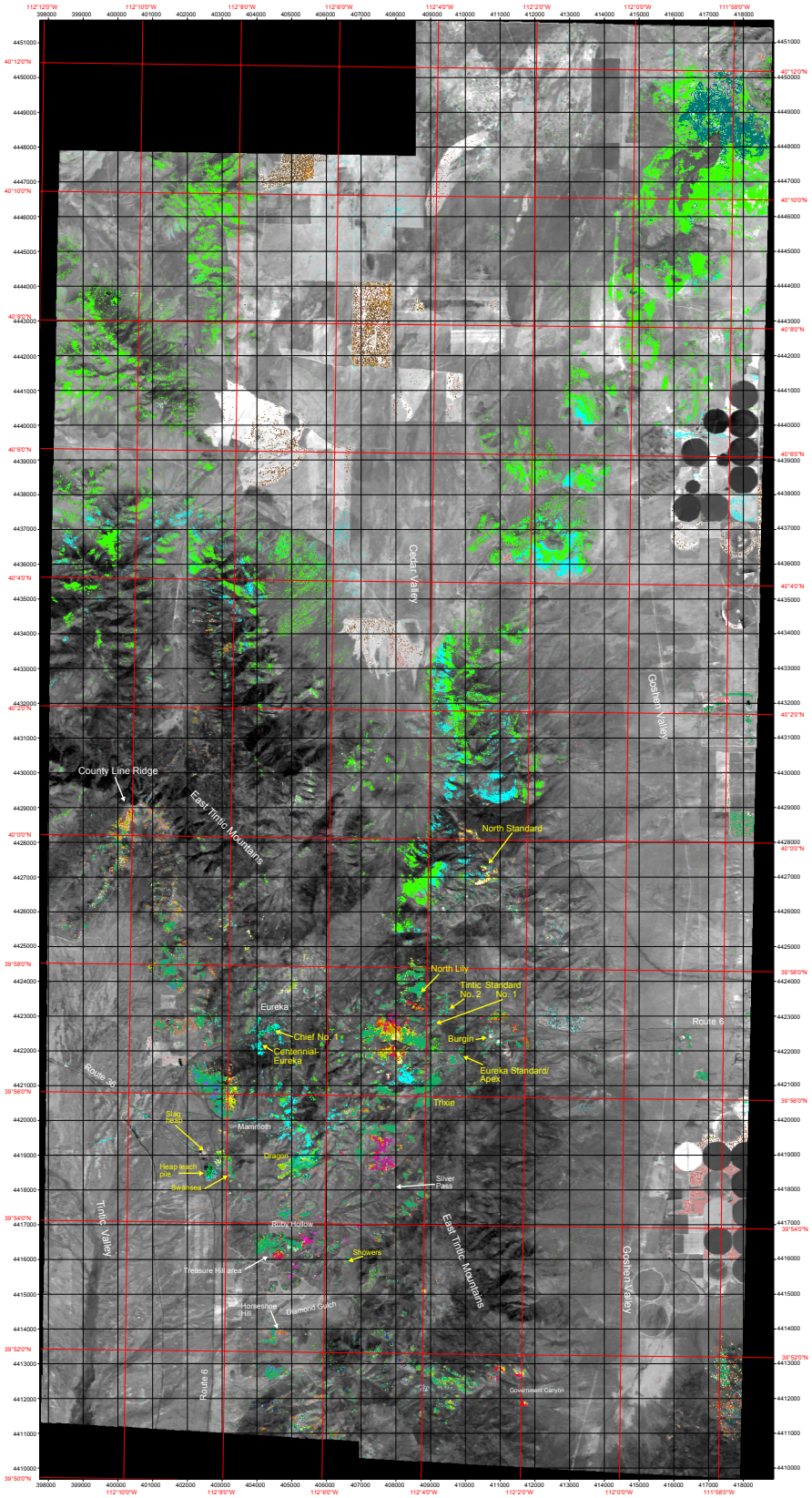

Tintic Mining District, Utah and Juab Counties, Utah

High-altitude AVIRIS Mapping Results

Phyllosilicates, Carbonates, Sulfates, and Sorosilicates

Sulfate Minerals (*)
- alunite
- alunite + kaolinite +/- sericite
- kaolinite (75%) + alunite (25%)
- alunite + pyrophyllite +/- sericite

Kaolinite Group Minerals
- kaolinite + illite/muscovite or smectite
- kaolinite (well-crystallized)
- kaolinite (poorly crystallized and/or impure float)
- halloysite
- dickite (*)
- pyrophyllite
- kaolinite + pyrophyllite

Sericite Group Minerals
- high-Al illite/muscovite
- medium-Al illite/muscovite
- low-Al + Fe-rich illite/muscovite (L = low fit x depth, H = high fit x depth)
- illite/muscovite +/- chlorite
- illite/muscovite + pyrophyllite or kaolinite

- montmorillonite (Ca + Na)
- montmorillonite +/- sericite, clays, alunite (south of County Line Ridge)

Mineral Assemblages with Moderate to High Acid-Neutralizing Potential:

Carbonate Minerals
- calcite
- calcite + muscovite
- dolomite
- calcite + dolomite +/- montmorillonite
- calcite + kaolinite

- epidote (usually occurs with calcite)

* Mapped minerals and mineral mixtures which often occur with pyrite and other sulfide minerals, indicating moderate to high potential for acid generation.

Map Information:

Data Type: high-altitude AVIRIS
Acquisition Date: August 5, 1998
Platform: NASA ER-2
Altitude: 65,000 feet ASL
Georeferencing:
- Roll, pitch, and yaw effects removed
- Individual flightlines georeferenced to USGS DRG maps using second order polynomial transformation

USGS science for a changing world

Scale
1 0 1 2 3 4 5 6 Kilometers
1 0 1 2 3 Miles

Projection: Universal Transverse Mercator
Zone 12
Spheroid: Clarke 1866
Horizontal Datum: NAD27