of Sierra Boca Grande. **1.0**

36.8 Cattleguard. Low, dark hills from 1:00 to 3:30 are part of the Palomas volcanic field (Frantes and Hoffer, 1982). **0.3**

37.1 MP81. **Caution,** winding highway ahead. These low hills consist mostly of Mimbres Fm cgls correlative with Santa Fe Gp and Gila Cgl (Balk, 1962). **2.0**

39.1 MP83. Low hills about 2 km distant at 9:00 and southeast end of Tres Hermanas Mtns beyond at 9:30 are silicic volcanic rocks (Balk, 1962). Florida Mtns at 10:00; West Potrillo Mtns from 11:00 to 1:00. **1.0**

40.1 MP84. Palomas, Mexico at 2:00. **0.4**

40.5 Cattleguard. All of the low hills and valleys from 2:00 to 4:00 are underlain by olivine basalt, andesite and trachyte of the Palomas volcanic field which covers about 2000 km^2 astride the border of New Mexico and Chihuahua (Frantes and Hoffer, 1982). Seager et al. (1984) obtained a K-Ar age of 3.0 ± 0.7 my on a sample on the border south of here. A thin section of this olivine basalt contains microphenocrysts of olivine (0.2–1.0 mm) and pyroxene (0.2–0.8 mm) in an intergranular matrix of plagioclase, pyroxene, olivine and abundant opaques. Plagioclase laths (less than 0.2 mm long) are sodic la-

FIGURE S:35.1. Black Top Hill and southwestern end of Tres Hermanas Mtns.

bradorite. One xenocryst of quartz (1.4 mm) has corroded borders with prominent reaction corona. **0.6**

41.1 MP85. Black Hill at 1:00 is Pliocene basalt. Camel Mtn (1429 m) beyond on skyline is in the southeastern corner of Luna Co. This area on the southwest side of the West Potrillo Mtns consists of small, complexly faulted and intruded outcrops of Paleozoic and Cretaceous rocks. About 10 km northwest of Camel Mtn, two exploration wells only 5 km apart were drilled during the early 1960s. In the shallower well to the east, Precambrian basement was encountered at a depth of 2003 m, compared to the depth of 2683 m in the deeper well to the west. In these wells, the lower Paleozoic section is complexly faulted, intruded and overlain unconformably by Tertiary volcanic rocks. Only minor shows of gas were reported. This subsurface control of the eroded Paleozoic section shows that the Mesozoic Burro uplift trend continues southeastward beneath the Columbus Valley.

Highway crossing lower part of bajada built southeastward from Tres Hermanas Mtns. Colluvium contains a few weak petrocalcic horizons and is probably late Quaternary. **2.0**

43.1 MP87. **Slow,** entering Columbus. Pancho Villa State Park (Fig. S:43.1a), site of Camp Furlong, is on right ahead. Flagpole stands on upper Pliocene basalt hill. Columbus (1239 m), founded in 1891, was named by early settlers after Columbus, Ohio. The town has been designated as a National Historical Landmark (Clemons et al., 1980). Columbus is the site of the famous raid across the border by Pancho Villa. On the night of March 10, 1916, Villa and his men entered Columbus to do their bloody work. When they left, 17 local people were dead, including 8 soldiers and nine civilians. The town of Columbus was badly damaged. The Mexican force suffered heavy casualties, perhaps as many as 125 killed. General Pershing, then on duty along the Mexican border, organized an expedition to hunt down Villa and his men. Pershing and a U.S. military unit spent three months inside Mexico, only to return empty-handed. The EP & SW and SP railroads operated extra trains to carry troops and supplies to and from the conflict with Villa (Fig. S:43.1b). The SP alone ran 42 troop trains after the hostilities ceased, to return 11,285 men to home bases (Leonard, 1981). **1.0**

FIGURE S:43.1b. N.M. National Guard at Columbus following Pancho Villa raid. Photo by W. H. Horne Co. Courtesy Museum of New Mexico. Neg. No. 5793.

44.1 Junction with NM-11 (Fig. S:44.1). **Turn left** (north) and cross EP & SW RR grade; Palomas, Mexico is about 5 km to the south. **0.8**

44.9 MP4 (from Mexico). West Potrillo Mtns from 2:30 to 3:30 are Quaternary basalt cinder cones and flows (Hoffer, 1976). **0.7**

45.6 Cattleguard, **continue straight.** Road on right. **1.7**

47.3 Hacienda Sur Luna on right; a retirement colony with an airpark. **1.6**

48.9 MP8. South peak at 1:00, Gym Peak at 1:30 in southern Florida Mtns (Fig. S:48.9). The Columbus Valley (1207 m), the broad plain between here and the West Potrillos, is a Quaternary bolson formed in a later Tertiary structural depression on the east side of the Tres Hermanas-Florida uplift. **3.0**

51.9 MP9. Tres Hermanas Mtns at 9:00 (Fig. S:51.9) are erosional remnants of Eocene quartz monzonite stocks intruded into upper Paleozoic sedimentary rocks. North Peak is the highest at 1709 m. Greasewood Hills at 11:00 are composed of middle Tertiary rhyolite and latite flows, breccias and tuffs. Mineralization was widespread in the northern parts of the Tres Hermanas Mtns. Early mining was from small fissures of silver, lead and gold. Later, zinc was mined from veins and replacement bodies in the carbonate rocks. The principal ore mineral was willemite with minor zincite, hemimorphite, smithsonite

FIGURE S:43.1a. Pancho Villa State Park.

FIGURE S:44.1. EP & SW RR station now the Columbus Historical Museum.

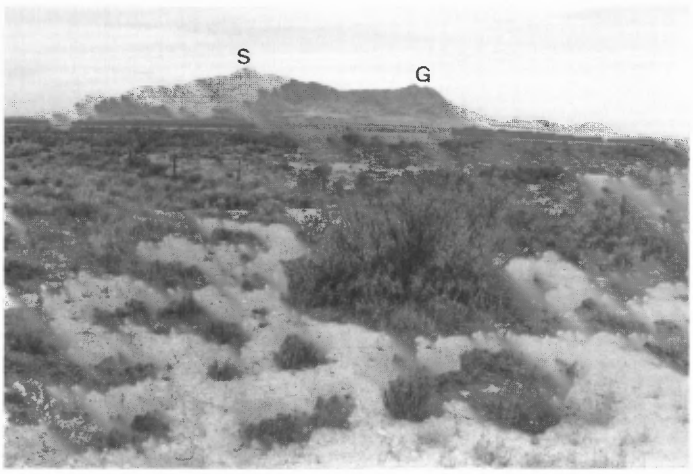

FIGURE S:48.9. Southern end of Florida Mtns with South Peak (S) and Gym Peak (G).

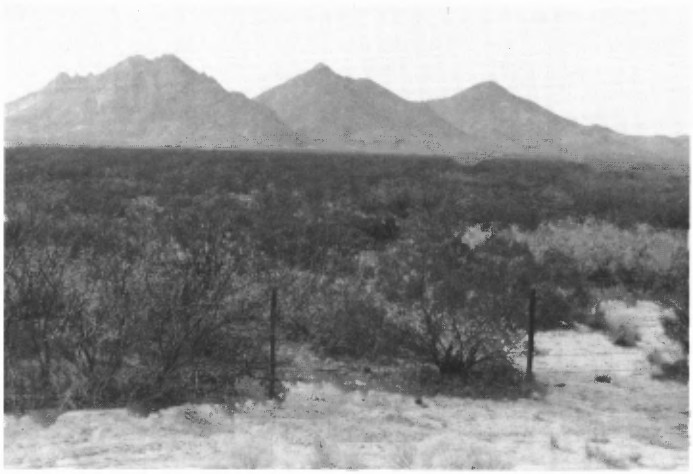

FIGURE S:51.9. Tres Hermanas Mtns: south, middle and north peaks from left to right.

and hydrozincite (Wade, 1913), suggesting original mineralized zone was metamorphosed prior to development of the oxidized zone (Homme and Rosenzweig, 1970). **2.0**

53.9 MP11. Well developed bajada around southern end of Florida Mtns from 12:00 to 3:00. Small conical hill at 2:00 is a basalt plug. Its age is unknown, but probably is Pliocene and related to basalts of the Palomas field. **1.4**

55.3 Bridge over Seventysix Draw. **1.6**

56.9 MP14. Junction with NM-495 on left. Site of Waterloo, NM is about three km west of here. Its post office was established Dec. 6, 1911, but service was discontinued Oct. 31, 1922, eight years before this author was born in Waterloo, NH. **1.0**

57.9 MP15. Basalt plug at 3:15 may have been intruded along a buried northwest-trending fault that dropped the Tres Hermanas Mtns block down relative to the Florida Mtns block. **1.0**

58.9 MP16. Spectacular alluvial fans developed around southwest end of Florida Mtns from 1:00 to 3:00. **1.0**

59.9 MP17. Cedar Mtn Range at 9:00. Midway Butte in valley at 9:00 is Tertiary andesite. **1.2**

61.1 Highway curves left. Red Mtn at 12:02, Cooke's Peak at 1:30, Sierra Alta at 9:00, Big Hatchet Peak in far distance at 9:15. **4.2**

65.3 Junction, NM-517 to the left. Highway curves right (north). **0.6**

65.9 MP23. Florida Mtns from 2:00 to 4:00. **3.2**

69.1 Junction, NM-332 to the left. **2.9**

72.0 Junction, NM-490 to the left. Snake Hills at 9:00, Florida Gap at 3:00. **1.0**

73.0 Junction, road to Rock Hound and Spring Canyon Parks on right. **2.0**

75.0 Junction, NM-497 to the left. **1.9**

76.9 MP34. Stop sign.

End of Supplemental Road Log.