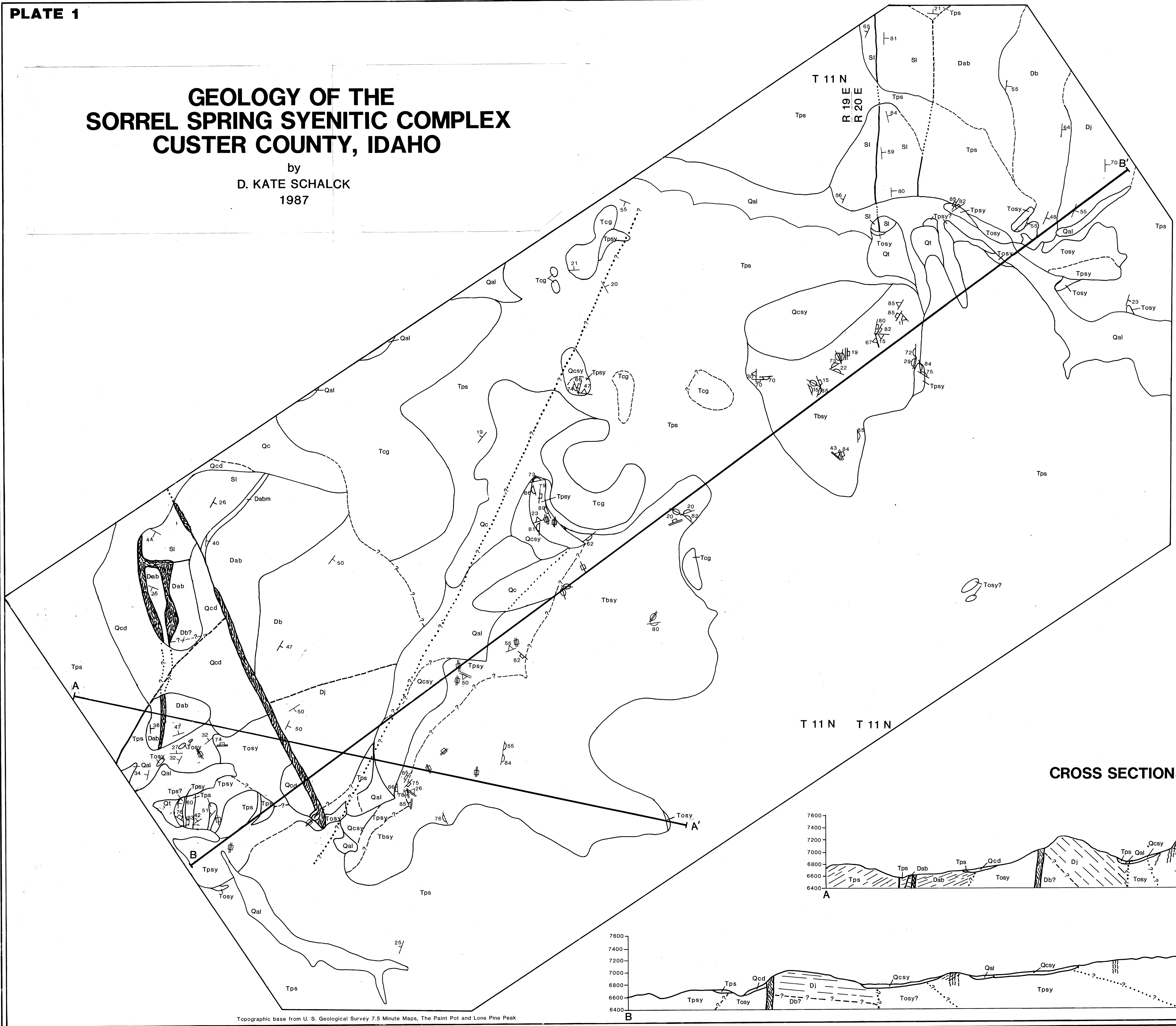


# GEOLOGY OF THE SORREL SPRING SYENITIC COMPLEX CUSTER COUNTY, IDAHO

by  
D. KATE SCHALCK  
1987

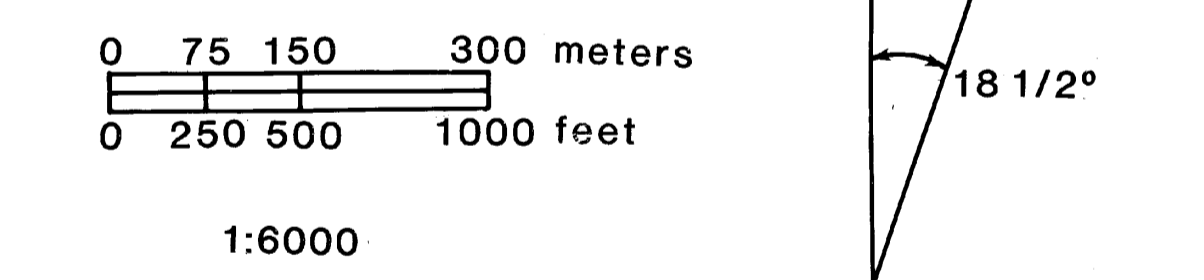
Idaho Geological Survey  
University of Idaho  
Moscow, Idaho 83843  
Technical Report 89-3  
April 1988  
Geologic Map and Cross Sections of the Sorrel Spring Syenitic Complex,  
Custer County, Idaho, by D. Kate Schalck  
Plate 1 of 2. See also, 1987, Geology, Petrology, and Alteration of the Sorrel Spring Syenitic  
Complex, Custer County, Idaho; University of Idaho M. S. Thesis, 112 p.



## SYMBOLS

- - - Contact, dashed where inferred, dotted where covered, queried where uncertain
  - - - Fault, dashed where inferred, dotted where covered, queried where uncertain
  - 36 36 Strike and dip of beds
  - 85 85 Strike and dip of calcite veins \*
  - 21 21 Strike and dip of aplitic dikes \*
  - 76 76 Strike and dip of joints \*
  - 76 76 Strike of vertical joints \*
  - T 11 N Township
  - R 20 E Range
- \* Note: A double line indicates many parallel or subparallel structures

- ADDITIONAL SYMBOLS FOR CROSS SECTIONS
- Bedding
  - Calcite veins
  - Aplitic dikes



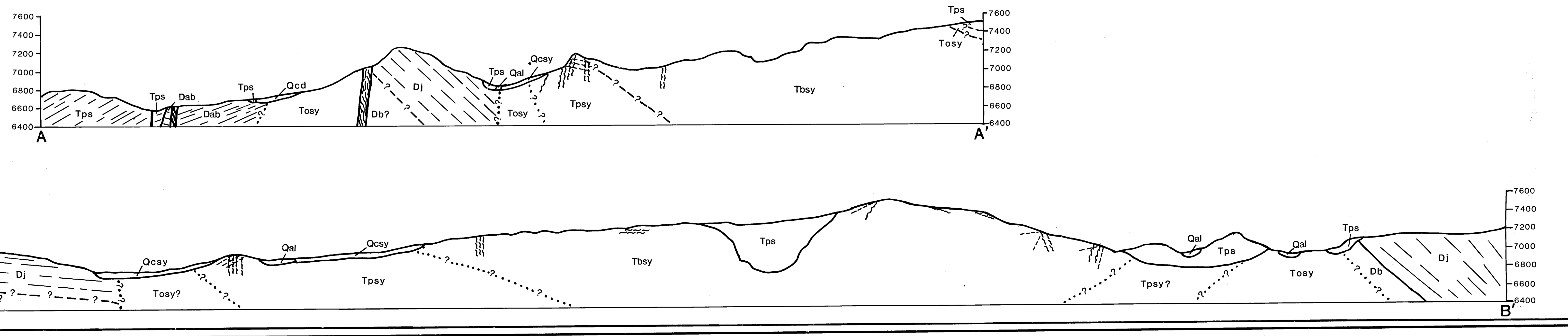
## EXPLANATION

- |            |  |
|------------|--|
| QUATERNARY | <p><b>QUATERNARY DEPOSITS:</b></p> <p>Qal: <b>Quaternary Alluvium:</b><br/>Stream deposits composed of poorly sorted gravel, sand, and silt. May be divided based on type of clasts present.</p> <p>Qc: <b>Quaternary Colluvium (Undivided):</b><br/>Colluvium composed of very poorly sorted gravel, sand, and silt. May be divided based on type of clasts present.</p> <p>Qcd: <b>Quaternary Colluvium (Dolomite):</b><br/>Colluvium composed of dolomite clasts.</p> <p>Qcsy: <b>Quaternary Colluvium (Syenitic):</b><br/>Colluvium composed of syenitic clasts.</p> <p>Qc: <b>Quaternary Terraces:</b><br/>Stream deposits composed of gravel, sand, and silt that are at a higher elevation than the present stream channels.</p>  |
| EOCENE     | <p><b>SORREL SPRING SYENITIC COMPLEX:</b></p> <p>Tpsy: <b>Biotite Syenite:</b><br/>Pink to tan syenite contains abundant Fe-stained martitic cavities lined with subhedral martitic crystals. Biotite is the only mafic mineral which is visible in hand specimen. Pink aplitic dikes cut this rock type.</p> <p>Tpsy: <b>Pyroxene Syenite:</b><br/>Salt and pepper or olive green syenite always contains biotite and may have visible pyroxene crystals. This rock type is cut by abundant olive green aplitic dikes and lamellar calcite veins.</p> <p>Tosy: <b>Olivine Syenite:</b><br/>Very dark, almost black, syenite contains partially to totally altered olivine phenocrysts in a mafic matrix. Pyroxene and biotite are also present, but not always visible in hand specimen. Calcite veins and more rarely quartz and feldspar veins, cut this rock type. Serpentine(?) is also locally present.</p>  |
| DEVONIAN   | <p><b>EIGHTMILE-LIKE VOLCANICLASTIC UNIT:</b></p> <p>Tps: <b>Sedimentary and Tuffaceous Rocks:</b><br/>Sedimentary rocks composed of sandstones, siltstones, and mudstones with at least a partial volcanic component. Contain rare some of abundant plant fossils and impure lignite. Sedimentary rocks grade into tuffaceous sedimentary rocks and tuffs.</p> <p><b>TERTIARY CONGLOMERATES:</b></p> <p>Tps: <b>Quartz and Quartzite Conglomerates:</b><br/>Conglomerates composed of predominantly quartz and quartzite clasts plus fine grained metamorphic and sedimentary clasts with a matrix that is in part volcanic (clay and others, 1978).</p> <p><b>JEFFERSON DOLOMITE:</b></p> <p>Dj: <b>Dolomites:</b><br/>These dark gray dolomites have abundant parallel lamellations. Olivine and recrystallized dolomite are especially abundant near the syenitic intrusion.</p> <p><b>UNIT B:</b></p> <p>Db: <b>Dolomites and Dolomitic Sandstones:</b><br/>These medium gray dolomites are sandy in the lower portion of the unit and commonly laminated in the upper portion of the unit (Hays and Hobbs, 1978).</p> <p><b>UNIT A AND BEARTOOTH SUITE FORMATION:</b></p> <p>Dab: <b>Dolomites and Siltstone Beds:</b><br/>In the upper portion, unit A, is composed of medium gray dolomites with various hues of orange, red, brown, and yellow dolomite also present (Hays and others, 1978). In lower portion, Beartooth Suite formation, consists mostly of sandy and silty rocks, which may be dolomitic.</p> <p>Dab: <b>Siltstone-Mudstone Bed:</b><br/>The lowermost bed is tan to pink cherts to quartzites which are commonly crossbedded.</p> |
| SILURIAN   | <p><b>LAKESTOWN DOLOMITE:</b></p> <p>Sl: <b>Dolomites:</b><br/>These light gray to pink dolomites are relatively pure and are commonly cliff formers.</p>  |

**BIBLIOGRAPHY**

Hays, W. H., McIntyre, D. R., and Hobbs, S. W., 1978, Geologic map of the Lone Pine Peak quadrangle, Custer County, Idaho. U. S. Geological Survey Open-File Report 78-1060.

## CROSS SECTIONS



Topographic base from U. S. Geological Survey 7.5 Minute Maps, The Paint Pot and Lone Pine Peak