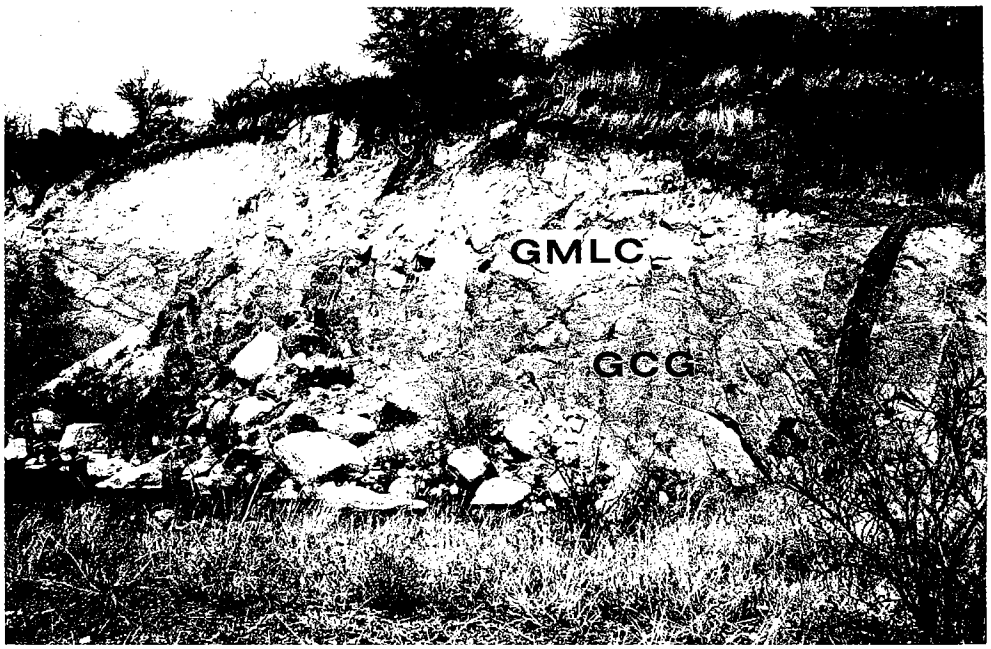

Figure 83. Glen Creek Gabbro Member (*GCG*) of Roosevelt Gabbros intrusive into the M Zone of the Glen Mountains Layered Complex (*GMLC*) in SE¼SW¼NE¼ sec. 14, T. 4 N., R 17 W., Kiowa County. Excavated face is about 10 m high. Note Cold Springs Breccia dike on right side.

layered and locally variable is unclear. Either very large samples (about 1 m^3) or samples taken from a well-defined sequence of layers seem necessary for adequate characterization at the outcrop scale. Nevertheless, they are presented for reference and do show how Al_2O_3-rich these anorthositic gabbros are.

A brief summary of events affecting the rocks of Stop 1 yields:

Youngest
8. Deep Permian weathering along regional fractures during burial in shale.
7. Regional Pennsylvanian fracturing and faulting.
6. Later faulting (Cambrian to Pennsylvanian?).
5. Intrusion by late diabase.
4. Formation of the Cold Springs Breccia and intrusion by related granitoids and Otter Creek Microdiorite, with some local faulting along dikes.
3. Selective recrystallization of the Glen Mountains Layered Complex near the contact and (or) formation of basic pegmatoid pods.
2. Intrusion by the Glen Creek Gabbro.
1. Formation of L and M Zones of the Glen Mountains Layered Complex.

A summary of features in the pit area is given in table 21.

Glen Creek Gabbro

The Glen Creek Gabbro is demonstrably intrusive into the older Glen Mountains Layered Complex (both the L and M Zones) and in turn is intruded by narrow dikes and "sills" of Cold Springs Breccia, granitoid, and late diabase. Although a logical first assumption is the correlation of the granitoid dikes with the Wichita Granite Group, another possibility must be considered. In the exposures of Glen Creek Gabbro, and in exposures to the west in the SE¼ sec. 15, T. 4 N., R. 17 W. where the Cold Springs Breccia intrudes the Glen Mountains Layered Complex, the intimate association of granitoid dikes and breccia intrusions, and the close resemblance of the dikes to the granitoid phase of the Cold Springs Breccia, strongly suggest a genetic relationship. Correlation of the pink granitic phase of the Cold Springs Breccia with any particular unit of the Wichita Granite Group is uncertain. Substantial exposures of Wichita Granite nearest to the principal occurrences of the Cold Springs Breccia are more than 5 km to the north. These granite occurrences were mapped as Lugert Granite by Taylor (1915), as Mount Scott Granite by Merritt (1967), and are now called Cooperton by Myers and others (1981). The pink granite in and associated with the Cold Springs Breccia, however, has a higher plagioclase content than the Wichita granites. The significance of this distinc-