

Geochemical Sample Analyses of Tertiary and Pre-Tertiary Volcanic Rocks in and around the North Bend 7.5-Minute Quadrangle, King County, Washington

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EXPLANATION

Introduction

The attached Excel spreadsheet provides geochemical data obtained during our geologic investigation of the North Bend 7.5-minute quadrangle (Dragovich and others, 2009). Figure 1 provides the sample locations for samples we collected during our investigation of the North Bend quadrangle. *The reader is urged to examine the data in conjunction with the geologic map and explanatory pamphlet in Dragovich and others (2009).* The spreadsheet dataset includes geochemical analyses obtained by Dragovich (2007), Hammond (1963), and Hammond (2008). Locations for the Hammond (1963, 2008) studies are generally or specifically provided in the spreadsheet or can be obtained by inspection of those studies. Geochemical analyses are dominantly Tertiary volcanic rocks but also include one pre-Tertiary greenstone sampled from the western melange belt. Geologic symbols for the bedrock units of the North Bend quadrangle are supplied in Table 1. (See geologic unit symbols in “chem_ofr_spreadsheet.xls”)

Table 1. Major bedrock units in the North Bend quadrangle of Dragovich and others (2009). Note the similarity of some of the geologic symbols such as OEva(r) and OEva. These geologic units cover geographically separate areas and should not be confused.

GEOLOGIC SYMBOL	DESCRIPTION
OEva(r)	Volcanic rocks of Rattlesnake Mtn. Dominantly andesite. Locally divided into:
OEvt(r)	Tuffs and volcaniclastic sediments of the volcanic rocks of Rattlesnake Mtn.
OEvb(r)	Breccias and tuff breccias or the volcanic rocks of Rattlesnake Mtn.
Mva	Mostly andesitic flows; Fifes Peak Formation or part of the Snow Creek formation
MOva	Mostly andesitic flows; Rocks of Eagle Gorge or part of the Snow Creek formation
Ovt	Stampede Pass tuff; mostly pumiceous dacitic tuff
OEvs	Huckleberry Mtn unit or part of Enumclaw formation or part of the Ohanapecosh Formation
OEva	Part of Enumclaw Formation or part of the Ohanapecosh Formation
MEib	Aphanitic Dikes
MOigb	Snoqualmie batholith gabbro
OEia	Andesite porphyries of the Raging River valley
Ec(r)	Arkosic sandstones, siltstones and coal of the Renton Formation
Evt(t)	Mostly breccias and tuffs of Tukwila Formation
Evs(t)	Mostly volcaniclastic rocks and tuffs of the Tukwila Formation
Ec(t)	Arkosic Sandstones, siltstone and coal of the Tiger Mtn Formation
Em(r)	Raging River Formation
Tz	Mylonite, protomylonite, cataclasite in mappable tectonic zones
KJmv(w)	Western mélange belt; mostly greenstone
KJu(w)	Western mélange belt; ultramafite including serpentinite
KJms(w)	Western mélange belt; metasediments mostly including metasandstone and meta-argillite
KJigb(w)	Western mélange belt; metagabbro
KJmcg(w)	Western mélange belt; metaconglomerate
KJgn(w)	Western mélange belt; amphibolitic gneiss and amphibolite

Geochemical Data

We obtained or compiled geochemical analyses are for several of the geologic units in and near the North Bend quadrangle as part of our geologic analyses. Geochemical analyses were performed at the Washington State University geochemistry laboratory in 2007. Analytical methods are provided in Johnson and others (1999). Geochemical composition was determined by both the XRF and ICP-MS analytical methods. Major element data was obtained by the XRF analytical method. Trace element data was largely derived by the ICP method but includes some XRF data. A “zero” is denoted in the spreadsheet where the element was not analyzed. The resultant geochemical data is provided in Excel file “chem_ofr_spreadsheet.xls” which contains four layers of information (see tabs). This first tab “geochemical sample petrography” provides our petrography observations for the samples. (Most samples were petrographically analyzed.) The second tab provides the “normalized chem data” as well as further information (sample location, geologic unit, petrographic or sample information and the data source). The third tab provides the “unnormalized chem data” (the reader should see “normalized chem data” tab for further sample information such as the sampled geologic unit). The trace element data in the “normalized chem data” and “unnormalized chem data” are the same. The last tab provides the “North Bend list of samples”. This list includes our initial sample information provided to the WSU geochemical laboratory for analysis and provides some further location information as well as brief hand-sample notes.

References Cited

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Figure 1. (*next page*) Location of the geochemistry rock samples in the North Bend 7.5-minute quadrangle. Also see location descriptions provided in “North Bend quadrangle sample send list” layer in the “chem_ofr_spreadsheet.”

