FEDERAL COORDINATING OFFICE

federal emergency management agency

MOUNT ST. HELENS TECHNICAL INFORMATION NETWORK

BULLETIN # 1 - "The Nature of Mount St. Helen's Ash"

The ash erupted from Mount St. Helens volcano on May 18 generally has a chemical composition similar to a common volcanic rock called dacite. The ash is composed of tiny fragments of pumiceous glass and crystals from the molten magma plus fragments of older rock torn off the walls of the vent. The nature of the ash deposited at any particular location depends on the wind patterns prevailing at the time the material was ejected and the distance downwind from the volcano. The composition of the material being ejected changed somewhat during the course of the eruption.

Over much of eastern Washington, where the ash had not been disturbed by the wind, erosion, or excavation, a distinct layering within the ash blanket was observed by geologists studying the ash. While subtle variations are present, depending on both details of the eruption and wind patterns in general, three main layers have been described. The bottom layer, erupted first from the volcano, is a dark grey ash composed of tiny fragments of older rocks and crystal fragments. The middle layer is composed of a mixture of pumice and crystal fragments. The top layer, forming the bulk of the ash over much of eastern Washington and Idaho, is a light grey ash mainly composed of fine particles of volcanic glass and crystals. Because smaller particles could be carried further from the volcano by the wind, the ash fallout at greater distances is composed of finer material.

Chemical analyses of the bulk ash will vary somewhat depending on the character of the ash at the sampling site. Care must be exerted in sampling to assure that other material, such as dirt or non-volcanic debris, have not been worked into the ash.

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