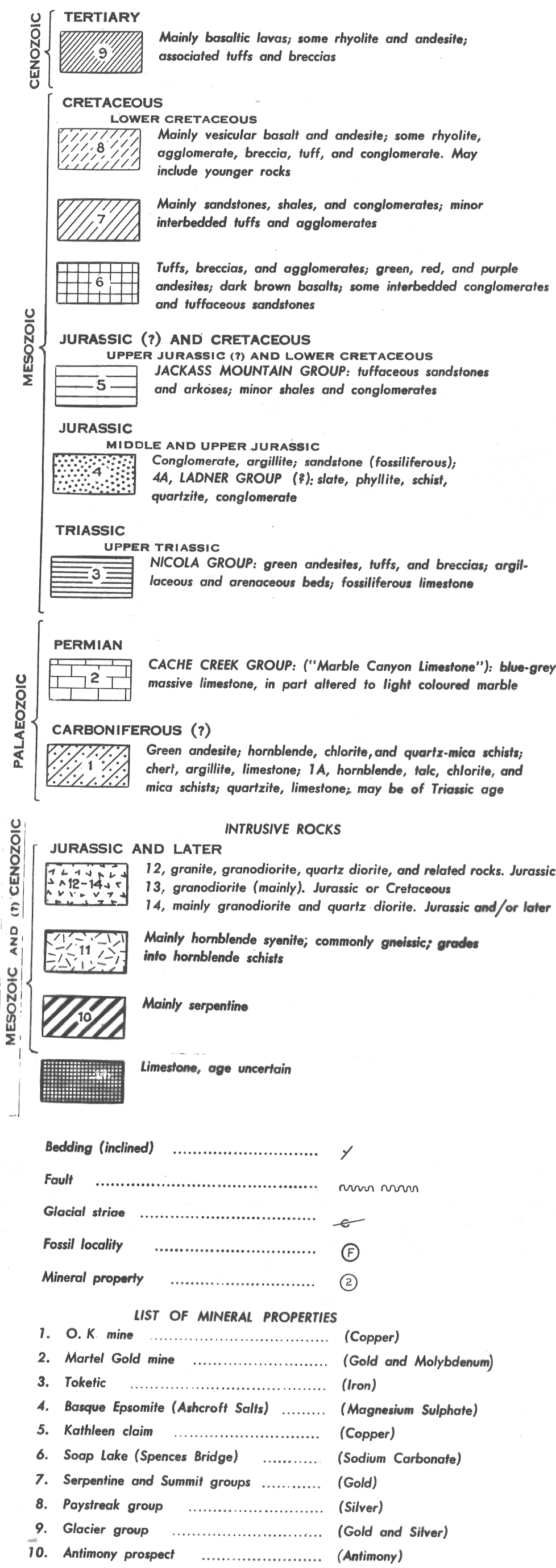


GEOLOGICAL SURVEY

LEGEND



DESCRIPTIVE NOTES

ECONOMIC GEOLOGY

Placer Mining

Considerable placer mining for gold was done years ago along Thompson River within the map-area, but little has been attempted in recent years. However, individual miners still work sporadically along the bars of Thompson and Nicola Rivers and their tributary streams.

Lode Mining

Only a few of the mineral properties within the map-area were visited during the past season. Most of these have been known for many years, but a few represent more recent discoveries.

The copper occurrences in the Highland Valley Camp are closely associated with the granitic batholith east of Spatum. The only copper property visited in this camp was the O. K. mine (1) in which considerable interest was shown during World War I when 10,000 tons of ore was mined and concentrated. The ore carried 3.4 per cent copper, and the concentrate 20.33 per cent copper and 1.19 ounces of silver a ton. The deposit lies within the granitic mass in a fault fissure that strikes north 80 degrees east and dips vertically to steeply south. The copper-bearing solutions caused intense sericitic alteration of the wall-rocks for a width of several feet. At the workings as much as 10 to 12 feet of this altered zone has been mined. The main fissure contains 2 to 4 feet of gouge, and this contains most of the ore, which consists of chalcocite in a gangue of quartz and altered wall-rock. Secondary copper minerals such as azurite, malachite, and chalcocite are conspicuous along the walls of the old open workings. The Kathleen claim (5) lies about 3 miles south of the O. K. mine and carries ore of similar character.

A second mineralized area, on the west side of Thompson River opposite Spatum, extends from Martel Station on the Canadian National Railway to Cornwall Creek. The rocks are those of the Cache Creek group, and have been intruded by the same granitic batholith as that encountered in Highland Valley. Hornblende, chlorite, and quartz-mica schists are common, and small cupolas of the granitic intrusions cut through the older rocks. In general, areas where such a condition exists are considered good for prospecting. Mineral occurrences have been reported from several localities in this region, but most work has been done on the property of Martel Gold Mines, Limited (2). Altogether a total of 1,035 feet of drifting, cross-cutting, and sinking has been done on narrow, lenticular quartz veins that occur in folded and metamorphosed shales, and that contain molybdenite and traces of gold. The property was worked intermittently by a small crew from 1934 to the autumn of 1939, when all operations ceased and the plant was sold by auction. No work has been done since then. In 1937 a sample shipment was tested by the Bureau of Mines of Ottawa. The sample assayed 0.015 ounce gold and 0.04 ounce silver a ton, 1.48 per cent molybdenite, and 0.11 per cent copper. Flotation at a grind of 70 to 80 per cent — 200 mesh gave a concentrate assaying 71.5 per cent molybdenite and 0.71 per cent copper. Minerals present in the ore are molybdenite, chalcocite, pyrite, pyrrhotite, sphalerite, and arsenopyrite.

A deposit of hematite (3) connected with the same batholithic intrusion occurs in a shear zone striking north 75 degrees east and dipping 34 degrees south-east. The shear zone lies entirely within the granitic mass and the hematite occurs as narrow stringers that follow the shearing, or as a cement between broken fragments of the wall-rock. At this locality the zone has been followed by on drill for 50 feet. Some copper minerals occur with the hematite. Other occurrences have been reported to the east, but were not seen or examined, and no work has been done on them for many years.

Several properties were visited on the west side of Fraser River. Most of them are in the pre-batholithic rocks of that region, but one occurrence of antimony lies in a shear zone in the granitic rocks.

The Serpentine and Summit groups (7) contain numerous quartz veins in talc schists and quartzites; the veins are generally parallel to the bedding or schistosity. Many appear to be barren, but others are rusty and pyrrhotitic. One shear at the border of a small body of granodiorite contains pyrite and chalcocite. Some of the veins are said to carry gold.

The Paystreak group (8) contains several small quartz veins that lie conformably in slates about 100 feet east of the main serpentine belt. No ore minerals were seen, but veins on the property have been reported to carry silver.

The Glacier group (9) is underlain by slates, hornblende schists, talcose schists and serpentines. The slates and schists are cut by dykes that are offshoots of the granitic mass to the northeast. Two quartz veins ranging in thickness from a few inches to 6 feet lie in the bedding planes of the slates and schists. Pyrite and arsenopyrite are common in the quartz, and values in gold and silver have been reported.

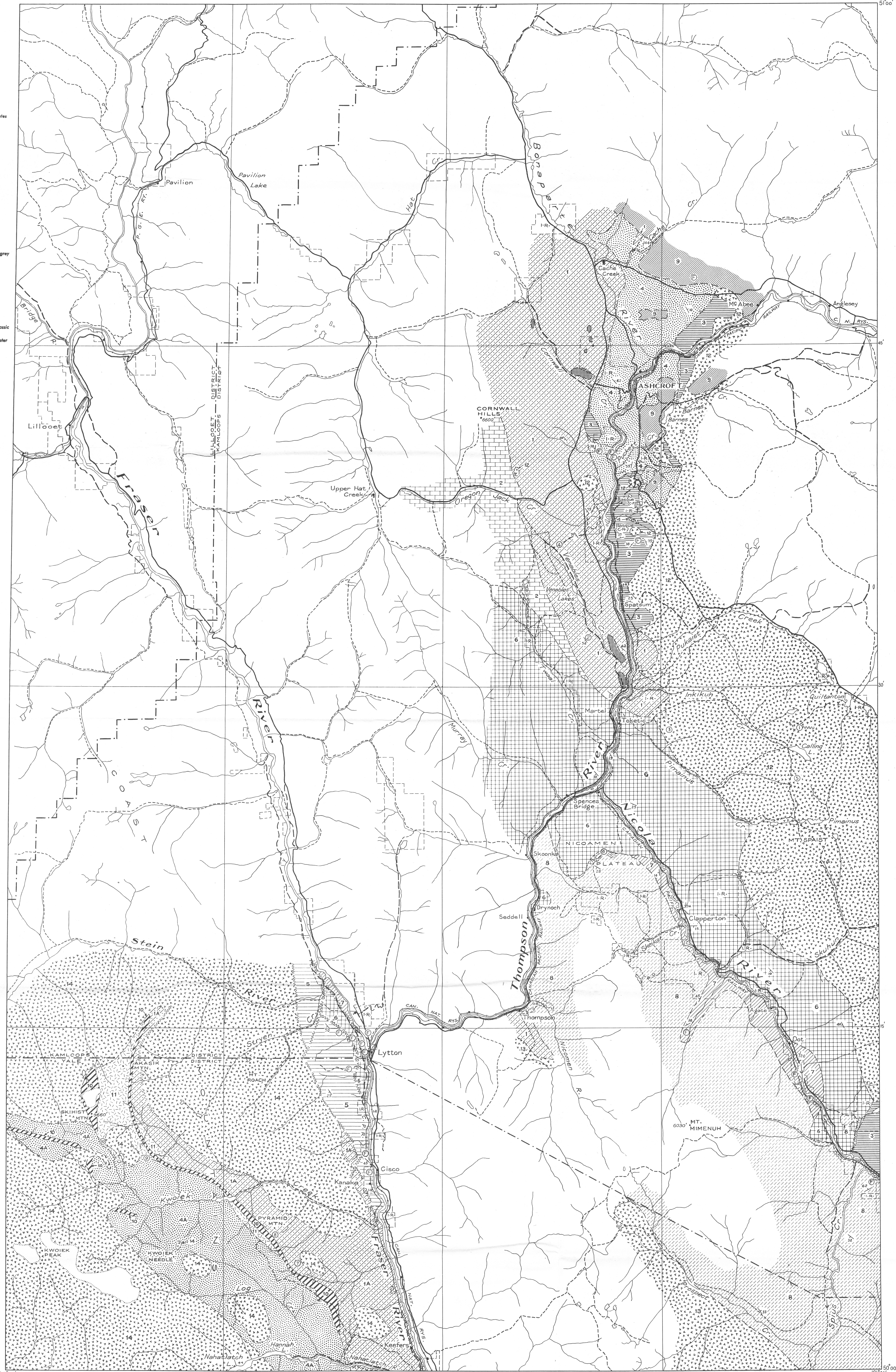
An antimony prospect (10) is exposed in a shear zone that cuts the granitic rocks and may be traced for several hundred feet in them. The shear zone is approximately parallel to the contact between the intrusive and intruded rocks, and the heaviest mineralization occurs where it is closest to the contact. The ore mineral is stibnite, and occurs in veins irregularly distributed in the shear zone.

Non-metallic Deposits

Two non-metallic deposits were visited, one of which has been of economic interest in the past. At the Basque Epsomite deposit (4) high-grade epsomite occurs in four small ponds. The deposit has been worked at intervals from 1919, the latest production being in 1942 when 45 tons of technical salts and 20 tons of medicinal grade were shipped. A full report on the deposit was made by M. F. Goudge<sup>1</sup>. At that time it was estimated that there were 75,500 tons of salts available in the four ponds. Approximately 3,000 tons have since been removed. The other non-metallic deposit (6) occurs on the mud flats and around the shores of Soap Lake on the mountain directly south of Spences Bridge. During each summer the lake partly dries up, leaving the mud flats and shoreline covered with an encrustation of salts composed mainly of sodium carbonate. A full report was made on this occurrence by L. H. Cole<sup>2</sup>. The economic possibilities of the deposit are slight.

<sup>1</sup> Mines Branch, Department of Mines, Canada: Investigations of Mineral Resources and the Mining Industry 1924, pp. 64-75 (1926).

<sup>2</sup> Mines Branch, Department of Mines, Canada: Investigations of Mineral Resources and the Mining Industry 1926, pp. 25-27 (1928).



PRELIMINARY MAP 46-8

ASHCROFT  
KAMLOOPS, LILLOOET AND YALE DISTRICTS  
BRITISH COLUMBIA

Scale: 1 inch to 2 miles



Surveyed and compiled by the Topographical Survey.  
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For topography see Map 408A