

Geologic Units in the Mount St. Helens 1:100,000 Quadrangle (See explanatory note at bottom of spreadsheet)

Old Symbol	New Symbol	Age	Lithology	Named Unit
---	ice	Holocene	ice	Ice polygons not shown
---	wtr	---	water	---
af	Qf	Holocene	artificial fill, including modified land	---
Qal	Qa	Quaternary	alluvium	---
Qde	Qad(e)	Pleistocene	alpine glacial drift, Fraser-age	Evans Creek Drift
Qdem	Qad(e)	Pleistocene	alpine glacial drift, Fraser-age	Evans Creek Drift
Qdet	Qat(e)	Pleistocene	alpine glacial till, Fraser-age	Evans Creek Drift, till deposits
Qdht	Qapt(h)	Pleistocene	alpine glacial till, pre-Fraser	Hayden Creek Drift, till deposits of
Qdu	Qgu	Pleistocene	glacial drift, undivided	---
Qlh	Qap(lh)	Pleistocene	alpine glacial drift, pre-Fraser	Logan Hill Formation
Qls	Qls	Quaternary	mass-wasting deposits, mostly landslides	---
Qoe	Qao(e)	Pleistocene	alpine glacial outwash, Fraser-age	Evans Creek Drift, outwash deposits of
Qoh	Qapo(h)	Pleistocene	alpine glacial outwash, pre-Fraser	Hayden Creek Drift, outwash deposits of
Qohe	Qapo(e)	Pleistocene	alpine glacial outwash, pre-Fraser	Evans Creek Drift, outwash deposits of
Qoht	Qapt(h)	Pleistocene	alpine glacial till, pre-Fraser	Hayden Creek Drift, till deposits of
Qou	Qao	Pleistocene	alpine glacial outwash, Fraser-age	---
Qow	Qapo(wh)	Pleistocene	alpine glacial outwash, pre-Fraser	Wingate Hill Drift, outwash deposits of
Qsha(1)	Qva(1sh)	Holocene	andesite flows	Mount St. Helens, rocks and deposits of
Qsha(2)	Qva(2sh)	Holocene	andesite flows	Mount St. Helens, rocks and deposits of
Qshb(2)	Qvb(2sh)	Holocene	basalt flows	Mount St. Helens, rocks and deposits of
Qshc	Qv(sh)	Quaternary	volcanic rocks	Mount St. Helens, rocks and deposits of
Qshd(1)	Qiad(1)	Pleistocene	intrusive andesite and dacite	Mount St. Helens, rocks and deposits of
Qshd(2)	Qiad(2)	Holocene	intrusive andesite and dacite	Mount St. Helens, rocks and deposits of
Qshd(3)	Qiad(3)	Holocene	intrusive andesite and dacite	Mount St. Helens, rocks and deposits of
Qshda	Qvc(3sh)			
Qshda(3)	Qvc(3sh)	Holocene	volcaniclastic deposits or rocks	Mount St. Helens, rocks and deposits of
Qshp(3)	Qvp(3sh)	Holocene	pyroclastic flows	Mount St. Helens, rocks and deposits of
Qshu	Qvc(sh)	Quaternary	volcaniclastic deposits or rocks	Mount St. Helens, rocks and deposits of
Qshu(1)	Qvc(1sh)	Holocene	volcaniclastic deposits or rocks	Mount St. Helens, rocks and deposits of
Qshu(2)	Qvc(2sh)	Holocene	volcaniclastic deposits or rocks	Mount St. Helens, rocks and deposits of
Qshu(3)	Qvl(3sh)	Holocene	lahars	Mount St. Helens, rocks and deposits of
QTig	QPLiad(g)	Pleistocene-Pliocene	intrusive andesite and dacite	Goat Mountain, dacite porphyry of
Qtr	Qt	Pleistocene	terraced deposits	---
QTtd	PLMc(t)			
QTtd	PLMc(t)	Pleistocene-Miocene	continental sedimentary deposits or rocks	Troutdale Formation
Qvb	Qvb	Pleistocene	basalt flows	---
Qvma	Qva(mm)	Pleistocene	andesite flows	Marble Mountain, andesite flows of
Qvmm	Qvb(mm)	Pleistocene	basalt flows	Marble Mountain, basalt flows of
Qvth	Qvb(tl)	Quaternary	basalt flows	Thomas Lake, basalt of
Qvtp	Qva(tp)	Pleistocene	andesite flows	Timbered Peak, andesite flows of
Tcb	Mva(cb)	Miocene, lower	andesite flows	Council Bluff, volcanic rocks of
Tcz	En(c)	Eocene, middle to upper	nearshore sedimentary rocks	Cowlitz Formation
Tgo(1)	OEv(cg)	Oligocene-Eocene	volcaniclastic deposits or rocks	Goble Volcanics
Tgo(2)	OEv(a)	Oligocene-Eocene	andesite flows	Goble Volcanics
Tgr	Mv(g)	Miocene, middle	basalt flows (Grande Ronde Basalt, undivided [CRB])	Grande Ronde Basalt, Columbia River Basalt Group
Tgv	Evb(gr)	Eocene, middle to upper	basalt flows	Grays River, volcanic rocks of

Geologic Units in the Mount St. Helens 1:100,000 Quadrangle (See explanatory note at bottom of spreadsheet)

Old Symbol	New Symbol	Age	Lithology	Named Unit
Tia	MOian	Miocene-Oligocene	intrusive andesite	---
Tia(5)	Mva	Miocene, upper	andesite flows	---
Tiaa	Mial(s)	Miocene, lower	argillic alteration	Spirit Lake pluton
Tidi	Mid	Miocene	diorite	---
Tigd	Migd(sl)	Miocene, lower	granodiorite	Spirit Lake pluton
Tipb	Mipb(sl)	Miocene, middle to upper	pebble breccia	Spirit Lake pluton
Tiqd	Miq(sl)	Miocene, lower	quartz diorite	Spirit Lake pluton
Tiqm	Miqm(s)	Miocene, lower	quartz monzonite	Spirit Lake pluton
Tlc	OEm(lc)	Oligocene-Eocene	marine sedimentary rocks	Lincoln Creek Formation
Tsm	Mva(s)	Miocene, lower	andesite flows	Smith Creek Butte, andesite of
Tso	N.A.			In Oregon
Tto	OEn(t)	Oligocene-Eocene	nearshore sedimentary rocks	Toutle Formation
Tva	Eva	Eocene	andesite flows	---
Tva	OEva	Oligocene-Eocene	andesite flows	---
Tva(1)	Ova(1)	Oligocene, lower	andesite flows	---
Tva(2)	MOva(2)	Miocene-Oligocene	andesite flows	---
Tva(3)	MOva(3)	Miocene-Oligocene	andesite flows	---
Tvb(1)	Ovb(1)	Oligocene, lower	basalt flows	---
Tvb(2)	MOvb(2)	Miocene-Oligocene	basalt flows	---
Tvb(3)	MOvb(3)	Miocene-Oligocene	basalt flows	---
Tvc	OEvc	Oligocene-Eocene	volcaniclastic deposits or rocks	---
Tvc(1)	Ovc(1)	Oligocene, lower	volcaniclastic deposits or rocks	---
Tvc(2)	MOvc(2)	Miocene-Oligocene	volcaniclastic deposits or rocks	---
Tvc(3)	MOvc(3)	Miocene-Oligocene	volcaniclastic deposits or rocks	---
Tvd	Evd	Eocene	dacite flows	---
Tvd(1)	Ovd(1)	Oligocene, lower	dacite flows	---
Tvd(2)	Not on map			Not on map
Tvd(3)	MOvd(3)	Miocene-Oligocene	dacite flows	---
Tvt	Evt	Eocene	tuffs and tuff breccias	---
Tvt(1)	Ovt(1)	Oligocene, lower	tuffs and tuff breccias	---
Tvt(2)	Not on map			Not on map
Tvt(3)	MOvt(3)	Miocene-Oligocene	tuffs and tuff breccias	---
Twk	Mc(w)	Miocene, middle to upper	continental sedimentary deposits or rocks	Wilkes Formation

Washington Division of Geology and Earth Resources Open File Report 87-04, Geologic map of the Mount St. Helens quadrangle, Washington and Oregon, compiled by William M. Phillips, was released before the Division adopted a standard symbology for geologic units to be portrayed in 1:100,000, 1:250,000, and 1:500,000 geologic maps of Washington State. Therefore the geologic unit symbology on this map and in the accompanying text does not match that found on many later geologic maps that include the Mount St. Helens 1:100,000 quadrangle. This makes it more difficult for the user to, for example, compare geologic unit descriptions between this map and others that have different symbols for the same unit or to compile a description for a geologic unit that occurs in more than one 1:100,000 quadrangle. This table is included to make it easier to relate the units on this map with units on later maps that use the standard symbology. The column headed "Old Symbol" lists the units on this map alphabetically. The column headed "New Symbol" lists the same units expressed in the standard symbology.