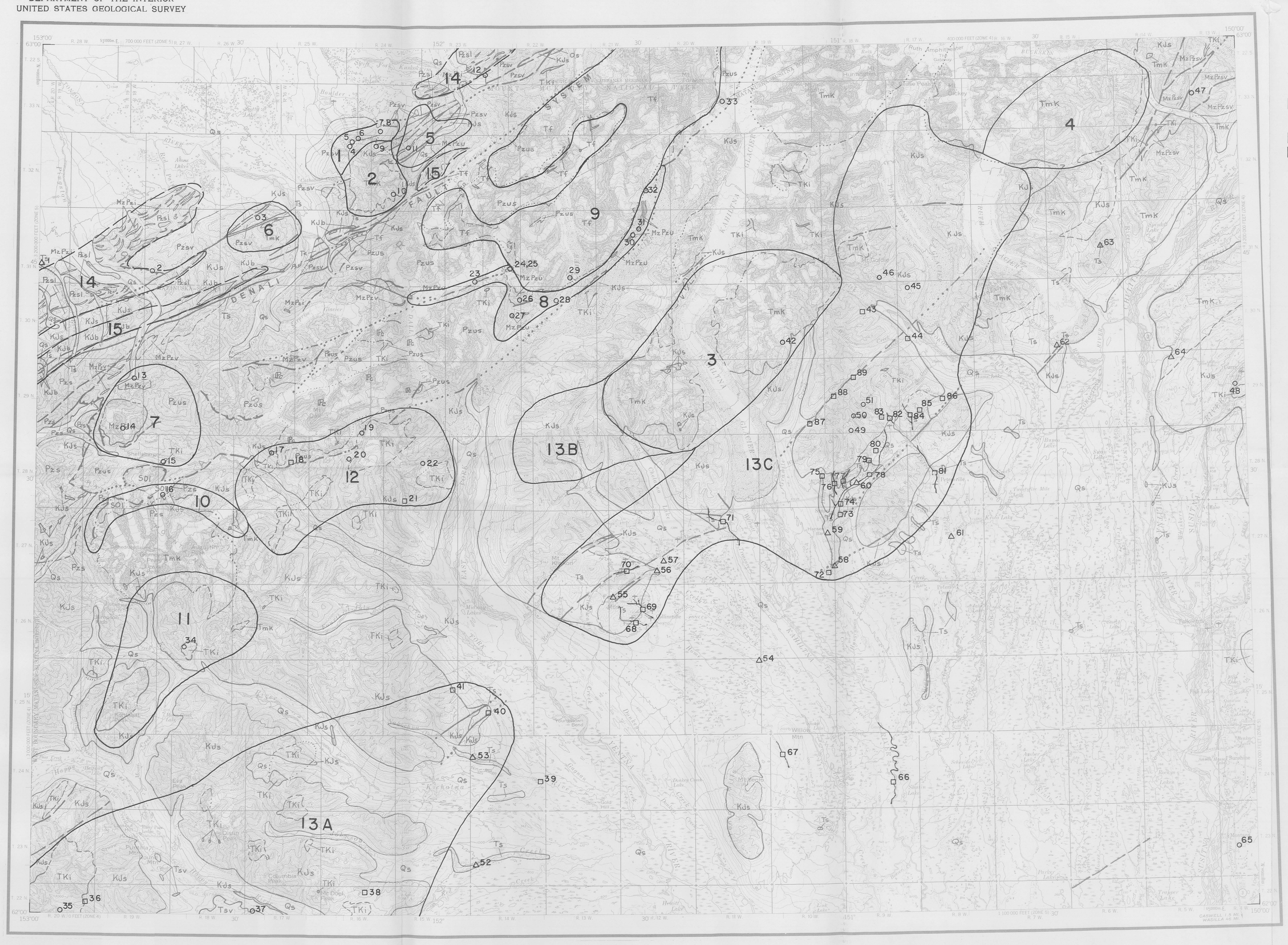

BASE BY U S GEOLOGICAL SURVEY, 1963

Kahiltna River (66), the mouth of the Nakochna River (39), and the Kichatna River (Cobb, 1973). The source of platinum in the latter two occurrences is probably related to the ultramafic phases of the composite plutons (Reed and Nelson, 1977). Although the known occurrences of platinum do not currently constitute a minable resource, platinum could be a valuable by-product of large-scale placer gold operations.

The content of platinum-group elements in a grab sample of chromite (30) is 0.020 ppm each ruthenium and iridium. Although these values are not considered anomalously high and none of these elements were detected in four grab samples of dunite, the possibility that this group of ultramafic rocks may contain local concentrations of platinum-group elements that are limited both stratigraphically and areally can not be discounted.

Other metals

Galena and sphalerite, common ore minerals of lead and zinc, occur in varying amounts in many of the known mineral occurrences, but none of these occurrences approaches exploitable quality solely for lead and zinc. Lead could be produced as a byproduct of the argentiferous galena in veins at the Hogback prospect (4), and byproduct lead and zinc could be recovered from the Boulder Creek (8), Mespelt (5), and Shellabarger Pass massive sulfide deposits (14). High zinc values in analyses of stream-sediment and pan concentrate samples are virtually limited to the terrane north of the Denali fault. Some of these anomalies no doubt reflect the high background values for this metal in the Paleozoic black carbonaceous shales (Pzsl). High values for lead and zinc in samples from area 6 are appparently related to the small intrusive body in this area. The source for the large amounts of zinc in pan concentrate samples north of area 7 and the lead in area 5 is not known but should be investigated.

Two occurrences of beryl-rich greisen (9, 10) and high values of beryllium in pan concentrate and stream-sediment analyses indicate that the composite biotite granite pluton (area 2) is a favorable area for beryllium deposits. Other biotite granite plutons of the McKinley sequence (area 3, 4) have a potential for beryllium as well as tin deposits.

Tungsten anomalies in analyses of pan concentrates are associated with granites of the McKinley sequence and the composite plutons in area 12. The only tungsten occurrence presently known is a quartz-tourmaline-wolframite vein in lime silicates north of Cathedral Spires pluton (16). Stream-sediment and pan concentrate samples from streams adjacent to the pluton suggest that additional tungsten occurrences may be present. The high tungsten values in analyses from area 12 may indicate contact metamorphic tungsten deposits. Scheelite has been found in most pan concentrates from areas draining granitic rocks south of the Denali fault.

NONMETALS

Sand, gravel, rock, and limestone

The Talkeetna quadrangle contains large quantities of sand and gravel, rock suitable for crushed stone, and limestone for lime and possibly cement. Limestone deposits are currently far from urban centers, and their economic potential is low for this reason. Sand and gravel are of value for local road construction, and deposits along the Chulitna and Susitna Rivers were utilized for the construction of the George Parks Highway. A granite quarry (T. 30 N., R. 5 W.) on this highway provided material for bridge construction and erosion control. Future value and use of these materials will depend on their proximity to population centers or highway construction.

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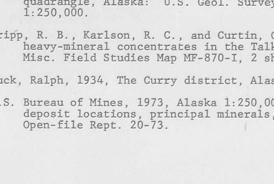

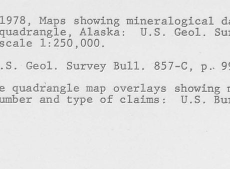

MINERAL RESOURCES MAP OF THE TALKEETNA QUADRANGLE, ALASKA

BY BRUCE L. REED, STEVEN W. NELSON, GARY C. CURTIN, AND DONALD A. SINGER, 1978