GEOLOGIC MAP OF THE PRESCOTT WEST QUADRANGLE, HEMPSTEAD AND NEVADA COUNTIES, ARKANSAS

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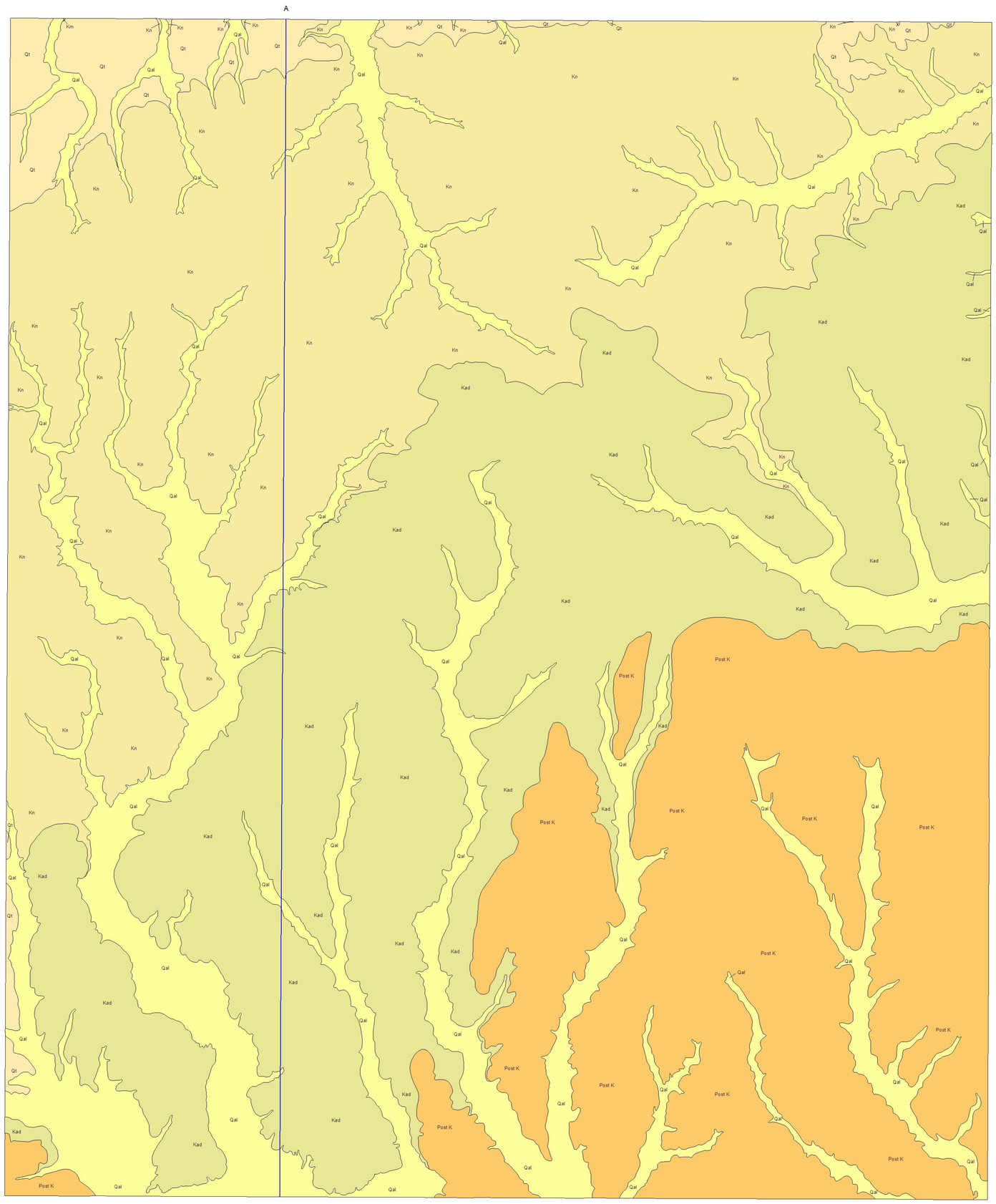
Arkansas Geological Commission, William V. Bush, State Geologist



CORRELATION OF MAP UNITS

Qal, Qt	Quaternary	CENOZOIC
UNCONFORMITY		
Post K	Tertiary	CENOZOIC
UNCONFORMITY		
Kad	Upper Cretaceous	MESOZOIC
UNCONFORMITY		
Kn	Upper Cretaceous	MESOZOIC
UNCONFORMITY		
Km	Upper Cretaceous	MESOZOIC

DESCRIPTION OF MAP UNITS

Qal — **Alluvium (Quaternary)** - Variably sized gravel overlain by unconsolidated sand, silt, and clay comprises this unit. This unit occurs in the floodplains of streams and rivers. The sediments form a rich loam and are excellent for agriculture. Gravels, primarily novaculite, originated in the Ouachita Mountain region and from local Cretaceous formations. Thickness varies from 0 to 25 feet. Areas of alluvium are presently receiving sediment deposition.

Qt — **Terrace Deposits (Quaternary)** - Terrace deposits generally grade from basal gravel to silt and clay at the top. Gravels, primarily novaculite, originated in the Ouachita Mountain region and from local Cretaceous formations. Thicknesses are generally less than 50 feet. Terraces are topographic features which are former floodplains of nearby streams and/or rivers. The sediments form a rich loamy soil. The basal gravel is sometimes utilized for water-well production and gravel-mining operations.

Post K — **Post Cretaceous (Tertiary)** - Undifferentiated units of post Cretaceous age.

Kad — **Arkadelphia Marl (Upper Cretaceous)** - The Arkadelphia Marl is a dark-gray to black marl or marly clay. It contains some limy, gray sandstone, gray sandy clay, sandy limestone, concretionary limestone, and white to light brown impure chalk. The sandy marls and limestones are found near the base of the unit, while the impure chalks are found near the top of the unit. The Arkadelphia Marl is approximately 150 feet thick in the mapped area. The unit strikes to the northeast and has a dip of approximately 80 feet per mile to the southeast in this quadrangle. Fossils present in the Arkadelphia Marl include corals, bivalves, gastropods, cephalopods, shark teeth, and various microfossils. The unit was deposited in a nearshore marine environment and rests unconformably on top of the Nacatoch Sand.

Kn — **Nacatoch Sand (Upper Cretaceous)** - The Nacatoch Sand is composed of unconsolidated, cross-bedded, yellowish and gray fine quartz sand, hard fossiliferous sandy limestone, coarse highly glauconitic sand, fine argillaceous blue-black sand, and bedded light-gray clay and marl. Hard fossiliferous limestones are found near the base of the unit. Near the middle of the unit a coarse, highly glauconitic lens is observed. The lens appears black on outcrop and may be 30 to 60 feet thick. Thin bedded gray clay is interbedded with fine sands at the top of the unit. The Nacatoch Sand is approximately 300 feet thick in the mapped area. The unit strikes to the northeast and has a dip of approximately 80 feet per mile to the southeast in this quadrangle. Fossils present in the unit include corals, echinoderms, bryozoa, annelids, bivalves, gastropods, cephalopods, crab remains, and shark teeth. The Nacatoch Sand was deposited in a nearshore marine environment and rests unconformably on top of the Saratoga Chalk .

Km — **Marlbrook Marl (Upper Cretaceous)** - The Marlbrook Marl is a uniform chalky marl that is blue-gray when freshly exposed and weathers white to light brown. The unit is moderately fossiliferous in the upper part and slightly fossiliferous in the lower part. The unit strikes to the northeast and has a dip of approximately 80 feet per mile to the southeast. Notable fossils include *Exogyra*, *Gryphaea*, and *Ostrea* oyster species and reptile remains. The Marlbrook Marl was deposited in a nearshore marine environment and rests unconformably on top of the Ozan formation (Upper Cretaceous).

SYMBOLS

Gravel and/or sand pit

Contact

REFERENCES

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Dane, C. H., 1929, Upper Cretaceous Formations of Southwestern Arkansas: Arkansas Geological Survey Bulletin 1, 215 p.

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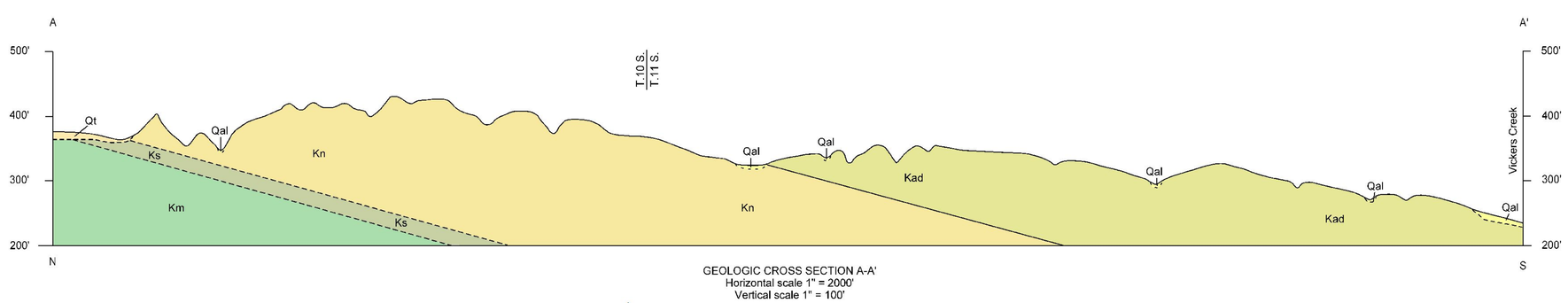

GEOLOGIC CROSS SECTION A-A'
Horizontal scale 1" = 2000'
Vertical scale 1" = 100'