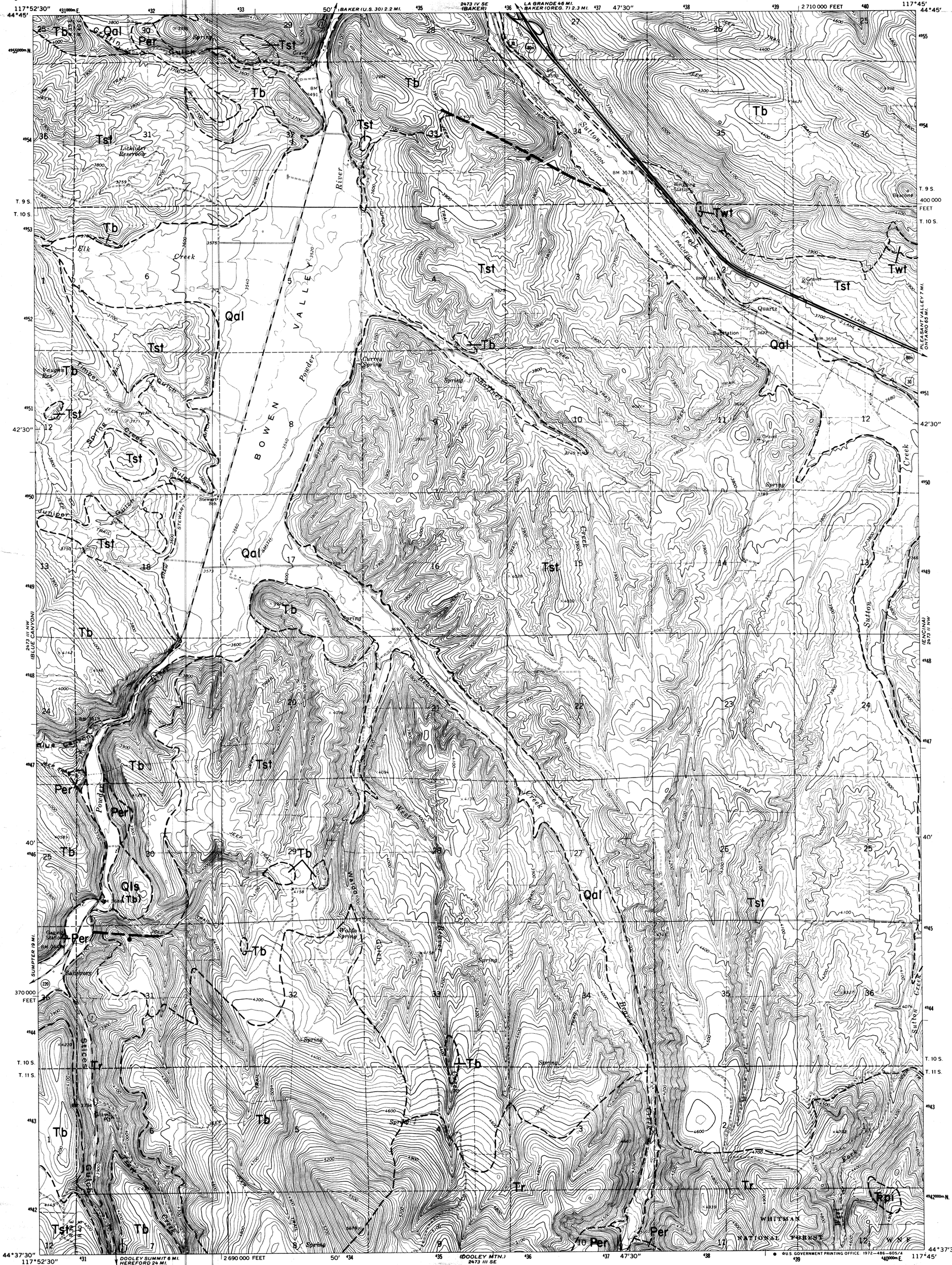
PRELIMINARY
GEOLOGIC MAP
of the
BOWEN VALLEY QUADRANGLE
OREGON

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
RALPH S. MASON, STATE GEOLOGIST

BOWEN VALLEY QUADRANGLE
OREGON–BAKER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



TIME ROCK CHART

				MILLIONS OF YEARS
CENOZOIC	QUATERNARY	Holocene	Qal, Qls	
		Pleistocene		2–3
	TERTIARY	Pliocene	Tst, Twt, Tr, Tb	
		Miocene		
		Oligocene Eocene Paleocene		65
MESOZOIC	CRETACEOUS			
	JURASSIC			
	TRIASSIC			
PALEOZOIC	PERMIAN		Per, Trpi ?-?	225
	PENNSYLVANIAN			280

EXPLANATION

Qal Alluvium: *Mainly valley fill and recent stream channel deposits consisting of unconsolidated silt, sand, and gravel.*

Qls Landslide debris: *Symbols in parentheses identify the rock units composing slide.*

Tst Lacustrine and fluviatile deposits: *Unconsolidated to moderately well-consolidated deposits of clay, silt, sand, and gravel with intermixed and interbedded silicic ash and pumice and minor palagonitic tuff; some deposits are sublacustrine coalescing alluvial fans as indicated by wide distribution of gravel, poor sorting, and lenticular bedding; silicic vitroclastic material commonly altered to secondary silica minerals, alkali feldspar, zeolites, and clay minerals; vertebrate fossils mostly lower Pliocene (Clarendonian); fossil plants are Miocene. In most places, sedimentary deposits are clearly younger than basalt of* Tb, *but they locally underlie or separate basalt flows.*

Twt Silicic welded tuff: *Firmly to moderately welded tuff; light-gray to pale-brown with white pumice fragments; partly flow-banded. Outside map area welded tuff of* Twt *grades laterally into nonwelded tuff and tuffaceous sedimentary rocks in lower part of* Tst.

Tb Basalt: *Dark-gray to black, locally reddish- and dark greenish-gray, chiefly flow-on-flow basalt; includes thin interbeds of poorly to semiconsolidated tuffaceous sedimentary rocks including gravel rich in rounded fragments of pre-Cenozoic rocks; flows range from 10 to 80 ft in thickness; flow tops commonly are scoriaceous; platy jointing and columnar jointing are prominent features locally; clay minerals, zeolites, calcite, common opal, and chalcedony are alteration products in fractures and open spaces; Miocene, based on plant fossils in tuff interbeds and lithologic similarity to basalt flows of the Columbia River Group elsewhere.*

Tr Rhyolite and andesite: *Includes rocks mapped by Gilluly (1937) as Dooley Rhyolite Breccia; rhyolite flows, flow breccia, and tuff; minor andesite and andesite vitrophyre; locally underlies basalt flows of* Tb; *Miocene; dated radiometrically at 14.3 million years.*

Per Marine sedimentary and volcanic rocks: *Elkhorn Ridge Argillite; mostly argillite, chert including radiolarite, and tuff; some lava flows and small pods of limestone; complexly deformed and metamorphosed to greenschist facies; foliated locally; generally poorly exposed. Pennsylvanian, Permian, and Mesozoic fossils have been found in similar rocks in Virtue Hills east of Baker.*

Trpi Intrusive rocks: *Mostly quartz diorite and gabbro; some poorly exposed, fine-grained rocks may be mafic dikes or flows; these rocks probably are equivalent to pre-Upper Triassic rocks of Canyon Mountain Complex.*

SYMBOLS

Contact

Fault (ball and bar on downthrown side)

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1966. Field checked 1967

Polyconic projection. 1927 North American datum
10,000-foot grid based on Oregon coordinate system, north zone
1000-meter Universal Transverse Mercator grid ticks, zone 11

UTM GRID AND 1967 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

OREGON
QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — U.S. Route — State Route

BOWEN VALLEY, OREG.
N4437.5—W11745/7.5
1967
AMS 2473 III NE—SERIES V892

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