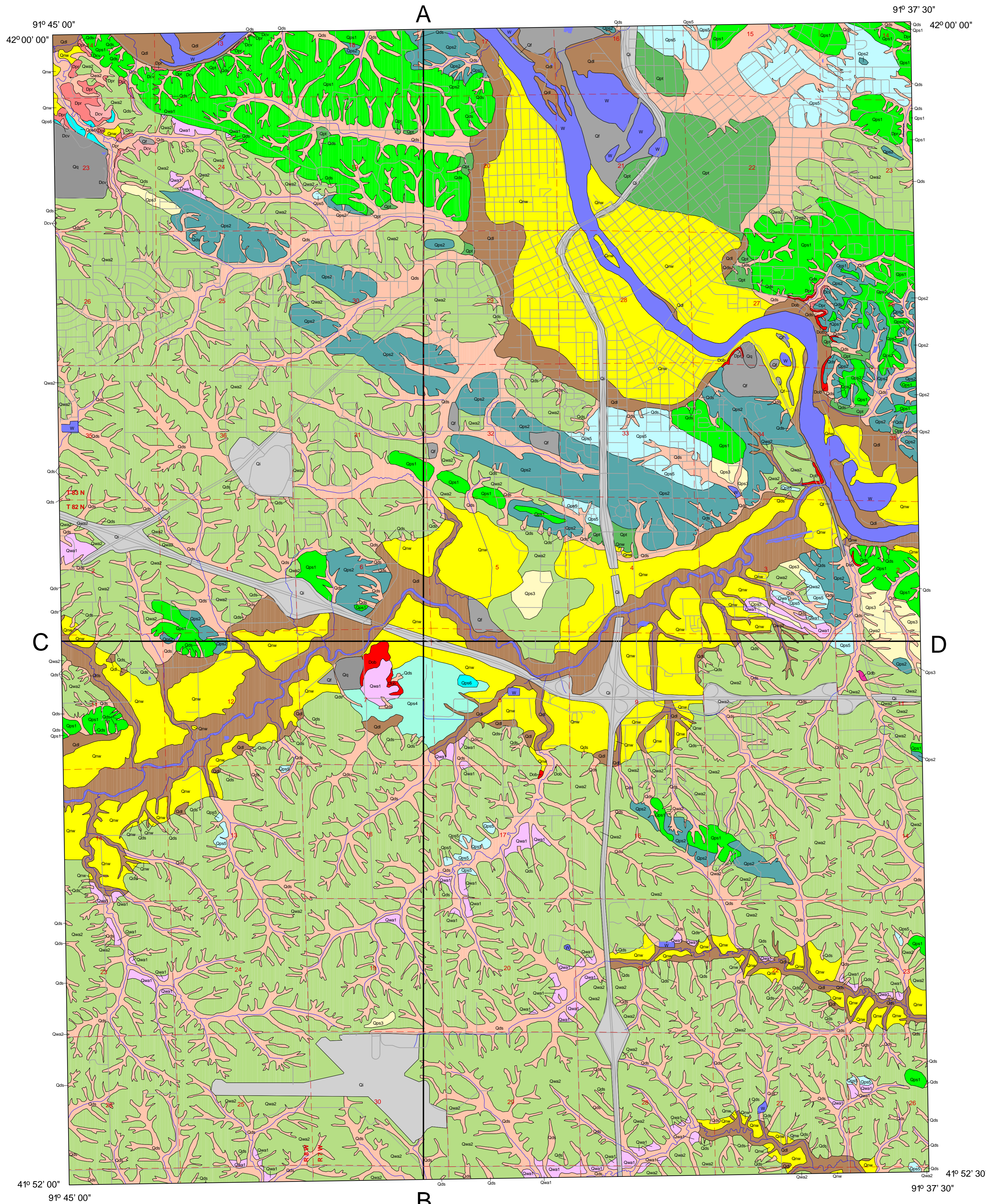


# SURFICIAL GEOLOGIC MATERIALS OF THE CEDAR RAPIDS SOUTH QUADRANGLE



Geological Survey Bureau  
Open File Map Series 96-1

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September 1996

Supported by the U.S. Geological Survey, Department of Interior,  
under assistance Award No. 1434-95-A-01362, and Bluestem Solid Waste Agency, City of  
Cedar Rapids City Engineer, Linn County Regional Planning, Linn County Engineering, Wendling  
Quarries Inc., Shive-Hattery Engineers and Architects Inc., and Howard R. Green Company.



Iowa Department of Natural Resources  
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### ACKNOWLEDGMENTS

Recognized for direct contributions to the map's production: D.L. Koch, R.R. Anderson,  
B.J. Witzke, D.J. Quade, R.R. Rowden of the DNR Geological Survey Bureau, R.D.  
Mandel of Topeka, Kansas, Iowa City office of the U.S. Geological Survey - Water  
Resources Division, Iowa Department of Transportation, U.S. Department of Agriculture -  
Natural Resources Conservation Service, Linn County Engineering, Bluestem Solid Waste  
Agency, Linn County Planning and Zoning, and landowners who granted access for field  
studies. Special thanks is extended to Rebecca Palmer, Director of Linn County Planning  
and Zoning, for coordination with government agencies and private businesses in Linn  
County.

### LEGEND

#### Description of Map Units

Unit	Description	Holocene
Qa1	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. One also includes colorized deposits derived from adjacent map units. Seasonally high water tables occur in this map unit.	
Qa2	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.	
Qm1	MUCK AND PEAT (DeForest Formation, Woden Member) - 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 Aburnett formations. High water tables occur in this map unit.	
<b>Late Wisconsinan</b>		
Qp1	LOESS AND INTERCALATED EOLIAN SAND (Peoria Formation) - 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, pebbly sand, loam, or silt loam, alluvium, or in some places the eolian sediments bury a clayey Farmland/Sargento Soil developed in Pre-Wisconsinan alluvium. These alluvial tills are beneath the Late Pleistocene Terrace (no pediment beneath the loess) and Early Phase High Terrace (pediment beneath the loess) of the Iowa/Cedar Basin.	
Qp2	LOESS AND INTERCALATED EOLIAN SAND (Peoria Formation) - 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 the lower part of the eolian package. Overlies massive, jointed, loamy glacial till of the Wolf Creek or Aburnett formations with or without intervening clayey Farmland/Sargento Paleosols. Loess and sand are dominantly Cedar Valley source.	
Qp3	EOLIAN SAND (Peoria Formation - 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.	
Qp4	LOESS SHALLOW TO GLACIAL TILL (Peoria Formation) - 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 0.5 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 Aburnett formations. Seasonally high water tables may occur in this map unit.	
Qp5	LOESS SHALLOW TO SAND AND GRAVEL (Peoria Formation) - One to two meters of yellowish brown, massive, noncalcareous silt loam. Overlies pebbly sand and gravel erosion surface sediment that is one to four meters thick, which, in turn, overlies eroded, massive, jointed, firm, loamy glacial till of the Wolf Creek or Aburnett formations. Seasonally high water tables may occur in this map unit.	
Qp6	EOLIAN SAND SHALLOW TO GLACIAL TILL (Peoria Formation - 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 Aburnett formations.	
Qp7	EOLIAN SAND SHALLOW TO ROCK (Peoria Formation - 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 loamy erosion surface sediment and/or less than two meters of eroded, massive, jointed, firm loamy glacial till of the Wolf Creek or Aburnett formations. Fractured Devonian-age carbonate bedrock is less than five meters below the land surface.	
Qp8	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 eroded, massive, jointed, firm, loamy glacial till of the Wolf Creek or Aburnett formations. Deposits in this mapping unit are derived primarily from erosion of glacial till in the adjacent drainage basin. Seasonally high water tables may occur in this map unit.	
Qp9	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 silt loam erosion surface sediment. Map unit includes some areas marked with less than two meters of Peoria Formation (loess and eolian sand). Loess-marked areas dominate the map unit in the southern part of the Cedar Rapids South quadrangle. Overlies eroded, massive, jointed, firm glacial till of the Wolf Creek and Aburnett formations. Seasonally high water tables may occur in this map unit.	
<b>Complexes</b>		
Qnw	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 marked with one to three meters of fine to medium, well sorted feldspathic quartz sand derived from wind reworking of the alluvium. The unit encompasses deposits that accumulated primarily during the late Wisconsinan.	
<b>Devonian System</b>		
Dv1	FRACTURED CARBONATE BEDROCK (Cedar Valley Group) - Zero to forty meters of fossiliferous limestone and dolostones used as a shallow bedrock aquifer.	
Dv2	FRACTURED CARBONATE BEDROCK (Prison Ridge Formation) - Zero to twenty meters of unfossiliferous limestone, dolostone, and shale. The basal shaly five meters are a confining unit that retards groundwater infiltration. The upper part of the unit is prone to karst development.	
Dv3	FRACTURED CARBONATE BEDROCK (Os and Berran Formations, undifferentiated) - Zero to forty meters of unfossiliferous to poorly fossiliferous dolostone and limestone.	
<b>Anthropogenic Units</b>		
Qf	QUARRIES AND PITS - Limestone quarries and sand and gravel pits. Extent as of 1990 shown.	
Ql	FILL - Areas of major land filling. Fill associated with railroad grades, highway grades, and land leveling. Variable in character ranging from loamy and sandy to concrete rubble.	
Qc	CUT AND FILL - Areas of cut and fill associated with Interstate-380, Westside Mall, and the Cedar Rapids Municipal Airport. Deposits within this map unit are similar to those in adjacent map units but may have significant amounts of fill or deep cuts that expose underlying deposits. Similar, but less extensive deposits occur along all roads.	
W	WATER	

Scale  
1:24000

