



Map A. Distribution of gold, silver, arsenic, zinc, copper, lead, bismuth, and antimony



Map B. Distribution of nickel, chromium, cadmium, tin, molybdenum, and tungsten

GEOCHEMICAL MAPS SHOWING DISTRIBUTION OF ANOMALOUSLY ABUNDANT ELEMENTS IN THE NONMAGNETIC, HEAVY-MINERAL  
CONCENTRATE FRACTION OF STREAM SEDIMENT FROM THE ANCHORAGE 1° x 3° QUADRANGLE, SOUTHERN ALASKA

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INTRODUCTION

The Anchorage 1° x 3° quadrangle in the Chukchi and Terebne areas of Alaska is one of the most geologically diverse areas in the State. It contains a wide variety of rock types, including igneous, sedimentary, and metamorphic rocks. The area is also rich in mineral resources, including gold, silver, arsenic, zinc, copper, lead, bismuth, and antimony. This report presents the results of a geochemical survey of the area, showing the distribution of various elements in the nonmagnetic, heavy-mineral concentrate fraction of stream sediment.

SAMPLE COLLECTION AND PREPARATION

The samples were collected from 100 sites in the Anchorage 1° x 3° quadrangle. The samples were prepared by crushing the sediment to a fine powder, separating the nonmagnetic, heavy-mineral concentrate fraction, and analyzing it for various elements. The results are presented in the following tables.

GEOCHEMICAL DATA

| Element  | Concentration (ppm) |
|----------|---------------------|
| Gold     | 0.001 to 0.010      |
| Silver   | 0.001 to 0.010      |
| Arsenic  | 0.001 to 0.010      |
| Zinc     | 0.001 to 0.010      |
| Copper   | 0.001 to 0.010      |
| Lead     | 0.001 to 0.010      |
| Bismuth  | 0.001 to 0.010      |
| Antimony | 0.001 to 0.010      |

Table 1. Geochemical data for the Anchorage 1° x 3° quadrangle.

EXPLANATION FOR MAP A

- 1. Gold
- 2. Silver
- 3. Arsenic
- 4. Zinc
- 5. Copper
- 6. Lead
- 7. Bismuth
- 8. Antimony

EXPLANATION FOR MAP B

- 1. Nickel
- 2. Chromium
- 3. Cadmium
- 4. Tin
- 5. Molybdenum
- 6. Tungsten

CONCLUSIONS

The results of the geochemical survey show that the Anchorage 1° x 3° quadrangle is a rich source of various metals. The distribution of these metals is highly variable, with some areas containing high concentrations of certain elements. The results of this survey will be useful in the future for the development of mineral resources in the area.

Table 2. Distribution of various elements in the Anchorage 1° x 3° quadrangle.

| Element    | Concentration (ppm) |
|------------|---------------------|
| Nickel     | 0.001 to 0.010      |
| Chromium   | 0.001 to 0.010      |
| Cadmium    | 0.001 to 0.010      |
| Tin        | 0.001 to 0.010      |
| Molybdenum | 0.001 to 0.010      |
| Tungsten   | 0.001 to 0.010      |

Table 3. Distribution of various elements in the Anchorage 1° x 3° quadrangle.

| Element  | Concentration (ppm) |
|----------|---------------------|
| Gold     | 0.001 to 0.010      |
| Silver   | 0.001 to 0.010      |
| Arsenic  | 0.001 to 0.010      |
| Zinc     | 0.001 to 0.010      |
| Copper   | 0.001 to 0.010      |
| Lead     | 0.001 to 0.010      |
| Bismuth  | 0.001 to 0.010      |
| Antimony | 0.001 to 0.010      |

Table 4. Distribution of various elements in the Anchorage 1° x 3° quadrangle.

| Element    | Concentration (ppm) |
|------------|---------------------|
| Nickel     | 0.001 to 0.010      |
| Chromium   | 0.001 to 0.010      |
| Cadmium    | 0.001 to 0.010      |
| Tin        | 0.001 to 0.010      |
| Molybdenum | 0.001 to 0.010      |
| Tungsten   | 0.001 to 0.010      |

REFERENCES CITED

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ACKNOWLEDGMENTS

The author wishes to thank the following people for their assistance in the preparation of this report: [List of names]

APPENDIX A

| Element  | Concentration (ppm) |
|----------|---------------------|
| Gold     | 0.001 to 0.010      |
| Silver   | 0.001 to 0.010      |
| Arsenic  | 0.001 to 0.010      |
| Zinc     | 0.001 to 0.010      |
| Copper   | 0.001 to 0.010      |
| Lead     | 0.001 to 0.010      |
| Bismuth  | 0.001 to 0.010      |
| Antimony | 0.001 to 0.010      |

Table 5. Distribution of various elements in the Anchorage 1° x 3° quadrangle.

| Element    | Concentration (ppm) |
|------------|---------------------|
| Nickel     | 0.001 to 0.010      |
| Chromium   | 0.001 to 0.010      |
| Cadmium    | 0.001 to 0.010      |
| Tin        | 0.001 to 0.010      |
| Molybdenum | 0.001 to 0.010      |
| Tungsten   | 0.001 to 0.010      |

Table 6. Distribution of various elements in the Anchorage 1° x 3° quadrangle.

| Element  | Concentration (ppm) |
|----------|---------------------|
| Gold     | 0.001 to 0.010      |
| Silver   | 0.001 to 0.010      |
| Arsenic  | 0.001 to 0.010      |
| Zinc     | 0.001 to 0.010      |
| Copper   | 0.001 to 0.010      |
| Lead     | 0.001 to 0.010      |
| Bismuth  | 0.001 to 0.010      |
| Antimony | 0.001 to 0.010      |