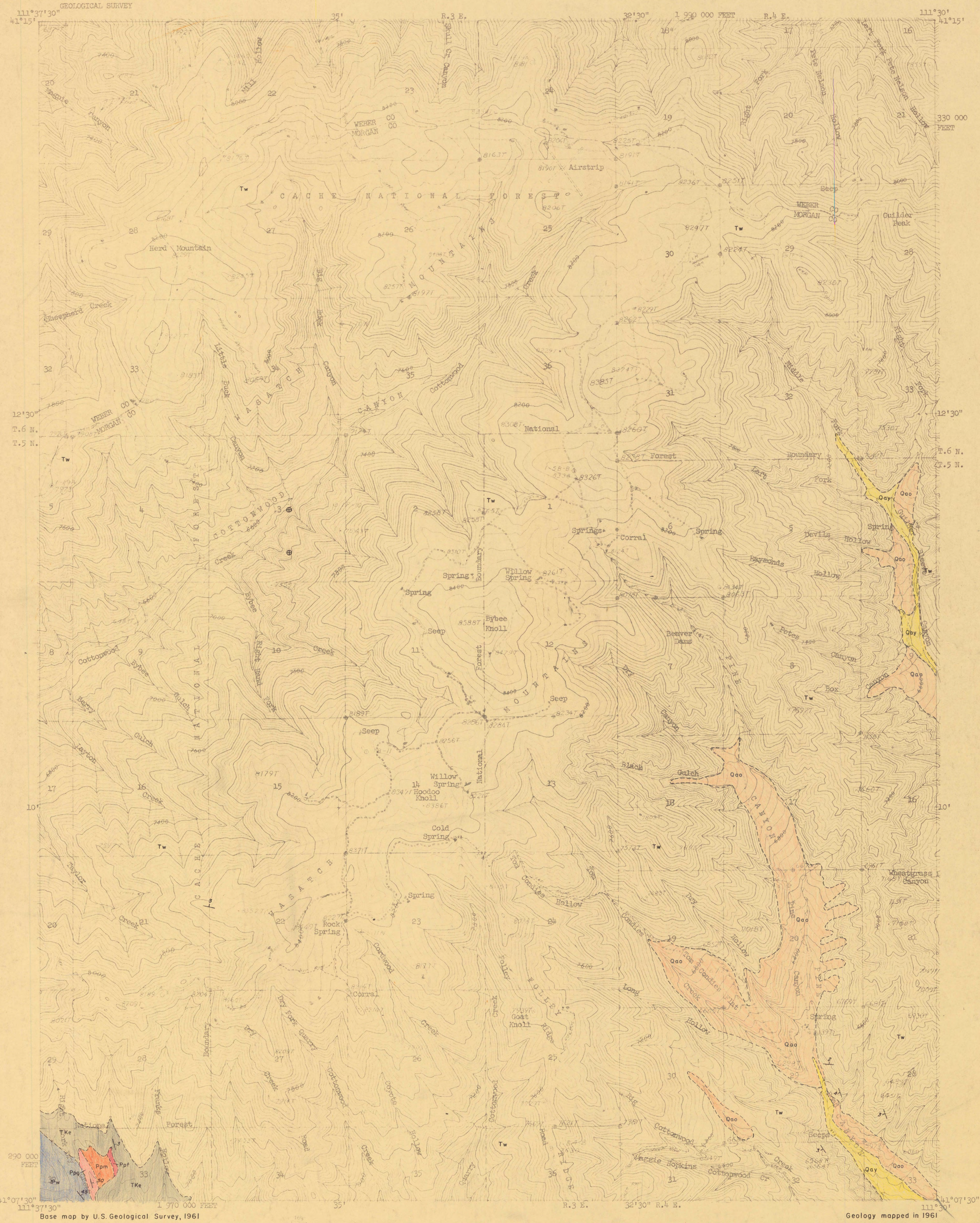
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OGDEN 4 N.E., UTAH



Base map by U.S. Geological Survey, 1961

Mapped by Pacific Area, Geological Survey

This is an unedited copy of an original manuscript including field additions made in 1961

TRUE NORTH
APPROXIMATE MEAN DECLINATION, 1961

SCALE 1:24000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 40 FEET
DASHED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

Geology mapped in 1961

OGDEN 4 N.E., UTAH

PRELIMINARY GEOLOGIC MAP OF THE OGDEN 4 NE QUADRANGLE, MORGAN AND WEBER COUNTIES, UTAH

By
Thomas E. Mullens and Thomas H. Cole

1967

EXPLANATION

Qay — Younger alluvium
Gravel along present flood plains

Qao — Older alluvium
Gravel in terraces and alluvial fans that are graded to a base level above present streams

QUATERNARY

Tw — Wasatch Formation
Reddish-brown conglomerate, conglomeratic sandstone, sandy siltstone, and silty limestone. Weathers to boulder-covered flats and slopes and is poorly exposed except along lower Pine Canyon

TKe — Evanston Formation
Brown conglomeratic grit and gray sandy siltstone. Contains numerous iron sulfide concretions that are mainly weathered to brown iron oxides

TERTIARY

CRETACEOUS

Ppf, Ppm, Ppg — Park City and Phosphoria Formations
Ppf, Franson Member of Park City Formation; light-gray thick-bedded limestone
Ppm, Meade Peak Phosphatic Shale Member of Phosphoria Formation; dark-gray phosphatic mudstone, limestone, and thin beds of phosphorite
Ppg, Grandeur Member of Park City Formation; dark-gray medium-bedded limestone and dolomite

Pw — Weber Quartzite
Light-gray and grayish-orange quartzitic sandstone

PERMIAN

PENNSYLVANIAN

CARBONIFEROUS

Contact
Approximately located

Strike and dip of beds

Horizontal beds

ECONOMIC GEOLOGY

No mineral deposits have been exploited from the Ogden 4 NE quadrangle. Gravel is abundant in the alluvium, but there is no local market. Low-grade phosphate rock is present in the Meade Peak Phosphatic Shale Member of the Phosphoria Formation and the Grandeur Member of the Park City Formation. Cheney and others (1953, p. 11-17) described and sampled the phosphate rock in secs. 23 and 26, T. 4 N., R. 3 E., about 4.5 miles south of the quadrangle. The better zones of phosphate, all in the Meade Peak, described by them are listed below.

Thickness (in feet)	Present P_2O_5	Distance below top of Meade Peak Member (in feet)
5.2	12.7	14.0
3.6	14.7	63.1
6.2	14.6	72.8
0.9	25.8	82.1
3.2	15.6	88.1
3.6	12.5	267.5
3.2	13.2	272.9
2.9	13.8	278.1

Regional studies indicate that the thickness and grade of phosphatic zones in the Meade Peak increase northward. Therefore, the phosphate zones in the Ogden 4 NE quadrangle should be slightly thicker and (or) richer than those exposed 4.5 miles south.

REFERENCE CITED

Cheney, T. M., Smart, R. A., Waring, R. G., and Warner, M. A., 1953, Stratigraphic sections of the Phosphoria Formation in Utah, 1949-51: U.S. Geol. Survey Circ. 306, 40 p.

This report is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey standards.