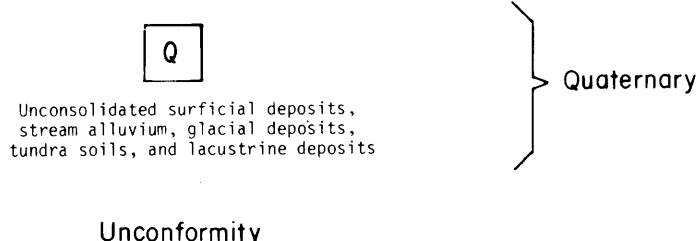


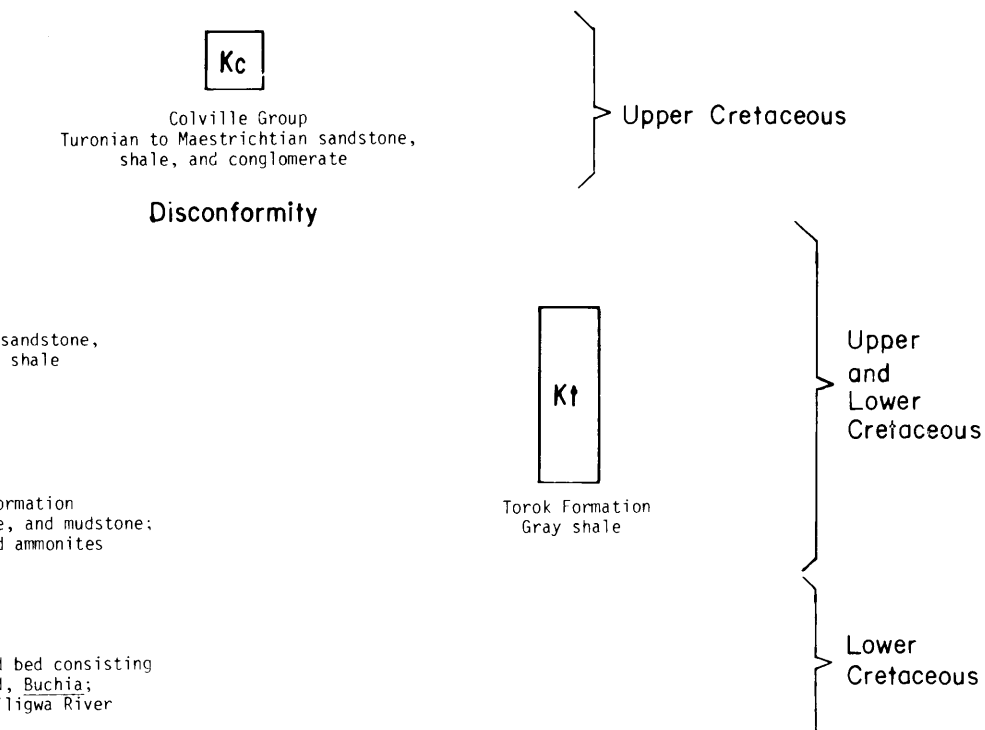
DESCRIPTION OF ROCK UNITS

(FROM MAYFIELD AND OTHERS, 1978)

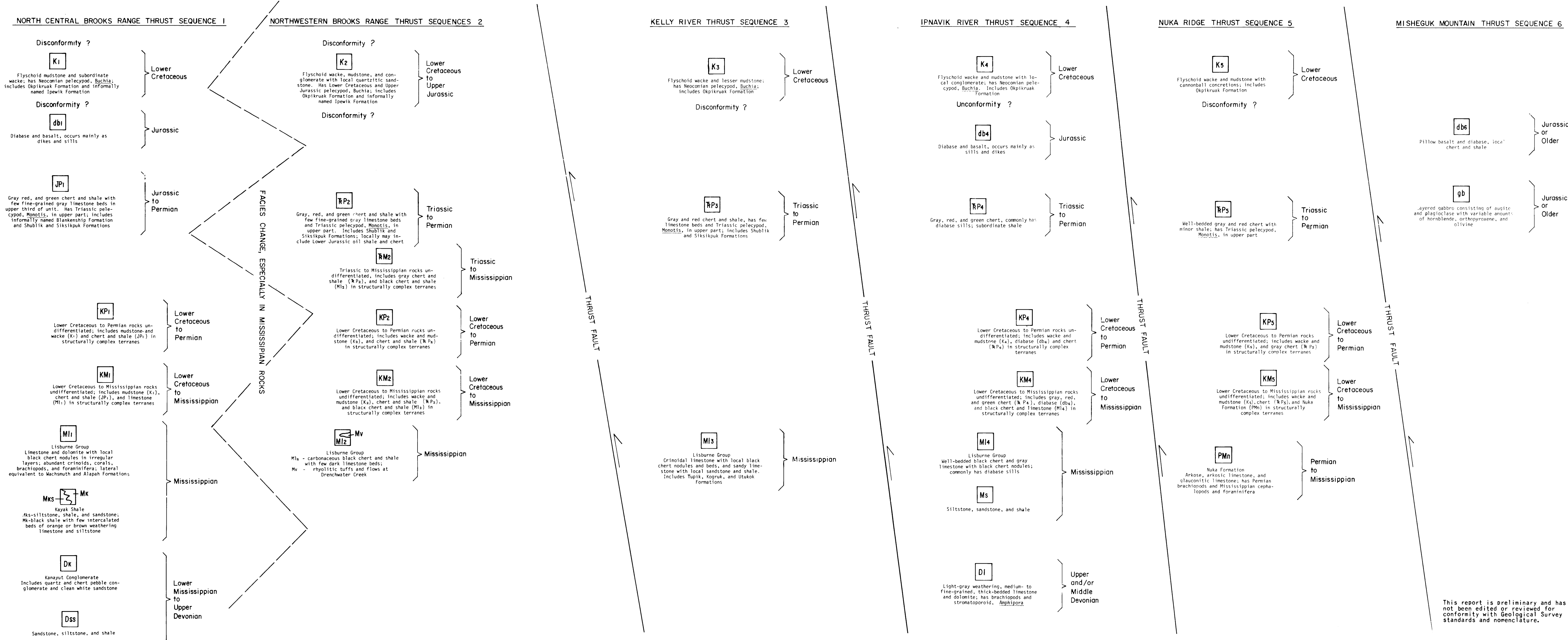
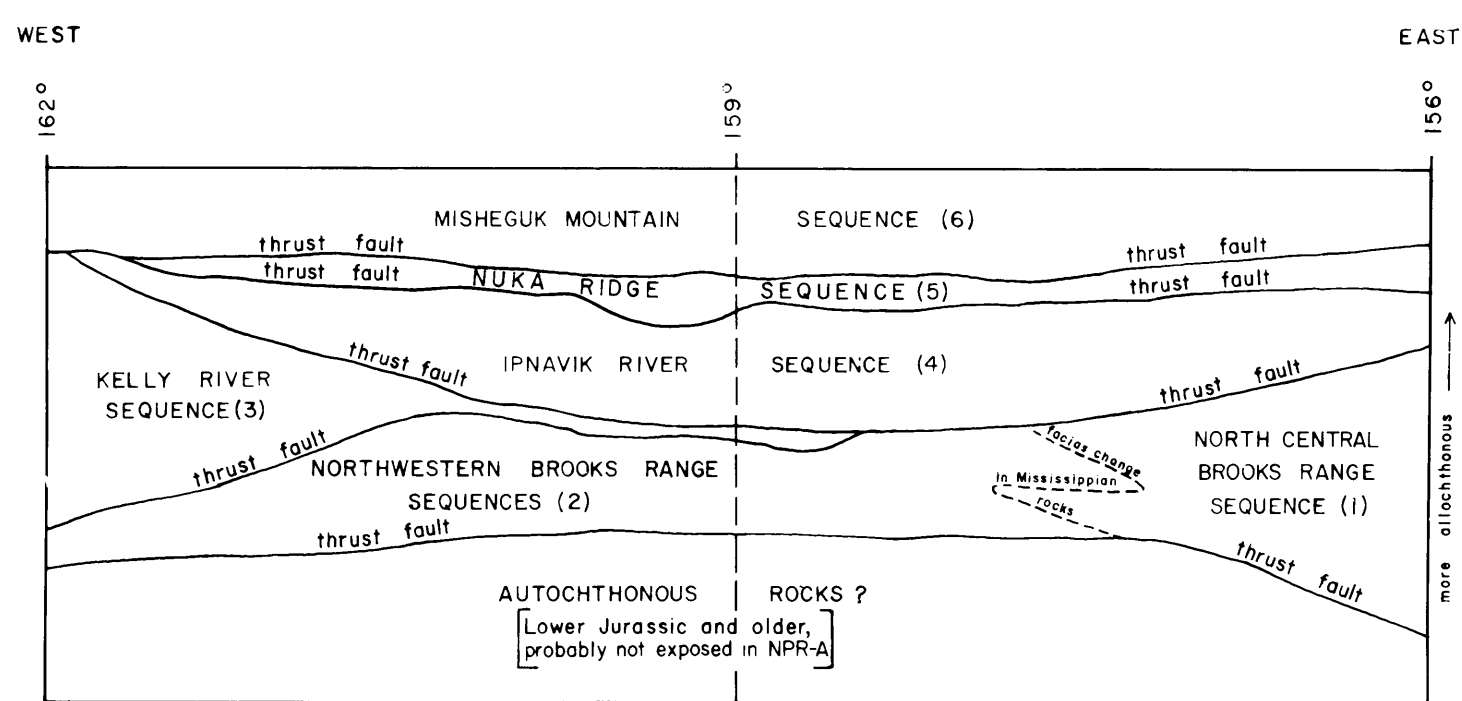
SURFICIAL DEPOSITS



AUTOCHTHONOUS ROCKS



ALLOCHTHONOUS ROCKS



INTRODUCTION

The accompanying geologic map and description of rock units represents an interpretation of the geology in the southern part of the Brooks Range and Misheguk Mountain thrust sequences near Ipevik, Alaska, based on data from Taitleur and others, 1968; Snelton and others, 1968; and Martin, 1970.

The south edge of NPR-A (Denali and Endicott Mountains) consists of generally coeval rock assemblages of slightly different facies which are believed to have been superimposed by large-scale horizontal thrust faults. Movement of the hanging wall relative to the footwall side of thrust faults has been from south to north, and it is probable that a distance of more than 100 mi would be required to restore the thrust plates to their original positions. Major faulting occurred in the latest Jurassic to middle Cretaceous. Numerous steep folds and high-angle faults affected the rocks prior to the thrusting event.

Rock units have been grouped into distinct thrust sequences. Five of the sequences, the north central Brooks Range, northwestern Brooks Range, Kelly River, Ipnavik River, and Nuka Ridge thrust sequences, have rocks ranging in age from Cretaceous to Mississippian or Devonian. Rocks of the Misheguk Mountain thrust sequence have less certain ages, but must be Jurassic or older. The relationship between the north central Brooks Range sequence and the northwestern Brooks Range sequence is uncertain, however, apparent additional facies change in Mississippian rocks and similar structural positions of these sequences suggest that they are not separated by major thrust faults. The northwestern Brooks Range thrust sequence are not well enough understood to be separated on the map, but distinct differences may be possible among closely related Mississippian rocks. The diagram below is a schematic cross-section in southern NPR-A showing the relative stacking positions and spatial (east-west) distribution of the major thrust plates represented on the map.

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MAP SHOWING RELATION BETWEEN AEROMAGNETIC DATA AND GEOLOGY, SOUTHERN NATIONAL PETROLEUM RESERVE IN ALASKA

COMPILED BY
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