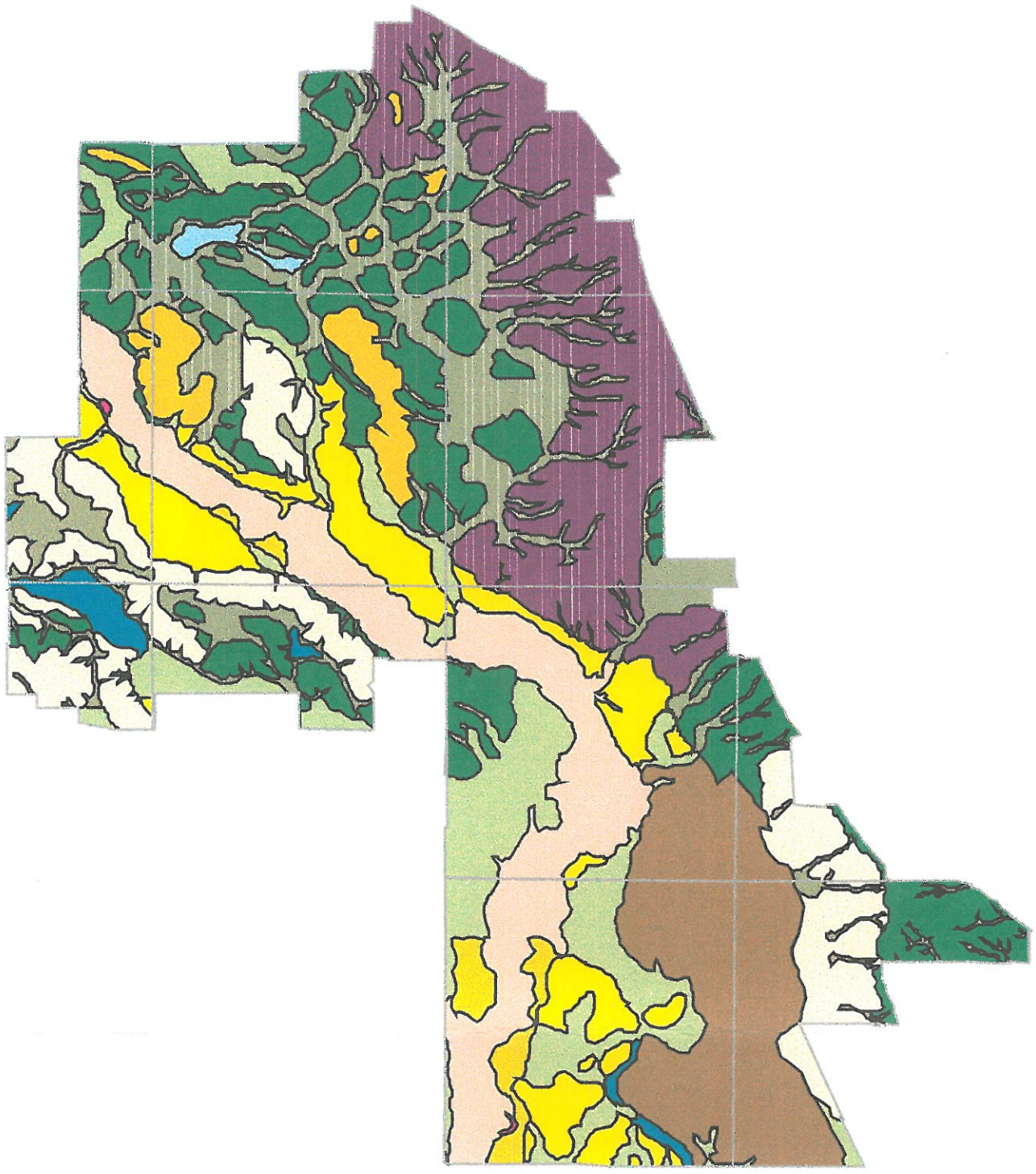
Camp Dodge Surficial Geology

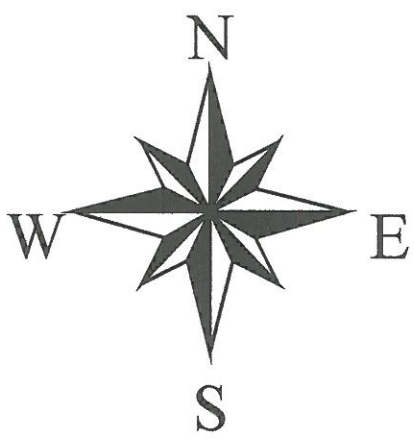


0.6 0 0.6 1.2 Miles

section line

Map Units

- dm/a
- Dm/Pp
- Dpk/a
- Dlm/a
- NC/Da
- P/Dm
- Df/Dm
- DfF/NC
- Dfp
- Dft
- Dw
- Do
- NC/Pp



OFM-99-2

LEGEND
Description of Mapping Units

Hudson Episode

DeForest Formation

DF/Dm- DeForest Formation undifferentiated over Dows Formation Morgan Member: One to three meters of weakly stratified to massive, calcareous to non-calcareous loam, clay loam and sandy loam alluvium, often with a thin basal pebbly sand zone (DeForest Formation undifferentiated) over calcareous, reduced to unoxidized stratified to weakly bedded friable loam diamicton with sandy loam and loamy sand interbeds (Morgan Member). Where this mapping unit passes through the Dm/Pp mapping unit Pennsylvanian bedrock may occur within 5 meters of the land surface.

DFf/NC- DeForest Formation undifferentiated over Noah Creek Formation: one to three meters of weakly stratified to massive, calcareous to non-calcareous loam, clay loam and sandy loam alluvium (DeForest Formation undifferentiated) over oxidized, calcareous pebbly sand to cobble gravel (Noah Creek Formation). The Noah Creek Formation usually overlies Dows Formation glacial diamicton (Morgan or Alden Member) within three to four meters of the land surface in this mapping unit.

DFp- DeForest Formation undifferentiated – floodplain: One to three meters of weakly stratified to massive, calcareous to non-calcareous loam, clay loam and sandy loam alluvium (DeForest Formation undifferentiated) over oxidized, calcareous pebbly sand to cobble gravel (Noah Creek Formation). The Noah Creek Formation usually overlies Dows Formation glacial diamicton (Morgan or Alden Member) within three to four meters of the land surface in this mapping unit. This mapping unit occurs along the floodplain of Beaver Creek. This area is prone to frequent flooding and is covered by variable amounts of post-settlement alluvium (Camp Creek Member of the DeForest Formation).

DFt- DeForest Formation undifferentiated – terrace: One to three meters of weakly stratified to massive, calcareous to non-calcareous loam, clay loam and sandy loam alluvium (DeForest Formation undifferentiated) over oxidized, calcareous pebbly sand to cobble gravel (Noah Creek Formation). The Noah Creek Formation usually overlies Dows Formation glacial diamicton (Morgan or Alden Member) within three to four meters of the land surface in this mapping unit. This mapping unit occupies a low terrace along Beaver Creek Valley and contains prehistoric alluvium (Roberts Creek and Gunder members of the Deforest Formation).

Dw- DeForest Formation Woden Member: Two to six meters of stratified peat, muck, and organic-rich silt, clay and sand. This mapping unit is seasonally to permanently covered by water and supports wetland vegetation.

Do- DeForest Formation Okoboji Member: Two to three meters of stratified organic-rich silt, clay, loam, and sand. Contains significant amounts of post-settlement alluvium and is flooded seasonally.

Wisconsin Episode

Dows Formation

Dm/a-- Dows Formation, Morgan Member over Alden Member: two to four meters of calcareous, mostly oxidized, stratified to weakly bedded friable loam diamicton with sandy loam and loamy sand interbeds (Morgan Member), over dense, calcareous, unoxidized massive diamicton (Alden Member). The Alden Member in this mapping unit extends to depths in excess of five meters and overlies a variety of Quaternary and bedrock materials.

Dm/Pp--Dows Formation Morgan Member over Pennsylvanian bedrock (Cherokee Group): Two to four meters of calcareous, mostly oxidized, stratified to weakly bedded friable loam diamicton with sandy loam and loamy sand interbeds (Morgan Member), over dense Pennsylvanian bedrock consisting primarily of siltstone and mudstone but also including thin sandstone and limestone strata. These rocks underlie all the Quaternary sediments in the Camp Dodge area, but are within four meters or less of the land surface in this mapping unit.

Dpk/a--Dows Formation Pilot Knob Member over Alden Member: Two to five meters of stratified, calcareous, oxidized, usually unsaturated pebbly sand to cobble gravel (Pilot Knob Member) over dense, calcareous, unoxidized massive diamicton (Alden Member). The upper meter of the unit may be wind-reworked and consist of fine to medium sand. This map unit occurs on isolated upland ridges that formed as subglacial and ice-contact channel fills (eskers and kames).

Dlm/a--Dows Formation Lake Mills Member over Alden Member: Two to three meters of oxidized, calcareous laminated silt loam, fine sand and silty clay (Lake Mills Member) over dense, calcareous, unoxidized massive diamicton (Alden Member). This map unit occurs on isolated upland ridges and is associated with the Pilot Knob Member. This relationship suggests that these Lake Mills Member deposits accumulated either in subglacial channels or in ice-contact settings (eskers and kames).

Noah Creek Formation

NC/Da--Noah Creek Formation over Dows Formation Morgan or Alden Member: Two to four meters of oxidized, calcareous pebbly sand to cobble gravel (Noah Creek Formation) over calcareous, reduced to unoxidized stratified to weakly bedded friable loam diamicton with sandy loam and loamy sand interbeds (Morgan Member), or dense, calcareous, unoxidized massive diamicton (Alden Member). The upper one to one and a half meters of the Noah Creek Formation may be wind reworked and consist of fine to medium sand. The lower two to three meters of the Noah Creek Formation is usually saturated. This unit occurs on outwash terraces along Beaver Creek Valley.

NC/Pp--Noah Creek Formation over Pennsylvanian bedrock: Two to four meters of oxidized, calcareous pebbly sand to cobble gravel (Noah Creek Formation) over dense Pennsylvanian bedrock consisting primarily of siltstone and mudstone. The upper one to one and a half meters of the Noah Creek Formation may be wind reworked and consist of fine to medium sand. The lower two to three meters of the Noah Creek Formation is usually saturated.

Peoria Formation

P/Dm-- Peoria Formation (sand facies) over Dows Formation Morgan Member: One to two meters of oxidized, generally non-calcareous fine to medium sand or loamy sand (Peoria Formation) over calcareous, reduced to unoxidized stratified to weakly bedded friable loam diamicton with sandy loam and loamy sand interbeds (Morgan Member). A few small areas of silty material (loess) occur within this mapping unit. The Peoria Formation deposits are eolian (wind blown) in origin.