Introduction

An examination of the perimeter of Byron Wilson’s basement provides the basis to explain some mapping problems, theories of fragipan development, and a hypothesis for the chert line that overlies a red limestone residuum generally containing chert in Trigg, Lyon, and other counties in the limestone area of western Kentucky.

The area around the basement is mantled with loess which ranges from 29 inches to 74 inches in thickness. A fragipan was found at depths of 16 to 44 inches below the surface. The fragipan was compact, brittle, and a silt loam texture except for some gray streaks which were silty clay loam. A chert line averaging about 8 inches in thickness was present in some places below the loess. The chert line was a yellowish brown (10YR 5/6) very cherty silt loam with about 35% chert fragments that ranged in size from one-fourth to two and a half inches on the long axis. There was much black staining on the chert fragments. Where there was no fragipan in the loess the chert line was compact and brittle. Below the chert line or below the loess where there was no chert line, there was a cherty red silty clay with yellow or pale brown variegations. The chert ranged in size from 1 to 5 inches on the long axis and much of it was nodular. The percentage of chert ranged from little or none in some places to 25% in other parts but averaged about 15%. In the area there was also a natural drain that started 30 ft north of the basement.

Mapping Problems

The main mapping problem is whether to map a soil with a fragipan (Lyon-Trigg field name Nicholson silt loam, legend number 78) or a soil

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