

TABLE 1.--PETROGRAPHIC DATA ON GRANITIC ROCKS OF THE EAGLE QUADRANGLE, ALASKA.

[The following abbreviations have been used: pheno(s) = phenocryst(s), chem = major element chemical analysis (rapid rock or standard), spec = 30-element semiquantitative spectrographic analysis), alter = alteration; mineral abbreviations, all = allanite, ap = apatite, bio = biotite, carb = carbonate, chl = chlorite, cpx = clinopyroxene, czs = clinozoisite, ep = epidote, hbl = hornblende, K-spar = potassium feldspar, musc = muscovite, op = opaque, plag = plagioclase, ser = sericite, sph = sphene, tour = tourmaline, zir = zircon.]

| Field No.  | Quad. | Pluton no. | Rock name           | Texture  | Grain size  | Primary minerals in percent |                 |   |                 |                  | Accessory minerals                               | Alteration (degree: minerals)                                      | Spec analysis | Chem analysis |          | Remarks  |   |
|------------|-------|------------|---------------------|--|---|-----------------------------|-----------------|---|-----------------|------------------|--|--|---------------|---------------|----------|--|---|
|            |       |            |                     |  |   | Biotite                     | Hornblende      | K-spar  | Plagioclase     | Quartz           |  |  |               | Rapid rock    | Standard |  |   |
| 68Ac297    | D-3   | 1          | Monzonite           | Slightly porphyritic   | Medium, hornblende phenos 5-7 mm  | Δ 0                         | 25              | 28<br>Microcline                                | 35              | 3                | Sph, op, topaz                                   | Slight: small amount of chl from hbl, plag to ap                   | X             |               |          |  |   |
| 68Ac366    | D-2   | 2          | Quartz monzodiorite | Hypidiomorphic-granular  | Medium  | Δ 0                         | 22              | 12  | 35              | 13               | Sph, all, ap, op, carb (veinlets)                | Strong: chl, ser (6-9%), ep (5%)                                   |               |               |          |  |   |
| 71AFr254   | C-2   | 3-A        | -----Do-----        | -----do-----   | --do--  | * 14                        | 1               | 9   | 49              | 28               | All, ep, op, zir                                 | Moderate: chl, ser   |               |               |          |  |   |
| 71AFr343   | C-2   | 3-A        | -----Do-----        | -----do-----   | Medium to coarse  | (5-10)                      | <5              | (15)  | (45)            | (30)             | All, ep, sph, zir, op                            | Moderate: bio to chl   |               |               |          |  |   |
| 71AFr341   | C-2   | 3-A        | Quartz diorite      | -----do-----   | Medium  | (10) Now chlorite           | 0               | (15)  | (40)            | (35)             | All, ep, op                                      | Strong: bio to chl   |               |               | X        |  |   |
| 71AFr2179  | C-2   | 3-A        | Granodiorite        | -----do-----   | --do--  | * 10                        | 13              | 16  | 39              | 23               | Ap, op, zir                                      | Slight: bio to chl, ep   |               |               | X        |  |   |
| 71AFr348   | C-2   | 3-B        | Quartz diorite      | Porphyritic  | --do--  | (40% of phenos)             | (20% of phenos) | (Groundmass)                                    | (20% of phenos) | (20% of phenos)  | Op   | Strong: ep, chl, op  |               |               | X        | Gray rubble. May be a phase-of intrusion or a later intrusion Abundant rock type locally. Groundmass about 60%, phenocrysts about 40%. |   |
| 71Awr161   | C-2   | 3-B        | Tonalite            | Hypidiomorphic-granular  | --do--  | (7)                         | (3)             | (5)   | (50)            | (35)             | Zir  | Slight: bio to chl   |               |               |          | Thin section contains fine-grained mafic clots.  |   |
| 68AFr2038  | D-2   | 3-B        | Granodiorite        | -----do-----   | --do--  | * 13                        | 2               | 14  | 48              | 23               | Ap, op,  | Slight: bio to chl, ep   |               |               | X        |  |   |
| 71AFr359   | D-3   | 3-C        | Quartz monzodiorite | -----do-----   | --do--  | * 12                        | 9               | 20  | 41              | 9                |  |  |               |               |          | No thin section.   |   |
| 71AFr364   | D-3   | 3-C        | Quartz diorite      | -----do-----   | --do--  | (2)                         | (8)<br>Brown    | <5  | (70)            | (10)             | Ap, zir, op                                      | Slight: chl, ep  |               |               | X        |  |   |
| 68AFr332   | D-2   | 3-C        | Granodiorite        | -----do-----   | --do--  | (9)                         | (6)             | (20)  | (40)            | (25)             | Op, zir  | Slight: chl  |               |               |          |  |   |
| 71AFr2024  | D-4   | 3-D        | Granite             | -----do-----   | --do--  | * 6                         | 0               | 28  | 31              | 34               | Tour, all  | Slight: clays, ser, chl  |               |               | X        |  |   |
| 71AFr2025  | D-4   | 3-D        | Granodiorite        | -----do-----   | --do--  | * 10                        | 4               | 16  | 39              | 30               | Ap, zir  | -----do-----   |               |               | X        |  |   |
| 71AFr185   | D-4   | 3-D        | Granite             | -----do-----   | --do--  | * 11                        | 3               | 26  | 30              | 30               | -----do--  | Ep, carb (veinlets) ser  |               |               | X        | K/Ar age 92.8±2.8 m.y. on biotite (D. L. Turner, oral commun., 1974).  |   |
| 71AFr793   | D-4   | 3-D        | --Do--              | -----do-----   | --do--  | * 7                         | 0               | 33  | 27              | 32               | Sph, op, ap, zir                                 | Slight: minor chl, clays   |               |               | X        | For background spec. see 71AFr183.   |   |
| 71Awr90    | D-4   | 3-D        | --Do--              | -----do-----   | Medium, K-spar slightly larger  | Δ 9                         | tr              | 27  | 29              | 35               | All, op, ap, zir, hbl                            | Slight: bio to chl, minor ser, ep, musc                            |               |               | X        |  |   |
| 71Awr86A   | D-4   | 3-D        | --Do--              | Slightly porphyritic   | K-spar phenos to 6x9 mm; qtz phenos to 4x5 mm; medium groundmass            | Δ 3                         |                 | 36  | 33              | 26               | Zir, ap, op                                      | Moderate: ser, musc, ~15% bio to chl, ep                           |               |               |          |  |   |
| 70Awr67b   | D-5   | 3-D        | --Do--              | -----do-----   | K-spar to 5x10 mm; medium groundmass  | * 6                         | <1              | 37  | 23              | 33               | -----do----                                      | Moderate: ser, musc, ~10% bio to chl                               |               |               |          |  |   |
| 70AFr322   | D-5   | 3-D        | --Do--              | Hypidiomorphic granular  | Medium  | * 10                        | 6               | 20<br>Poikilitic                                | 36              | 28<br>Poikilitic | -----do----                                      | Slight: minor chl, ser   |               |               | X        |  |   |
| 71AFr99    | D-4   | 3-D        | Granodiorite        | -----do-----   | --do--  | (20)                        | (2)             | (15)<br>Poikilitic                              | (30)            | (30)             | Zir, ap, op, cpx                                 | Slight: ser, bio to chl  |               |               |          |  |   |
| 71AFr800   | C-4   | 3-D        | Granite             | -----do-----   | --do--  | * 9                         | 0               | 35  | 33              | 23               | Zir, (haloes in bio), topaz?, ep, ap             | Slight: bio to chl, minor ser                                      |               |               | X        |  |   |
| 69AFr702   | C-4   | 3-D        | Granodiorite        | Slightly porphyritic   | Medium (groundmass): K-spar phenos 14x8 mm                                  | * 13                        | <1              | 13  | 45              | 20               |  |  |               |               |          | Metamorphic inclusion of plag, bio, K-spar; iron stain. No thin section.   |   |
| 69AFr689   | C-3   | 3-D        | -----Do-----        | Hypidiomorphic granular  | Medium  | * 12                        | <1              | 8   | 49              | 29               | Zir, ap, op, carb (veinlets)                     | Slight to moderate: chl, ser                                       |               |               | X        | Slightly foliated (micas and qtz aligned).   |   |
| 69AFr674   | C-4   | 3-D        | -----Do-----        | Allotriomorphic  | Fine to medium  | * 9                         | 0               | 17  | 40              | 33               | Musc, zir, (haloes in bio), op, garnet           | Slight: ser  |               |               | X        |  |   |
| 71Awr80    | D-5   | 3-E        | Granite             | Porphyritic  | K-spar + qtz phenos to 1x1 cm; groundmass medium                            | * 9                         | 4               | 28  | 32              | 27               | Zir, ap, sph                                     | Strong: bio + clays 10% bio gone to chl and clay, some ep          |               |               | X        |  |   |
| 70AFr430   | C-6   | 3-E        | --Do--              | -----do-----   | K-spar phenos up to 10x27 mm; groundmass medium                             | * 8                         | <1              | 36  | 27              | 28               | Sph, ap, zir, op, all, carb?                     | Moderate: ser, bio to chl  |               |               |          |  |   |
| 71Awr70    | D-5   | 3-E        | Granodiorite        | Mildly metamorphic texture superimposed on hypidiomorphic-granular | Medium with coarse qtz bands  | (15)                        | 0               | (5)   | (35)            | (45)             | Cpx, hbl, ap, zir, op                            | Slight: ser, bio to chl  |               |               |          |  |   |
| 70AFr468   | D-5   | 3-E        | -----Do-----        | Hypidiomorphic-granular (slightly porphyritic)                     | Medium (K-spar to 6x6 mm)   | * 9                         | 7               | 18  | 38              | 29               | Zir, ap, sph, all                                | Slight: ser, clays, musc, ep. Some bio to chl and clay             |               |               |          | Mafics commonly in clusters  |   |
| 71AFr201   | D-5   | 3-E        | -----Do-----        | Porphyritic  | K-spar, hbl, qtz + plag phenos medium- to coarse-grained. Groundmass medium | * 10                        | 8<br>Poikilitic | 19<br>Poikilitic                                | 39<br>An 15     | 25               | Sph, zir, ap, ep, all,                           | Slight; ser, chl rutile(?)   |               |               | X        | X  |   |
| 70AFr2464a | C-5   | 3-E        | Granite             | Allotriomorphic-granular, moderate cataclasis                      | Medium  | (10)                        | 0               | (30)  | (20)            | (40)             | Zir  | Slight: sph, chl   |               |               |          | Biotite fine grained and interstitial.   |   |
| 70AFr459   | C-5   | 3-E        | --Do--              | Hypidiomorphic-granular  | --do--  | * 7                         | 2               | 23  | 38              | 30               | Zir, ap, op                                      | Moderate: ser, chl   |               |               |          | Weak lineation.  |   |
| 70AFr458   | C-5   | 3-E        | Granodiorite        | Porphyritic  | --do--  | * 12                        | <1              | 17<br>Microcline                                | 43              | 27               | -----do----                                      | Slight: ser, chl   |               |               | X        |  |   |
| 70AFr461   | C-5   | 3-E        | -----Do-----        | Slightly porphyritic   | Medium, K-spar phenos 10x3 mm   | * 9                         | 2               | 19  | 37              | 32               | Zir, ap, op, musc                                | Moderate to strong: ser and clays. Carb, musc about 50% bio to chl |               |               | X        |  |   |
| 70AFr466   | C-5   | 3-E        | -----Do-----        | Hypidiomorphic-granular  | Medium  | * 8                         | <1              | 20  | 41              | 31               | Musc, topaz, zir, (haloes in bio)                | Slight: minor chl  |               |               |          |  |   |
| 70AFr2460a | C-5   | 3-E        | -----Do-----        | Slightly porphyritic   | K-spar + qtz to 3x8 mm; groundmass medium                                   | Δ 11                        | 0               | 20  | 38              | 29               | Musc, ap, zir, (haloes in bio), op               | Moderate: minor chl  |               |               |          |  |   |
| 70AFr2455  | C-5   | 3-E        | -----Do-----        | Porphyritic  | K-spar 3x4 mm, plag 1x3 mm, fine-grained groundmass                         | Δ 8                         | 0               | 20  | 38              | 34               | Sph, ap, zir, minor op                           | Slight: ser, minor chl, musc                                       |               |               |          |  |   |
| 70AFr3112  | C-5   | 3-E        | Granite             | Hypidiomorphic-granular  | Fine  | * 5                         | tr              | 34  | 34              | 25               | Zir, ap, all, op                                 | Slight: ser, musc, carb, small amount bio to chl                   |               |               | X        | X  | Weak lineation.                         |
| 70AFr301   | C-5   | 3-E        | --Do--              | Porphyritic  | K-spar 3x4 mm, plag 1x3 mm, fine-grained groundmass                         | * 1                         | tr              | 32  | 29              | 38               |  |  |               |               |          | No thin section.   |   |
| 70AFr3035  | C-5   | 3-E        | --Do--              | -----do-----   | Phenos 3x7 mm, medium groundmass  | * 5                         | 0               | 27  | 35              | 33               | Zir, (haloes in bio), op, topaz, tour, (rutile?) | Moderate: ser, bio to chl, minor carb, musc                        |               |               | X        | Faint lineation. Spec refers to 70AFr3035 and 70AFr3035a.  |   |
| 70AFr2467  | C-5   | 3-E        | --Do--              | -----do-----   | Poikilitic K-spar to 6x10 mm, qtz to 5x3 mm, medium groundmass              | Δ 6                         | 1               | 34  | 31              | 28               | Zir, (bio haloes), tour, ap, op                  | Moderate: ser, small amount bio to chl                             |               |               |          |  |   |
| 70AFr450   | D-6   | 3-F        | Granodiorite        | Hypidiomorphic-granular (slightly porphyritic)                     | Medium  | * 14                        | 9               | 7   | 48              | 22               | Sph, zir, ap, minor op, topaz(?)                 | Slight: minor chl  |               |               |          |  |   |
| 70AFr437A  | D-6   | 3-F        | Quartz monzonite    | Hypidiomorphic-granular (porphyritic)                              | --do--  | * 10                        | 6               | 18<br>Microcline poikilitic small and myreomite | 35              | 31               | Ap, zir, minor op                                | Moderate: ser, little chl, carb (from hbl)                         |               |               | X        | X  | Spec refers to 70AFr437a and 70AFr437b. |

\* Modal analysis determined from point count on stained slab--generally 1,000 points.  
Δ Modal analysis determined from point count on stained thin section (1,000 points).  
( ) Modal analysis estimated from thin section.