STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
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Preliminary Geologic Map of the Dixie Mountain 7.5′ Quadrangle, Columbia, Multnomah, and Washington Counties, Oregon

2008

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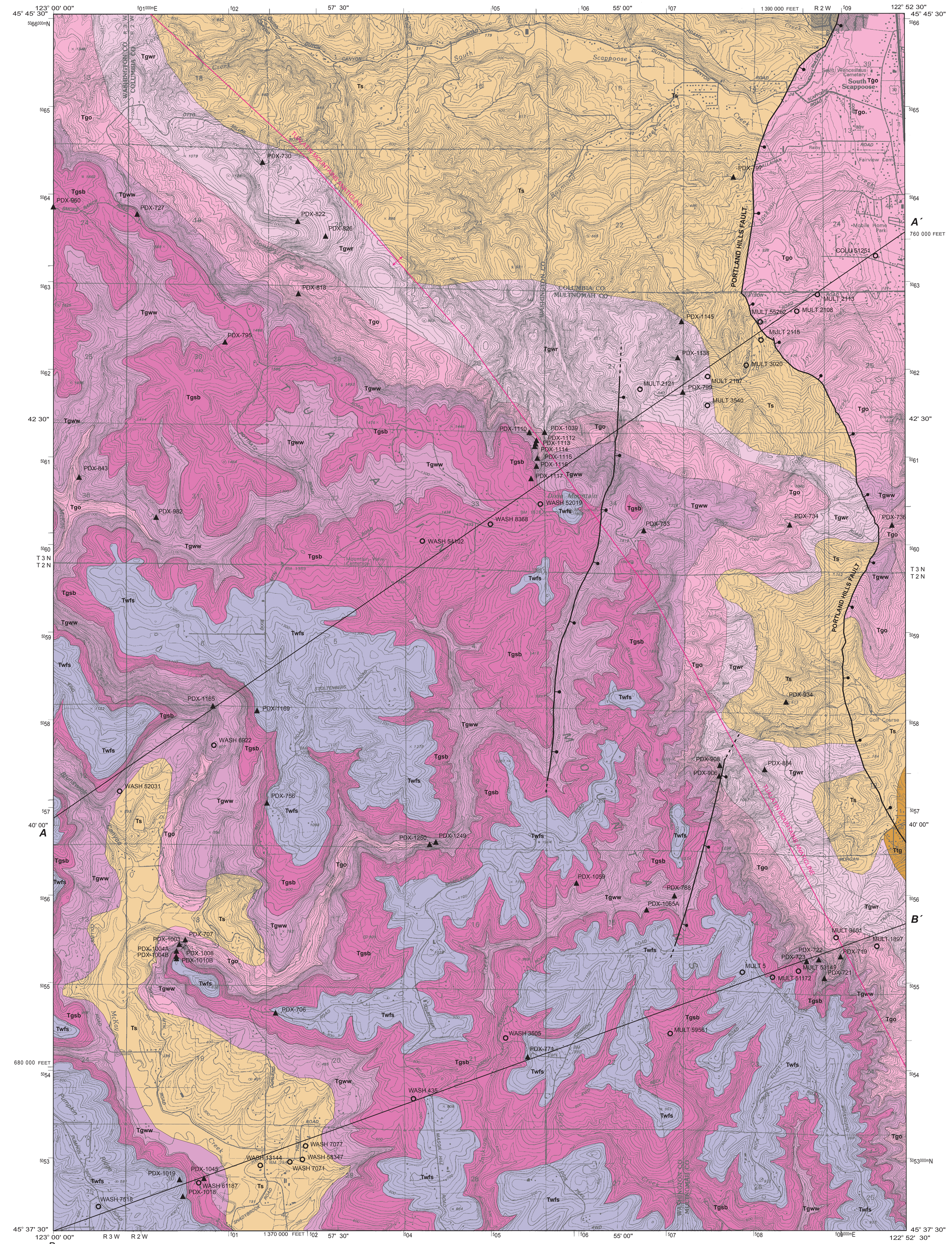
Preliminary Geologic Map of the Dixie Mountain 7.5′ Quadrangle, Columbia, Multnomah, and Washington Counties, Oregon

By Ian P. Madin and Clark A. Niewendorp

This geologic map was funded in part by the U.S. Geological Survey Earthquake Reduction Program, Award 03HQAG0013

PLATE 1

BEDROCK GEOLOGY



Base map by United States Geological Survey

Control by USGS and NOS/NOAA and State of Oregon

Topography compiled from imagery dated 1951
Revised from imagery dated 1990. Map edited 1995
Lambert conformal conic projection
1000-m ticks: Universal Transverse Mercator, zone 10
10,000-ft grid ticks: Oregon Coordinate System, north zone
Vertical datum: National geodetic vertical datum of 1929
Horizontal datum: 1927 North American Datum
Map rotated 1.6° counterclockwise for display

UTM GRID AND 1995 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

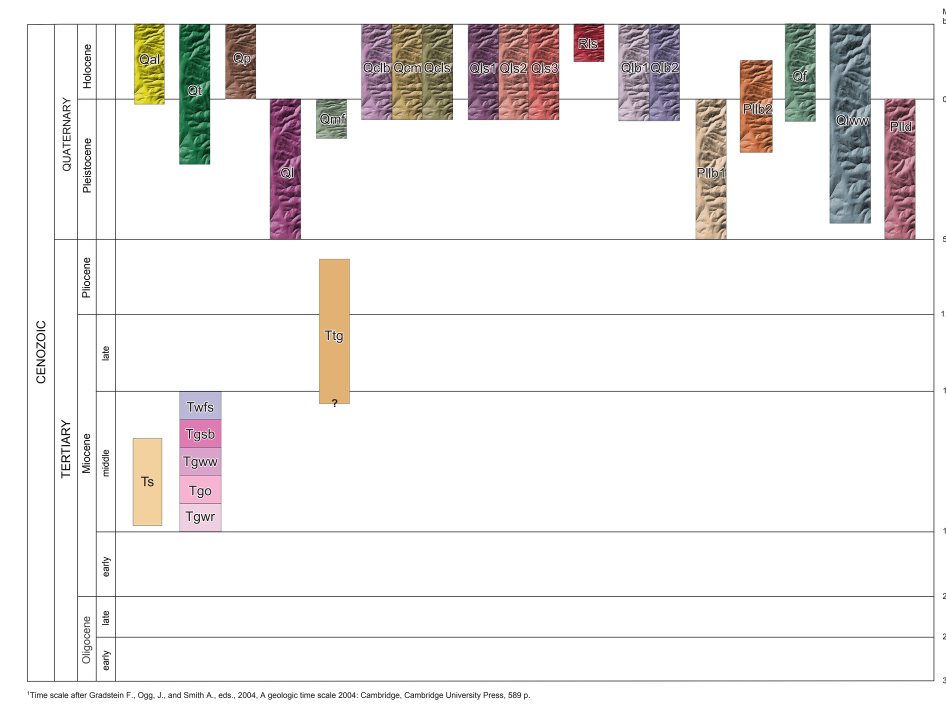
CONTOUR INTERVAL 10 FEET

QUADRANGLE LOCATION

ADJOINING 7.5' QUADRANGLE NAMES: 1 Bacona, 2 Chapman, 3 Saint Helens, 4 Meacham Corner, 5 Sauvie Island, 6 Forest Grove, 7 Hillsboro, 8 Linnton

TIME ROCK CHART

(Surficial units af and b not shown)

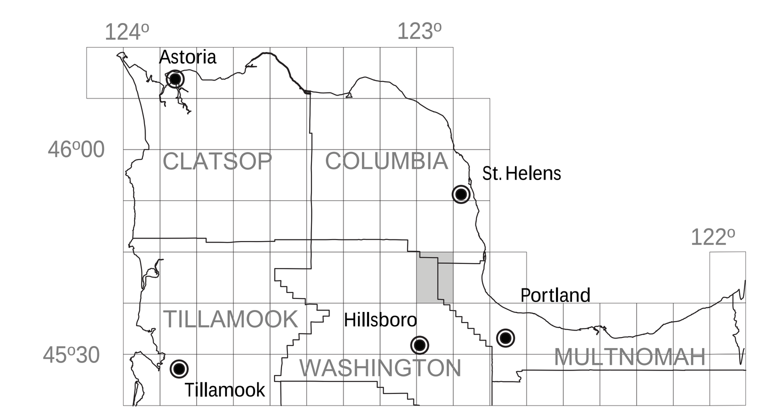


[1]Time scale after Gradstein F., Ogg, J., and Smith A., eds., 2004, A geologic time scale 2004: Cambridge, Cambridge University Press, 589 p.

NOTICE

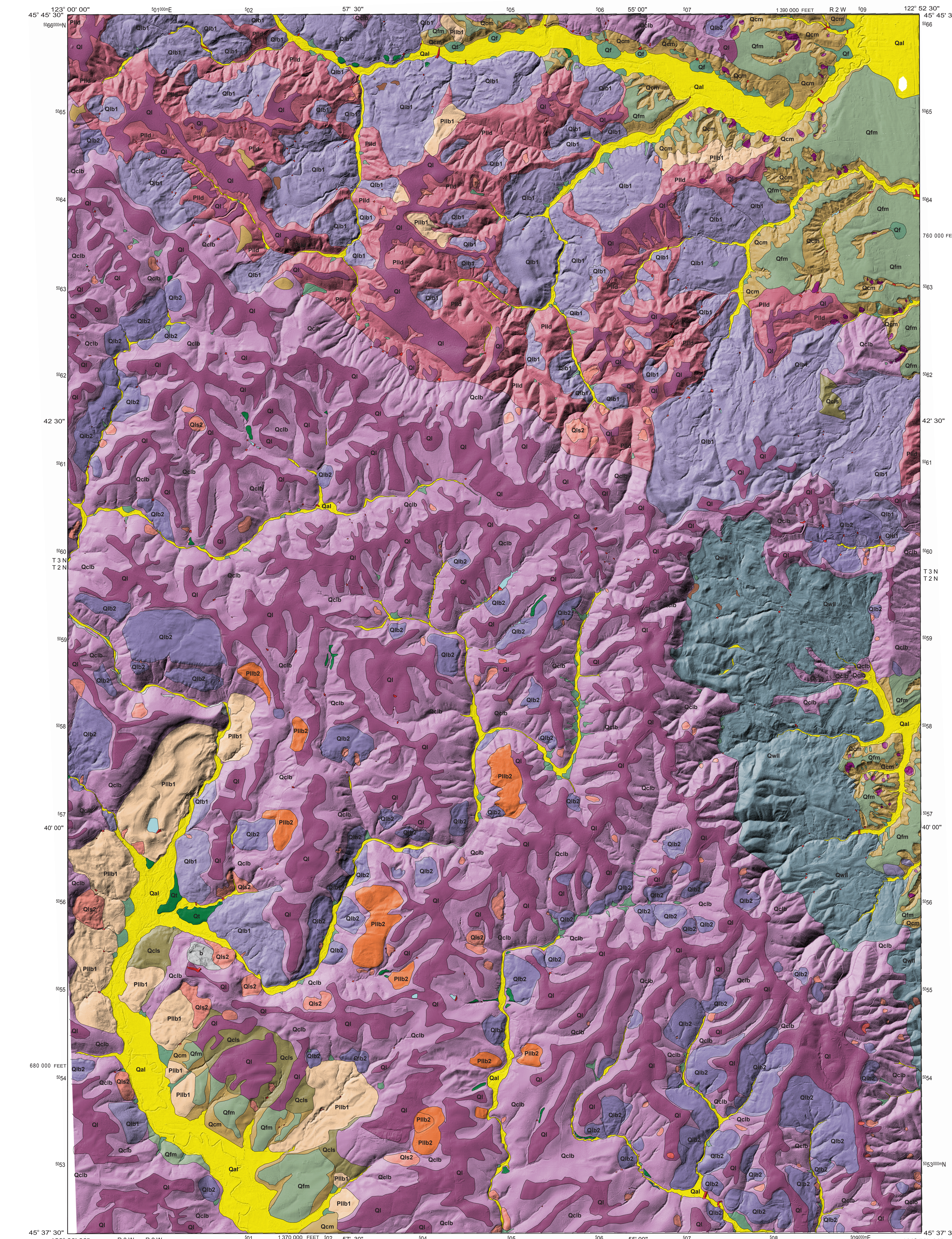
This map cannot serve as a substitute for site-specific investigations by qualified practitioners. Site-specific data may give results that differ from those shown on the maps. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. government.

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code.



INDEX MAP SHOWING AREA OF DIXIE MOUNTAIN 7.5' QUADRANGLE (NOT SHOWN TO SCALE)

SURFICIAL GEOLOGY



Shaded relief base from Portland Lidar Consortium,
Lidar Digital Ground Model (DGM), 2005-2007
Horizontal accuracy ~20 centimeters
Vertical accuracy ~20 centimeters
Projection: Lambert Conformal Conic
Units: International Feet
Central Meridian: -121.00
Standard Parallel: 1: 43.00
Standard Parallel: 2: 45.5
Latitude of Oregon: 42.00
Datum: North American 1983
Map rotated 1.6 degrees counterclockwise for display

UTM GRID AND 1995 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL NOT AVAILABLE

EXPLANATION OF BEDROCK MAP UNITS

(Explanation of units and structure in accompanying text report)

Troutdale Formation (Miocene? and Pliocene)

- Ttg — Conglomerate and sandstone unit (Miocene and Pliocene)

Columbia River Basalt Group (middle and lower Miocene)

Wanapum Basalt (middle Miocene)

Member of Frenchman Springs (middle Miocene)

- Twfs — Basalt of Sand Hollow (middle Miocene)

Grande Ronde Basalt (middle and lower Miocene)

Member of Sentinel Bluffs (middle Miocene)

- Tgsb — Basalt of McCoy Canyon (middle Miocene)

Member of Winter Water (middle Miocene)

- Tgww — Basalt of Winter Water (middle Miocene)

Member of Ortley (middle Miocene)

- Tgo — Basalt of Ortley (middle Miocene)

Member of Wapshilla Ridge (middle Miocene)

- Tgwr — Basalt of Wapshilla Ridge (middle Miocene)

Scappoose Formation (upper Oligocene and lower Miocene)

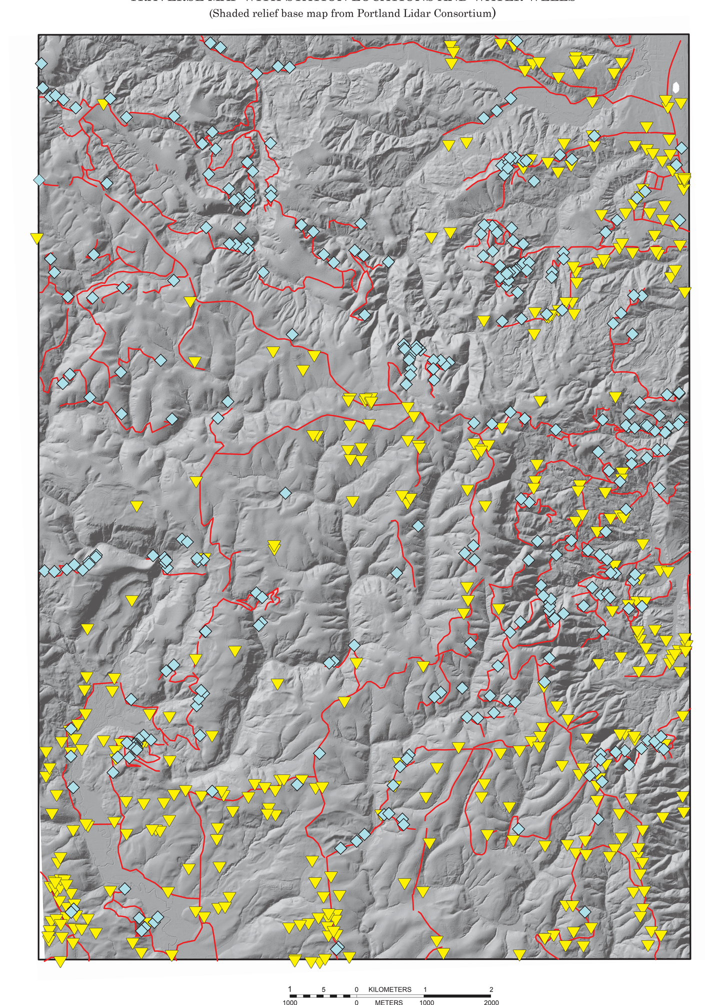
- Ts — Marine sandstone unit (Miocene?)

MAP SYMBOLS

- **Contact** – approximately located
- **Fault** – dashed where approximately located; dotted where concealed; bar and ball on downthrown side
- PDX-1039 — **Location of whole-rock XRF geochemical analysis sample** – labeled with map code, also see Appendix C in the accompanying text report
- WASH 11421 — **Water well** – location of water well used to construct cross sections; domestic supply use (wells designated with Oregon Water Resources Department drill-log identification number: COLO, Columbia, MULT, Multnomah, and WASH, Washington)
- **Abandoned open pit, quarry** – abandoned; type: s = stone
- **Anticlinal fold axis** – approximately located

TRAVERSE MAP WITH STATION LOCATIONS AND WATER WELLS

(Shaded relief base map from Portland Lidar Consortium)



- Traverse route
- Location of station where sample was collected or field observation made
- Location of water well or engineering boring (approximately located)

EXPLANATION OF QUATERNARY SURFICIAL MAP UNITS

(Explanation of units in accompanying text report)

DEPOSITS FORMED BY MOVING WATER AND WIND

- Qal — Alluvium (Holocene)
- Qt — Terrace deposits (late Pleistocene-Holocene)
- Qp — Pond deposits (Quaternary)
- Qmf — Missoula (Bretz) flood deposits (late Pleistocene)
- Ql — Primary loess (Pleistocene)

DEPOSITS FORMED BY MASS TRANSPORT

Colluvium Deposits

- Qclb — Loess and basalt fragment colluvium (Quaternary)
- Qcm — Missoula flood silt colluvium (Quaternary)
- Qcls — Loess and sandstone colluvium (Quaternary)

Landslide Deposits

- Qls1 — Surficial landslides (Pleistocene-Holocene)
- Qls2 — Surficial landslides (Pleistocene-Holocene)
- Qls3 — Surficial landslides (Pleistocene-Holocene)
- Rls — Surficial landslides (Holocene)
- Qlb1 — Bedrock landslides (Pleistocene-Holocene)
- Qlb2 — Bedrock landslides (Pleistocene-Holocene)
- Pllb1 — Bedrock landslides (Pleistocene)
- Pllb2 — Bedrock landslides (Pleistocene-Holocene)
- Qf — Flow and fan deposits (latest Pleistocene-Holocene)
- Qlww — Wildwood landslide complex (Pleistocene-Recent)
- Plld — Dutch Canyon landslide complex (Pleistocene)

OTHER MATERIALS

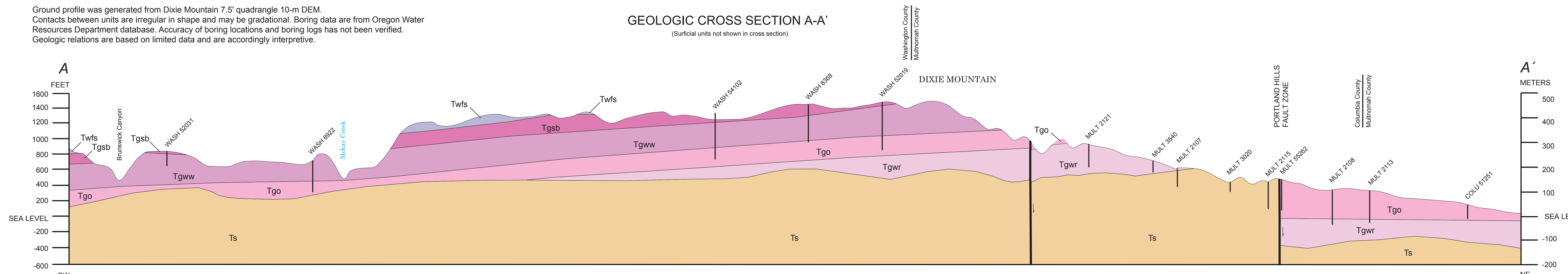
- af — Artificial fill (Anthropocene)
- b — Bedrock exposures

CROSS SECTION NOTES

Ground profile was generated from Dixie Mountain 7.5' quadrangle 10-m DEM.
Contacts between units are irregular in shape and may be gradational. Boring data are from Oregon Water Resources Department database. Accuracy of boring locations and boring logs has not been verified.
Geologic relations are based on limited data and are accordingly interpretive.

GEOLOGIC CROSS SECTION A-A'

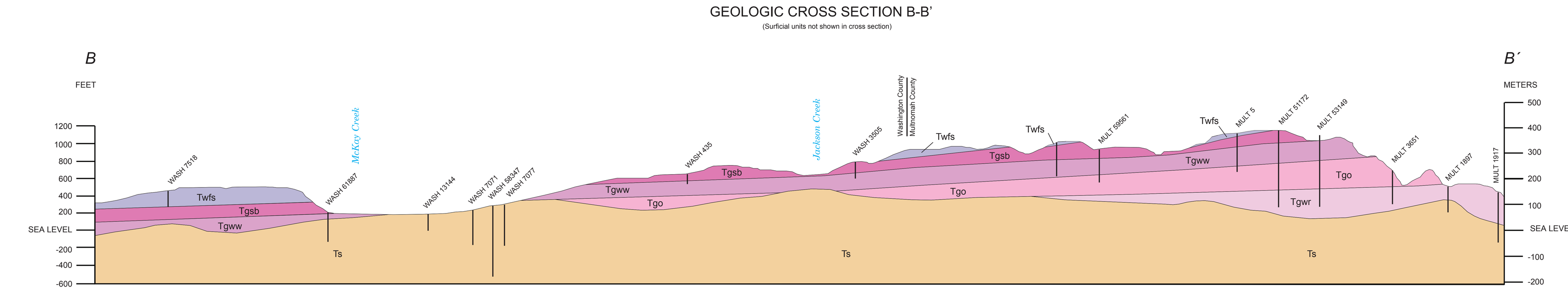
(Surficial units not shown in cross section)



2× vertical exaggeration

GEOLOGIC CROSS SECTION B-B'

(Surficial units not shown in cross section)



2× vertical exaggeration

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Cartography by Clark A. Niewendorp

Field work conducted in 2006 and 2007

Software used: ArcGIS 9.0, MapInfo Professional 9.0, Adobe Illustrator CS2, and Adobe Acrobat 8.0
Digital files are not available on the World Wide Web

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