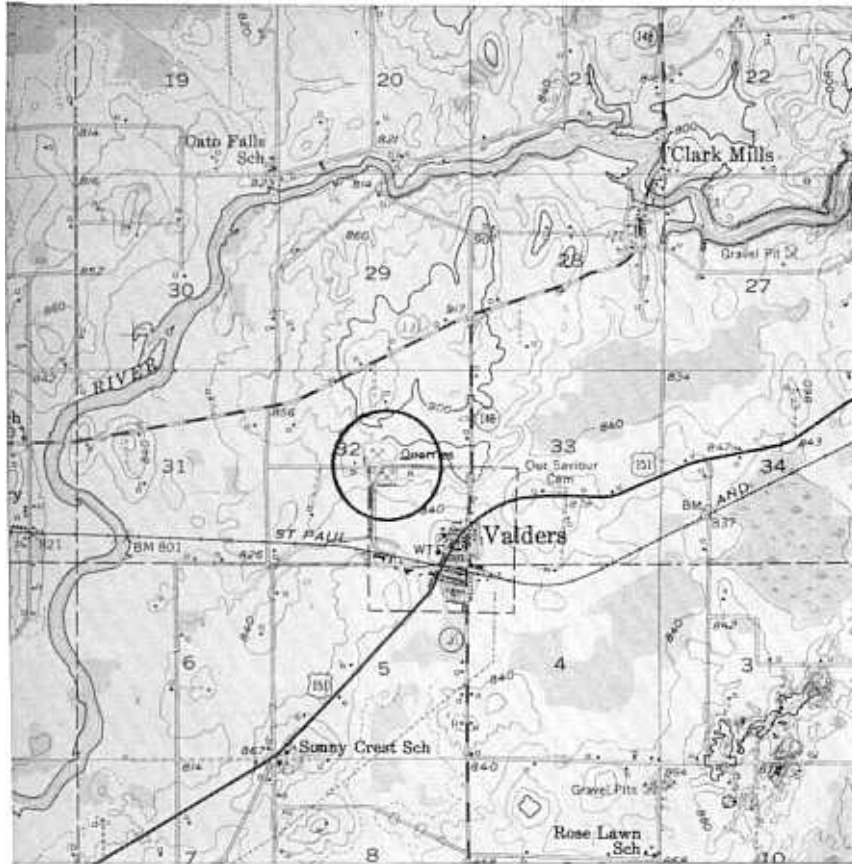


Title: Valders Quarry

Location: SW 1/4, NW 1/4 Sec. 32, T. 19 N., R. 23 E., Reedsville 15' Quadrangle, Manitowoc County. The approach should be from dirt road west off Hwy. 148 less than 1/2 mile N. of Hwy. 151 at crest of hill. Drive to edge of area that has been stripped and walk to north. Edge of quarry is very unstable! Groups should obtain permission from Valders Lime and Stone Co., just south of quarry.



Author: David M. Mickelson

Description: Excellent striations on the Silurian dolomite are preserved. The striations were cut by rocks included in the base of the glacier which smoothed and scratched the bedrock surface. Along the north edge of the quarry in a location difficult to get to is a buff, sandy till of mid-Woodfordian age. Beneath this till is one set of striations with a trend nearly north-south. In other parts of the quarry, red, clayey till is atop the dolomite and two sets (north-south and east-west) of striations are present.

Significance: Clearly, because only the north-south set underlies the oldest till and both sets of striations underlie the younger, the striations indicate first ice advance from the north, then ice advance from the east. The red till is called the "Valders till" (Thwaites, 1943). It was assumed by Thwaites and others that this till was equivalent in age to that above the Two Creeks Forest Bed (see description). Evenson (1973; et al., 1976), Mickelson and Evenson (1975), have argued against this idea because of geomorphic arguments and depth of leaching. Acomb (1978) supports Evenson with clay mineral studies which show that this till lies stratigraphically beneath the Forest Bed.

References: Alden, 1918; Black, 1971; Thwaites, 1943; Thwaites and Bertrand, 1957.