

# Quick Reference Guide for Users

This User's Guide describes metadata for Data Series 906, Preliminary Geologic Map of the Mount Hood 30-by 60-Minute Quadrangle, Northern Cascade Range, Oregon. The guide is intended to be a quick reference that augments the conventional metadata text document (filename: Metadata\_MH\_20141218, as txt or html). Tables here present the key information needed to assemble the map for viewing. Explanations in this document may also prove helpful for understanding decisions made during the compilation of the geologic map.

## Projection and Datum

All GIS datasets are stored in the Oregon Lambert (Lambert conformal conic) projection, North American 1983 datum (table 1). The corresponding EPSG code is 2992 (<http://spatialreference.org/ref/epsg/2992/>). Point data are provided in spreadsheet format with geographic coordinates in degrees of longitude and latitude, NAD83.

## Files and File Structure

This data series comprises 11 data layers necessary to assemble the geologic map (table 2). Discussion here addresses those that have greater complexity or require look-up tables. The datasets are enumerated fully in the standard metadata document (filename Metadata\_MH\_20141218).

## Coding for Stratigraphic Units (MH\_Geopoly)

Map units are given a map-unit mnemonic in the columnar data (table 3), in order to label polygons according to age and formation or lithology (for example, Qal, Quaternary alluvium). Each map unit also has an integer value for stratigraphic coding (strat\_code) in the shape file attribute table, for users who prefer identifying units by numeric values. Full unit names in the shape file match those in the Description of Map Units that accompanied the 1995 publication. The map-unit symbol is that used on the printed or image version of the map.

## Coding for Map-Unit Contacts (MH\_Contacts)

Given the reconnaissance nature of our mapping, most contacts can be shown uniformly, such as by solid line, with accuracy defined as "precisely or approximately located" (table 4). A few contacts, described as inferred and shown by short-dashed lines on the map, are drawn chiefly on the basis of geomorphology. Shown dotted are internal contacts that allow visual subdivision (on the map)

**Table 1.** Projection and datum.

Element	Definition
Projection:	Lambert conformal conic
Grid coordinate system	Oregon Lambert projection
UTM zone number	10
Unit	International foot (0.3048 m)
1st standard parallel	43
2nd standard parallel	45.5
Central meridian	-120.5
Latitude of projection's origin	41.75
False Easting	1,312,335.958 ft (400,000 m)
False Northing	0
Horizontal datum name	North American datum 1983
Vertical datum	NAVD 1988
Ellipsoid name	GRS 1980
EPSG code	2992

**Table 2.** Files used to produce GIS version of geologic map.

	Filename	File Format
1	MH_Geopoly	ESRI shp and Mapinfo TAB
2	MH_Patterns	ESRI shp and Mapinfo TAB
3	MH_Contacts	ESRI shp and Mapinfo TAB
4	MH_Structure	ESRI shp and Mapinfo TAB
5	MH_Dikes	ESRI shp and Mapinfo TAB
6	MH_Strikedip	MS xls
7	MH_Ventsymbols	MS xls
8	MH_Drillholes	MS xls
9	MH_Magpolarity	MS xls
10	MH_KARages	MS xls
11	MH_Geogrnames	MS xls

according to successively younger age of some deposits emplaced during the Polallie eruptive period on Mount Hood.

A figurative contact, as hachured line, bounds an area in the Salmon Creek drainage. The area is poorly mapped owing to thick vegetation, poor exposure, and limited time for the reconnaissance mapping effort. Strata within the poorly mapped area are middle and possibly upper Miocene andesite lava flows, tuff breccia, and shallow intrusive rocks.

Also within the Contacts layer are lines corresponding to moraine crests. These lines trace geomorphic features, not boundaries of stratigraphic units.

## Coding for Structural Features (MH\_Structure)

Faults are the common structural feature in the map area, and they are coded by integer value such as 21, 22, or 24, with matching descriptions to indicate accuracy of

**Table 3.** Numeric code values and map-unit symbols and names for stratigraphic units. Table is also included as a separate file in the folder of spreadsheets for this publication.

Label	Code	Name	Age
ow	1	Open water	Holocene
g	2	Glacier	Holocene and Pleistocene
Qabl	252	Andesite of Boulder Lake	Pleistocene
Qac	302	Andesite of Cabin Creek	Pleistocene
Qacl	308	Andesite west of Clear Lake	Pleistocene
Qae	224	Andesite of Enola Hill	Pleistocene
Qah	233	Andesite of Hiyu Mountain	Pleistocene
Qahr	221	Andesite of Horseshoe Ridge	Pleistocene
Qal	31	Alluvium	Holocene and Pleistocene
Qall	226	Andesite of Laurance Lake	Pleistocene
Qam	251	Andesite of McCubbins Gulch	Pleistocene
Qap	222	Andesite of Perry Lake	Pleistocene
Qas	303	Andesite of Skyline Road	Pleistocene
Qaw	306	Andesite of Wapinitia Pass	Pleistocene
Qbaa	202	Basaltic andesite of Aschoff Buttes	Pleistocene
Qbac	206	Basaltic andesite of Cloud Cap	Pleistocene
Qbac?	207	Basaltic andesite of Cloud Cap	Pleistocene
Qbal	203	Basaltic andesite of Lost Lake Butte	Pleistocene
Qbap	205	Basaltic andesite of The Pinnacle	Pleistocene
Qbas	204	Basaltic andesite of Stump Creek	Pleistocene
Qbc	208	Basalt of Crutcher Bench	Pleistocene
Qbdc	209	Basaltic andesite of Devil Canyon	Pleistocene
Qbdr	241	Basaltic andesite of Dog River	Pleistocene
Qbp	201	Basaltic andesite of Parkdale	Holocene
Qbr	223	Basaltic andesite of Blue Ridge	Pleistocene
Qca	32	Colluvial and alluvial slope deposits	Holocene and Pleistocene
Qdf	307	Dacite of Frog Lake Buttes	Pleistocene
Qg	41	Glacial deposits	Holocene and Pleistocene
Qget	43	Glacial deposits, till of Evans Creek age	Pleistocene
Qgnt	42	Glacial deposits, till of neoglacial age	Holocene
Qha	133	Pre-Polallie rocks of Mount Hood, andesite and dacite lava	Pleistocene
Qhc	131	Pre-Polallie rocks of Mount Hood, pyroclastic-flow and debris-flow deposits	Pleistocene
Qhc?	132	Pre-Polallie rocks of Mount Hood, pyroclastic-flow and debris-flow deposits	Pleistocene
Qhdl	111	Debris-avalanche deposit of Ladd Creek	Holocene
Qhoc	102	Old Maid eruptive period, pyroclastic-flow and debris-flow deposits	Holocene
Qhol	101	Old Maid eruptive period, lava flows	Holocene
Qhpc	122	Polallie eruptive period, pyroclastic-flow and debris-flow deposits	Pleistocene
Qhpl	121	Polallie eruptive period, lava	Pleistocene
Qhtc	108	Timberline eruptive period, pyroclastic-flow and debris-flow deposits	Holocene
Qiba	62	Intrusive basalt and basaltic andesite	Pleistocene
Qls	34	Landslide deposits	Holocene and Pleistocene
Qo	44	Outwash	Pleistocene
Qob	304	Olivine basalt	Pleistocene
Qoba	305	Older basaltic andesite	Pleistocene
Qoe	45	Outwash of Evans Creek age	Pleistocene
Qsg	231	Rocks of Sandy Glacier volcano	Pleistocene
Qt	33	Talus	Holocene and Pleistocene
QTa	242	Andesite	Pleistocene or Pliocene
QTab	243	Andesite of Badger Butte	Pleistocene or Pliocene

**Table 3.** Numeric code values and map-unit symbols and names for stratigraphic units—Cont.

QTat	227	Andesite of Tom Dick and Harry Mountain	Pleistocene or Pliocene
QTat?	228	Andesite of Tom Dick and Harry Mountain	Pleistocene or Pliocene
QTb	225	Basalt	Pleistocene or Pliocene(?)
QTba	421	Basaltic andesite	Pleistocene or Pliocene(?)
QTbg	256	Basaltic andesite of Grasshopper Point	Pleistocene or Pliocene
QTbme	234	Basaltic andesite of Mirror Lake and Eureka Peak	Pleistocene or Pliocene
QTs	601	Sedimentary rocks and deposits	Pleistocene and Pliocene(?)
QTtla2	321	Volcanic rocks in Trillium Lake area, andesite	Pleistocene or Pliocene
QTtlb	322	Volcanic rocks in Trillium Lake area, basalt	Pleistocene or Pliocene
Qv	61	Cinder cone or small volcano	Quaternary
Qyba	301	Younger basaltic andesite	Pleistocene
Ta	427	Andesite	Pliocene
Taef	482	Andesite of East Fork Hood River	Miocene
Taft	435	Andesite of Fifteenmile Creek	Pliocene
Tafv	483	Andesite of Fivemile Butte	Miocene
Taj	438	Andesite of Jordan Butte	Pliocene and Miocene
Talb	437	Andesite of Little Badger Creek	Pliocene
Taop	561	Andesite of Lolo Pass	Pliocene(?) and Miocene
Taop?	562	Andesite of Lolo Pass	Pliocene(?) and Miocene
Tar	428	Andesite of Rocky Point	Pliocene
Tas	593	Andesite of Salmon Butte	Miocene
Tatc	547	Andesite of Tumble Creek	Pliocene
Tazm	581	Andesite of Zigzag Mountain	Miocene
Tb	548	Basalt	Pliocene and (or) Miocene
Tba	426	Basaltic andesite	Pliocene
Tbah	436	Basaltic andesite of Happy Ridge	Pliocene
Tbam	595	Basaltic andesite of Mack Hall Creek	Miocene
Tbao	423	Basaltic andesite of the Oak Grove Fork	Pliocene
Tbas	439	Basaltic andesite of Sunset Spring	Miocene
Tbbu	235	Basalt of Bull Run Watershed and other ridge-capping basalt	Pliocene and Miocene(?)
Tbg	422	Basalt near Ghost Creek	Pliocene or Miocene
Tbj	549	Basalt of Juniper Flat	Pliocene
Tcgn2	1003	CRBG, Grande Ronde Basalt, normal-polarity unit 2	Miocene
Tcgr2	1004	CRBG, Grande Ronde Basalt, reversed-polarity unit 2	Miocene
Tcwf	1002	CRBG, Wanapum Basalt, Frenchman Springs Member	Miocene
Tcwpr	1001	CRBG, Wanapum Basalt, Priest Rapids Member	Miocene
Td	583	Dalles Formation	Miocene
Tdb	425	Dacite of Beaver Butte	Pliocene
Tdgb	491	Dacite of Graveyard Butte	Pliocene(?) or Miocene
Tdl	429	Dacite north of Long Ridge	Pliocene
Tdm	481	Dacite of Mill Creek Buttes	Miocene
Tdp	594	Dacite of Plaza Lake	Miocene
Tfa	592	Fine-grained andesite	Miocene
Tha	424	Hornblende-bearing andesite	Pliocene
Tia	533	Intrusive andesite	Pliocene and Miocene
Tiba	532	Intrusive basalt or basaltic andesite	Pliocene
Tilh	571	Intrusive rocks of Laurel Hill	Miocene
Tlma	541	Lookout Mountain volcanic sequence, andesite	Pliocene
Tlma?	542	Lookout Mountain volcanic sequence, andesite	Pliocene
Tlmb	543	Lookout Mountain volcanic sequence, basalt	Pliocene

**Table 3.** Numeric code values and map-unit symbols and names for stratigraphic units—Cont.

Tlmd	544	Lookout Mountain volcanic sequence, dacite	Pliocene
Tlmd?	545	Lookout Mountain volcanic sequence, dacite	Pliocene
Tma	591	Andesite of middle and late Miocene age	Miocene
Toa	431	Older andesite	Miocene
Toma	1112	Volcanic rocks of the Mutton Mountains, andesite	Miocene and Oligocene
Tomr	1113	Volcanic rocks of the Mutton Mountains, rhyolite	Miocene and Oligocene
Tomt	1111	Volcanic rocks of the Mutton Mountains, tuff and tuffaceous sedimentary rocks	Miocene and Oligocene
Tos	604	Older sedimentary rocks	Miocene
Tr	449	Rhyolite	Pliocene or Miocene
Trbg	546	Rocks of Barlow Ridge and Gunsight Butte	Pliocene and Miocene
Trgd	442	Rhyodacite of Gordon Butte, domes and flows	Pliocene
Trgx	441	Rhyodacite of Gordon Butte, tuff breccia	Pliocene
Trh	582	Rhododendron Formation	Miocene
Ts	602	Sedimentary rocks	Miocene
Ttlal	323	Volcanic rocks in Trillium Lake area, andesite	Pliocene and (or) Miocene
Ttv	451	Tygh Valley Formation	Pliocene and Miocene(?)
Ttvp	452	Tygh Valley Formation, pyroclastic and sedimentary rocks	Pliocene and Miocene(?)
Tv	531	Cinder cone or small volcano	Tertiary
Tvmf	563	Volcaniclastic rocks of Middle Fork of Hood River	Miocene
Tvmf?	564	Volcaniclastic rocks of Middle Fork of Hood River	Miocene
Tvs	484	Volcaniclastic rocks	Miocene
Tys	603	Younger sedimentary rocks	Pliocene and Miocene(?)
u	2001	Unmapped	

location or topologic rules for map ornamentation (table 5). Additional structural features are fold axes, monocline hinges, and lineaments. Lineaments were mapped from air photos but lack notable expression in the field.

### **Radiometric K-Ar Ages (MH\_KARages)**

Complete age data for previously dated samples in the map area are compiled in table 1 of the included explanatory pamphlet. Noteworthy here is our decision

to reassess some sample-location data that may have been misreported earlier. Consequently, map users should expect some slight visual shifts if the spreadsheet of ages is georegistered and superimposed on an image of the original map publication. Sample locations provided in the spreadsheet, and shown as revised in table 1 of the pamphlet, mark our best knowledge for sample positions as of 2014.

**Table 4.** Numeric code values for map-unit contacts.

<b>Line Code</b>	<b>Line Feature</b>	<b>Line Symbol</b>	<b>Explanation</b>
10	Contact, precisely or approximately located	Solid	Contact exposed or can be estimated closely on basis of outcrops in adjacent units. In some places contact corresponds to abrupt break in slope and was placed on basis of air-photo mapping. Position has been determined by field work to within 100 m on the ground (1 mm on map at 1:100,000 scale)
11	Contact, inferred or imprecise	Short-dashed	Geologic relations or ground surface morphology suggest contact present but not exposed and too uncertain to determine position more precisely than 100-200 m with confidence (as much as 2 mm at 1:100,000 scale)
12	Contact, internal	Dotted	Separates sequentially younger deposits in Polallie eruptive episode
13	Limit of propylitic alteration	Dot-dash	Encloses an area of propylitic clay alteration (shown patterned) in west-central part of map area between Still Creek and Salmon River, as mapped by Wise (1969)
15	Contact, figurative	Hachured	Boundary of areas unmapped or poorly mapped
16	Neatline	Solid	Edge of geologic unit owing to position of map neatline
17	Open-water boundary	Solid	Blue stroke
19	Scratch contact	None (no stroke)	Marks uncertain limit of tuff breccia (area shown patterned) within unit Trby at south end of Barlow Ridge where traverses were limited
41	Moraine crest	Chained circles	Crestline of ridges that formed as lateral moraines. Location approximate; drawn from air photos and topographic maps

**Table 5.** Numeric code values and descriptions for structural features.

<b>Line code</b>	<b>Feature</b>	<b>Line style</b>	<b>Explanation</b>
21	Normal fault, approximately or well located	Solid, with ball and bar on downthrown side	Fault exposed or displaced stratigraphic units sufficiently close that position has been determined by field work to within 100 m on the ground (1.0 mm at 1:100,000 scale)
22	Normal fault, inferred	Short dashed	
24	Normal fault, concealed	Dotted	Trace of fault concealed by younger stratigraphic unit; positional accuracy uncertain but within 2 mm at 1:100,000 (200 m on the ground) and commonly within 1.0 mm (100 m on the ground)
25	Reverse or thrust fault	Solid, sawteeth on upper plate	Right-hand rule for sawteeth ornamentation
26	Reverse or thrust fault, concealed	Dotted, sawteeth on upper plate	Right-hand rule for sawteeth ornamentation
28	Fault, type not reported	Solid	From Swanson and others (1981); may be oblique, reverse, or normal fault
31	Anticline	Solid, with opposing arrowheads	Showing crestline and locally showing plunge; plunge arrowhead at end-node of polyline
32	Syncline	Solid, with converging arrowheads	Showing troughline
33	Monocline hinge, abrupt decrease in direction of arrow	Solid	Lower limb. Right-hand rule for ornamentation, with arrow symbols converging on hinge line
34	Monocline hinge, abrupt increase in direction of arrow	Solid	Upper limb. Right-hand rule for ornamentation, with arrowheads diverging from hinge line
35	Lineament	Dash-dot	Mapped from air photos. Origin most likely by small-offset faults or now-infilled ground cracks