

Map Unit Properties Table: Capulin Volcano National Monument

Colors correspond to the lava flow series map. Bold text refers to sections in the report. Baby Capulin and Mud Hill lava flow series are not mapped within Capulin Volcano National Monument.

Age	Lava Flow Series	Geologic Features and Processes	Geologic Resource Management Issues	Geologic History
QUATERNARY (Pleistocene)	Baby Capulin	<p>Volcanic Rocks and Volcanoes—Baby Capulin is a cinder cone composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica).</p> <p>Raton-Clayton Volcanic Field—the vent at Baby Capulin is one of an estimated 125 vents in the Raton-Clayton volcanic field. Baby Capulin erupted during the Capulin phase (1.69 million–32,000 years ago) in the central part of the volcanic field.</p> <p>Volcanic Features—Baby Capulin is composed of basaltic lava and includes a vent (point feature in the GRI GIS data set).</p> <p>View from Capulin Volcano—prominent feature of the viewshed of Capulin Volcano National Monument, northeast of Capulin Volcano.</p>	None reported.	Capulin Phase —third youngest eruption in the Raton-Clayton volcanic field, 36,000 ± 4,000 years ago.
	Fourth Series	<p>Volcanic Rocks and Volcanoes—Fourth Series lava flows are composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica).</p> <p>Raton-Clayton Volcanic Field—Fourth Series lava flows erupted during the Capulin phase in the central part of the volcanic field.</p> <p>Volcanic Features—Fourth Series lava flows occur at the northeastern corner of Capulin Volcano National Monument. No volcanic features in this series were mapped by Richman (2010).</p> <p>Aeolian Features—vesicles, cavities, and cracks in lava flows filled with loess, which plays a role in soil formation.</p> <p>Paleontological Resources—no fossils documented within Capulin Volcano National Monument, to date. Potential for tree molds on lava flows, and pack rat middens in larger cavities of flows. .</p>	Erosion and Cinder Mining —erosion as a result of cinder mining activities occurs in Fourth Series lava flows.	Capulin Phase (Boca Eruption) —Fourth Series lava extruded from a vent in the boca and flowed northward, then eastward between Capulin Volcano and Mud Hill. The Capulin Volcano eruption then ceased.
	Third Series	<p>Volcanic Rocks and Volcanoes—Third Series lava flows are composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica).</p> <p>Raton-Clayton Volcanic Field—Third Series lava flows erupted during the Capulin phase in the central part of the volcanic field.</p> <p>Volcanic Features—Third Series lava flows contain lava, lava ridges, levees, squeeze-ups, and tumuli.</p> <p>View from Capulin Volcano—lava of this series covers the area between Capulin Volcano and the town of Capulin, New Mexico.</p> <p>Aeolian Features—vesicles, cavities, and cracks in lava flows filled with loess, which plays a role in soil formation.</p> <p>Paleontological Resources—no fossils documented within Capulin Volcano National Monument, to date. Potential for tree molds on lava flows, and pack rat middens in larger cavities of flows.</p>	Volcano Road —traverses Third Series lava flows.	Capulin Phase (Boca Eruption) —Third Series lava extruded from a vent in the boca and flowed to the south and west.
	Second Series	<p>Volcanic Rocks and Volcanoes—Second Series lava flows composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica).</p> <p>Raton-Clayton Volcanic Field—Second Series lava flows erupted during the Capulin phase in the central part of the volcanic field.</p> <p>Volcanic Features—Second Series lava flows contain levees, squeeze-ups, and tumuli.</p> <p>View from Capulin Volcano—prominent pressure ridges are visible on these lava flows.</p> <p>Aeolian Features—vesicles, cavities, and cracks in lava flows filled with loess, which plays a role in soil formation.</p> <p>Paleontological Resources—no fossils documented within Capulin Volcano National Monument, to date. Potential for tree molds on lava flows, and pack rat middens in larger cavities of flows.</p>	<p>Volcano Road—traverses Second Series lava flows.</p> <p>Erosion—areas of erosion along the Lava Flow Trail.</p>	Capulin Phase (Boca Eruption) —Second Series lava flows extruded from a vent in the boca and flowed to the south and southeast.

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Age	Lava Flow Series	Geologic Features and Processes	Geologic Resource Management Issues	Geologic History
QUATERNARY (Pleistocene)	Boca	<p>Volcanic Rocks and Volcanoes—boca is composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica). Boca is on the western side of the main cinder cone.</p> <p>Raton-Clayton Volcanic Field—boca contains two of an estimated 125 vents in the volcanic field. Boca erupted during the Capulin phase concentrated in the central part of the volcanic field.</p> <p>Capulin Volcano—because activity shifted to vents in the boca, Capulin Volcano was never breached, and its classic shape was preserved.</p> <p>Volcanic Features—boca contains vents, boca ramparts, levees, lava lakes, push-ups, rafted cinder cones, spatter deposits, spatter flows, lava cascades, lava ridges, squeeze-ups, and tumuli.</p> <p>View from Capulin Volcano—boca is visible below the parking area at the summit.</p> <p>Paleontological Resources—no fossils documented within Capulin Volcano National Monument, to date. Potential for tree molds on lava flows, and pack rat middens in larger cavities of flows.</p>	<p>Cave Management—boca contains cave features and collapsed lava tubes; a cave inventory and appropriate management plan of these features are needed.</p> <p>Geothermal Systems and Hydrothermal Features—possible “hot vent” near the maintenance building needs to be identified and documented.</p>	<p>Capulin Phase (Boca Eruption)—after eruption of the main cinder cone ceased, lava erupted out of the boca.</p>
	Main Cone	<p>Volcanic Rocks and Volcanoes—main cone is composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica). Capulin Volcano is a textbook example of a cinder cone.</p> <p>Raton-Clayton Volcanic Field—Capulin Volcano contains one of an estimated 125 vents in the volcanic field. The volcano erupted during the Capulin phase concentrated in the central part of the field.</p> <p>Capulin Volcano—archetypal cinder cone.</p> <p>Volcanic Features—main cone contains a vent.</p> <p>Age of Capulin Volcano—once considered less than 10,000 years old but now known to be 55,000 ± 2,000 years old.</p> <p>View from Capulin Volcano—dramatic view of the Raton-Clayton volcanic field; 360° panorama along Crater Rim Trail of four states (New Mexico, Colorado, Oklahoma, and Texas) on clear days.</p> <p>Aeolian Features—the asymmetry of the crater rim, which is higher on the northeastern side, is an outcome of prevailing-wind direction during the eruption.</p>	<p>Volcano Road—spirals around Capulin Volcano, and is the greatest impact to the geologic resources at Capulin Volcano National Monument.</p> <p>Erosion—arguably the most significant threat to the geologic resources, particularly the cinder cone, at the monument.</p> <p>Slope Movements—ongoing processes (e.g., rockfalls, cinder slides, debris flows, and slope failures); particular concern where they impact infrastructure, primarily Volcano Road.</p> <p>Volcano Hazards and Risk—a future eruption in the Raton-Clayton volcanic field will likely create a new cinder cone, rather than erupting from an existing one. In addition to cone formation, other hazards include effusive lava flows, localized ash fall, earthquakes (as magma rises and causes shaking), volcanic gases, volcanic projectiles such as bombs, and wildfires.</p>	<p>Capulin Phase (Cone Building Eruption)—fissure or series of small vents coalesced into one main vent, building up Capulin Volcano. The cinder-cone eruption lasted for a period of weeks to years 55,000 ± 2,000 years ago.</p>
	First Series	<p>Volcanic Rocks and Volcanoes—First Series lava flows are composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica).</p> <p>Raton-Clayton Volcanic Field—First Series lava flows contain one of an estimated 125 vents in the volcanic field. Lava flows are part of the Capulin phase concentrated in the central part of the field.</p> <p>Volcanic Features—First Series lava flows contain a vent and a pooled lava flow.</p> <p>Aeolian Features—vesicles, cavities, and cracks in lava flows filled with loess, which plays a role in soil formation.</p> <p>Paleontological Resources—no fossils documented within Capulin Volcano National Monument, to date. Potential for tree molds on lava flows, and pack rat middens in larger cavities of flows.</p>	<p>None reported.</p>	<p>Capulin Phase (First Series Lava Flows)—emplaced early in the Capulin Volcano eruption; eruption of First Series lava is contemporaneous with cone building. Lava flowed eastward from fissure or series of small vents.</p>
	Mud Hill	<p>Volcanic Rocks and Volcanoes—composed of Capulin Basalt (dark, fluid lava, containing 50%–55% silica). Mud Hill formed during a phreatomagmatic eruption (driven by the interaction of magma and water) followed by eruption of basalt flows, which breached the side of the volcano.</p> <p>Raton-Clayton Volcanic Field—Mud Hill contains two of an estimated 125 vents in the volcanic field. The volcano is part of the Capulin phase concentrated in the central part of the field.</p> <p>Volcanic Features—vents.</p> <p>View from Capulin Volcano—Mud Hill is a prominent feature in the viewshed of Capulin Volcano National Monument, northeast of Capulin Volcano.</p>	<p>None reported.</p>	<p>Capulin Phase—erupted 1,690,000 ± 30,000 years ago. Notably older than surrounding volcanoes.</p>