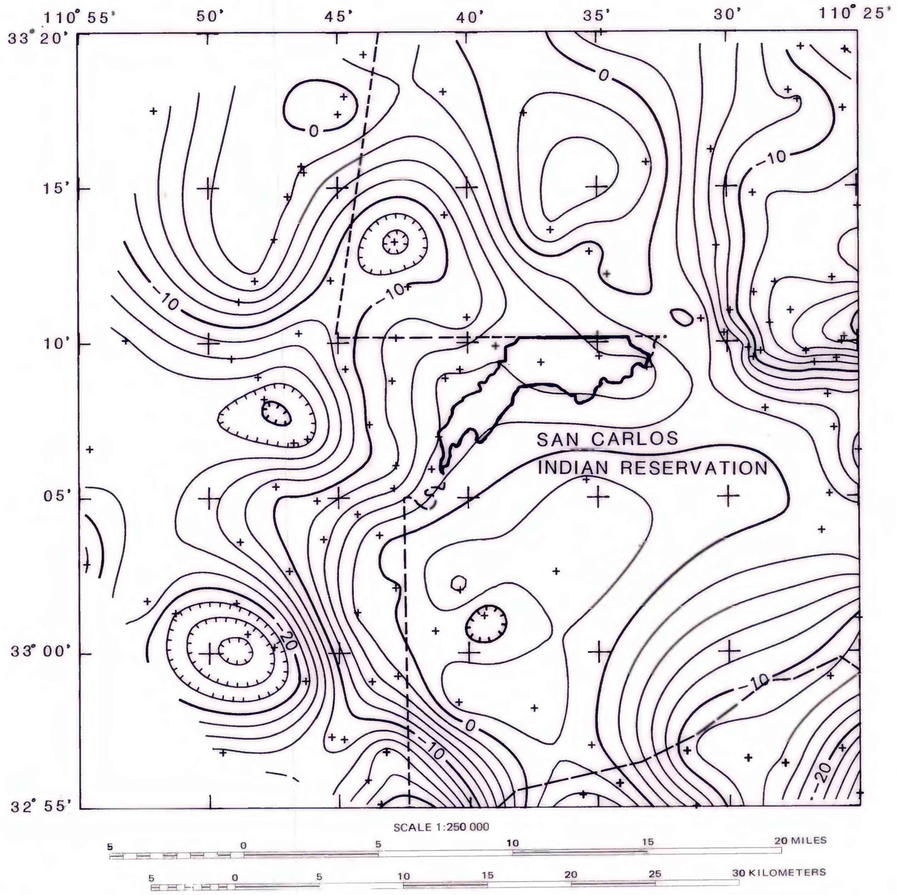
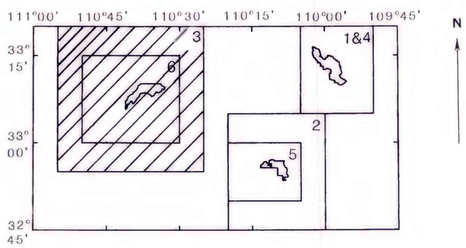
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

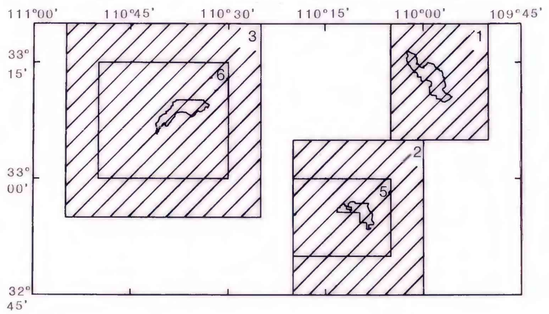


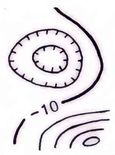
MAP 3- ISOSTATIC RESIDUAL GRAVITY MAP OF THE NEEDLES EYE WILDERNESS STUDY AREA, GILA COUNTY, ARIZONA

MAP LOCATION INDEX FOR THE 6 REPORT MAPS



MAP LOCATION INDEX FOR THE 6 REPORT MAPS
INDICATING MAPS ON THIS SHEET





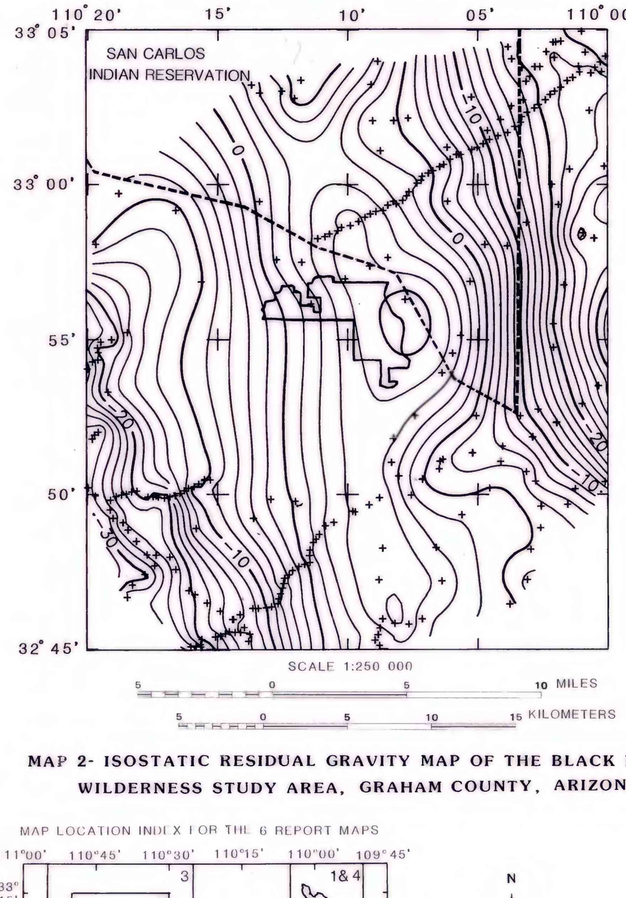
2 and 10 milliGal Contours

Hachures Indicate Closed Gravity Low

\+ Gravity Station Location

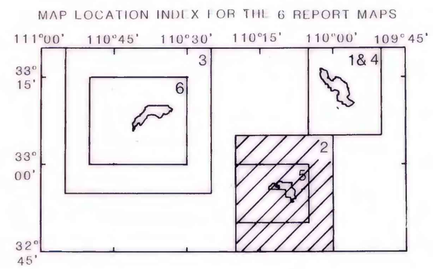
Boundary of Study Area

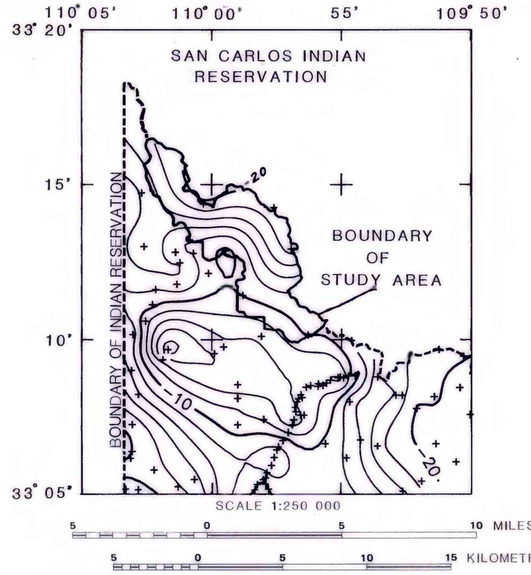
Boundary of San Carlos Indian Reservation



MAP 2- ISOSTATIC RESIDUAL GRAVITY MAP OF THE BLACK ROCK WILDERNESS STUDY AREA, GRAHAM COUNTY, ARIZONA

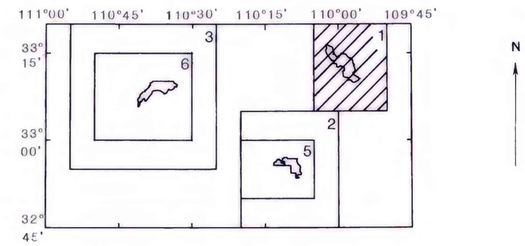
MAP LOCATION INDEX FOR THE 6 REPORT MAPS





MAP 1- ISOSTATIC RESIDUAL GRAVITY MAP OF THE FISHHOOKS WILDERNESS STUDY AREA, GRAHAM COUNTY, ARIZONA

MAP LOCATION INDEX FOR THE 6 REPORT MAPS



EXPLANATION

Isostatic corrections calculated assuming complete local compensation by the Airy-Heiskanen system. Calculations performed by computer (Simpson, Jachens, and Blakely,1983) out to a radius of 166.7 km from each station using a modification of an algorithm proposed by Parker (1972) which uses the fast Fourier transform. Crustal thickness calculated from topography averaged over 3x3 minute compartments (assuming density of topography to be 2.67 g/cc, sea level crustal thickness of 25 km, and a 0.4 g/cc density contrast between the crust and the mantle).

Gravity stations were obtained from existing Defense Mapping Agency (DMA) files and recent U.S. Gelogical Survey gravity data collected outside of the San Carlos Indian Reservation, Arizona.

References

Parker,R.L.,1972, The rapid calculation of potential anomalies: Geophysical Journal of the Royal Astronomical Society, v. 31, p. 447-455.

Simpson,R.W., Jachens,R.C., and Blakely,R.J.,1983, AIRYROOT: a FORTRAN program for calculating the gravitational attraction of an Airy isostatic root out to 166.7 km: U.S. Geological Survey Open-File Report 83-883, 66 p.

GRAVITY AND AEROMAGNETIC MAPS OF THE FISHHOOKS, THE BLACK ROCK, AND THE NEEDLES EYE WILDERNESS STUDY AREAS, IN GRAHAM AND GILA COUNTIES, ARIZONA

ISOSTATIC RESIDUAL GRAVITY MAPS OF THE FISHHOOKS, THE BLACK ROCK, AND THE NEEDLES EYE WILDERNESS STUDY AREAS, GRAHAM AND GILA COUNTIES, ARIZONA

BY
CRAIG F. ERDMAN

1986

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards.