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MOUNT ST. HELENS TECHNICAL INFORMATION NETWORK

Friday, June 27, 1980

BULLETIN #28 - "Volcanic Hazard Analysis"

An earlier bulletin in this series (see TIB #4) described the hazards associated with Mount St. Helens. This bulletin describes some of the features of volcanoes so that the processes underway and the way that they are being monitored at Mount St. Helens can be better understood.

Volcanoes owe their structure and behavior to processes which originate at great depths in the earth's interior. The magma (molten rock) consists of partially or completely molten silicate minerals and various gases, principally water vapor, hydrogen, carbon monoxide and carbon dioxide. Beneath active volcanoes the magma occasionally moves towards the earth's surface and erupts in a variety of ways. These ways include lava flows, pyroclastic flows (moving masses of hot gas and rock fragments) and tephra fall (fragmented material of all sizes including ash, ejected during an explosive eruption). The term ash can be somewhat misleading; as far as volcanic eruptions are concerned, "ash" refers to fine particles of pulverized rock or glassy solidified molten magma that are explosively erupted from a vent. In addition, stiff, pasty lava may pile up over and around a vent to form a dome. Rock debris mixed with water may move downslope as a mudflow. Mudflows resemble masses of wet concrete, generally move down river channels, and may be preceeded or followed by floods. This phenomenon should

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