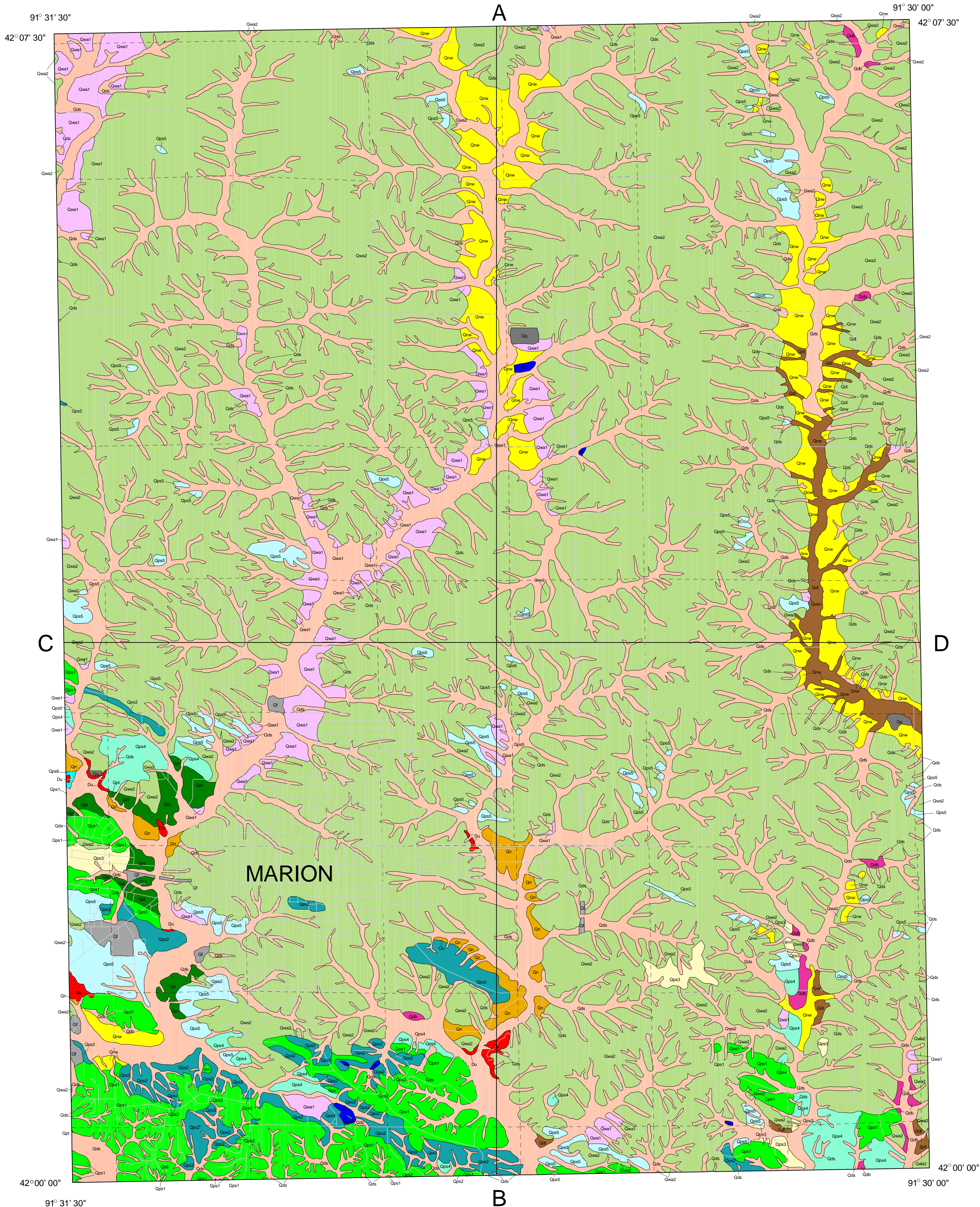


SURFICIAL GEOLOGIC MATERIALS OF THE MARION QUADRANGLE, IOWA



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Description of Map Units

Unit	Description
Holocene	
Qs5	ALLUVIUM (DeForest Formation) - One to three meters of massive to weakly stratified, grayish brown to brown loam, silt loam, clay loam, or loamy sand overlying less than three meters of poorly to moderately well sorted, massive to moderately well stratified, coarse to fine feldspathic quartz sand, pebbly sand, and gravel. Unit also includes colluvial deposits derived from adjacent map units. Seasonally high water tables occur in this map unit.
Qs4	ALLUVIUM (DeForest Formation) - Two to four meters of massive to moderately well stratified loam, silt loam, clay loam, or loamy sand overlying more than three meters of poorly to moderately well sorted, massive to well stratified, coarse to fine feldspathic pebbly sand and gravel of the Noah Creek Formation. Seasonally high water tables occur in this map unit.
Qsb	MUCK AND PEAT (DeForest Formation, Barton Member-new) - One to six meters of black to brown muck, peat, and other organic-rich deposits in fans. Massive to well stratified at depth. Overlies sand and gravel and/or massive, fractured, loamy glacial till of the Wolf Creek or Alburnett formations. High water tables occur in this map unit.
Late Wisconsinan	
Qn	SAND AND GRAVEL SHALLOW TO ROCK (Noah Creek Formation) - One to three meters of yellowish brown, poorly to well sorted, massive to well stratified, coarse to fine feldspathic quartz sand, pebbly sand, and gravel that overlies fractured Devonian carbonate bedrock.
Qp4	LOESS AND INTERCALATED EOLIAN SAND (Peoria Silt) - Two to seven meters of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and intercalated fine to medium, well sorted, feldspathic quartz sand. Grades downward to poorly to moderately well sorted, moderately to well stratified, coarse to fine feldspathic quartz sand, loam, or silt loam alluvium, or in some places the eolian sediments a clayey Farmdale-Sangamon Soil developed in alluvium. These alluvial fills are beneath the Late Phase High Terrace (no pebbles beneath the loess) and Early Phase High Terrace (pebbles beneath the loess) of the Iowa/Cedar Basin.
Qps1	LOESS AND INTERCALATED EOLIAN SAND (Peoria Silt) - Five to ten meters of yellowish brown to gray, massive, jointed, noncalcareous grading downward to calcareous silt loam and intercalated fine to medium, well sorted, feldspathic quartz sand. Sand is most abundant in lower part of eolian package. Overlies massive, jointed, loamy glacial till of the Wolf Creek or Alburnett formations with or without intervening clayey Farmdale-Sangamon Paleosol. Loess and sand are dominantly Cedar Valley source.
Qps2	EOLIAN SAND (Peoria Silt - sand facies) - Five to fifteen meters of yellowish brown to gray, moderately to well stratified noncalcareous or calcareous, fine to medium, well sorted, feldspathic quartz sand. May contain interbeds of yellowish brown to gray, massive, silt loam loess. Overlies eroded, massive, jointed, loamy glacial till or fractured Devonian-age carbonate bedrock. Dominantly Cedar Valley source.
Qps3	LOESS SHALLOW TO GLACIAL TILL (Peoria Silt) - Two to three meters of yellowish brown, massive, noncalcareous silt loam and intercalated fine to medium, well sorted, feldspathic quartz sand. Sand, if present, occurs in lower part of unit. Overlies 0.2 to 1.5 meters of pebbly loam erosion surface sediment which, in turn, overlies eroded, massive, jointed, firm, loamy glacial till of the Wolf Creek or Alburnett formations. Seasonally high water table may occur in this map unit.
Qps4	LOESS SHALLOW TO SAND AND GRAVEL (Peoria Silt) - One to two meters of yellowish brown, massive, noncalcareous silt loam. Overlies pebbly sand and gravel erosion surface sediment that is one to three meters thick, which, in turn, overlies eroded massive, jointed, firm, loamy glacial till of the Wolf Creek or Alburnett formations. Seasonally high water table may occur in this map unit.
Qps5	EOLIAN SAND SHALLOW TO GLACIAL TILL (Peoria Silt - sand facies) - Two to four meters of yellowish brown, massive to well stratified, noncalcareous, fine to medium, well sorted feldspathic quartz sand. Overlies pebbly loam erosion surface sediment which, in turn, overlies eroded massive, jointed, firm, loamy glacial till of the Wolf Creek or Alburnett formations.
Qps6	EOLIAN SAND SHALLOW TO ROCK (Peoria Silt - sand facies) - One to four meters of yellowish brown, massive to well stratified, noncalcareous, fine to medium, well sorted feldspathic quartz sand. May overlie one to two meters of loam erosion surface sediment and/or less than two meters of eroded, massive, jointed, firm loamy glacial till of the Wolf Creek or Alburnett formations. Fractured Devonian carbonate bedrock is less than five meters below the sand surface.
Qsw1	SAND AND GRAVEL SHALLOW TO TILL (Unnamed erosion surface sediment) - One to three meters of yellowish brown to gray, massive to weakly stratified, noncalcareous, medium to coarse, poorly sorted feldspathic pebbly quartz sand with intercalated gravel and loam. Overlies massive, jointed, firm, loamy glacial till of the Wolf Creek or Alburnett formations. Deposits in this mapping unit are derived primarily from erosion of glacial till in the adjacent drainage basin. Seasonally high water table may occur in this map unit.
Qsw2	LOAMY AND SANDY SEDIMENT SHALLOW TO GLACIAL TILL (Unnamed erosion surface sediment) - One to three meters of yellowish brown to gray, massive to weakly stratified, well to poorly sorted loamy, sandy and silt erosion surface sediment. Map unit includes some areas mantled with less than two meters of Peoria Silt (loess). Loess-mantled areas dominate the map unit in the eastern part of the Marion quadrangle. Overlies massive, jointed, firm glacial till of the Wolf Creek and Alburnett formations. Seasonally high water table may occur in this map unit.
Complexes	
Qrw	SAND AND GRAVEL (Noah Creek and Wolf Creek formations) - More than three meters of yellowish brown to gray, poorly to well sorted, massive to well stratified, coarse to fine feldspathic quartz sand, pebbly sand and gravel. In places mantled with one to three meters of fine to medium, well sorted feldspathic quartz sand derived from wind reworking of the alluvium. Along Crabapple and Martin creeks in the eastern part of the Marion quadrangle this unit includes eroded intertilt sand and gravel of the Wolf Creek Formation. Seasonally active seeps may occur in these intertilt settings. Elsewhere the unit encompasses deposits that accumulated during the late Wisconsinan.
W	POND - Small ponds formed by blockage of drainageways. Most of these are man made, but a few were formed naturally when existing drainageways were blocked by migration of sand dunes.
Devonian System	
Du	FRACTURED CARBONATE BEDROCK (Devonian - undifferentiated) - Includes fossiliferous limestones of the Cedar Valley Group and carboniferous limestones, dolostones, and shales of the Wapsipicon Group. Karst development occurs in the upper part of the Wapsipicon Group.
Anthropogenic Units	
Qr	QUARRIES AND PITS - Limestone quarries and sand and gravel pits. Extent as of 1990 shown.
Qf	FILL - Areas of major land filling. Fill associated with railroad grades, highway grades, and land leveling. Visible in cross-section ranging from loamy and sandy to concrete rubble.
Qi	CUT AND FILL - Areas of cut and fill associated with Interstate-380. Deposits within this map unit are similar to those in adjacent map units but may have significant mantles of fill or deep cuts that expose underlying deposits. Occurs only in the Cedar Rapids North quadrangle. Similar, but less extensive deposits occur along all roads in both quadrangles.

SCALE

1:24000

