

Preliminary Geologic Map of the Eagle Rock 7.5' Quadrangle, Crook County, Oregon

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and should not be interpreted as necessarily representing the official policies, either

Andesite intrusion (late Eocene to early Oligocene) - Dark gray to black, N70°E trending, closed texture, fine-grained, holocrystalline, aphyric to clinopyroxene-microphyric andesite dike or plug that intrudes sedimentary rocks of unit Tces and dacite porphyry of unit Tcdp on the east end of Prineville Reservoir. The dike has distinct columnar jointing with pseudohexagonal columns up to 0.5 m across. Columns are generally convex in form and converge upward in the outcrop. The dike is more massive near the top, where it is marked by red and black swirled flow banding. In thin section, the andesite is composed of discreet subhedral to euhedral microphenocrysts and glomerocrysts of clinopyroxene up to 0.5 mm across that are enclosed in a groundmass of equigranular, trachytic plagioclase and intersertal, yellow-brown, devitrified glass. The alignment of groundmass plagioclase crystals define two distinct flow demains. The andesite consists of 15 percent clinopyroxene microphenocrysts and glomerocrysts, 65 percent groundmass, and 20 percent devitrified glass. On the basis of chemical analysis, the intrusion is an andesite with 59.6 weight percent SiO,; 16.2 weight percent Al<sub>2</sub>O<sub>3</sub>; 1.1 weight percent K<sub>2</sub>O; and 3.6 weight percent Na<sub>2</sub>O (Sample 17; Table 1; Figure 1). A late Eocene to early Oligocene age is

Volcaniclastic sedimentary rocks (late Eocene to early Oligocene) - Redweathering, massive to thinly bedded, 0.02 to 0.6 m thick beds, of volcanic sandstone, siltstone, and claystone, that weather to form rounded, badland topography along Prineville Reservoir west of Owl Creek. Includes interbedded white, fine-grained tuffaceous sandstone beds and matrixsupported conglomerate deposits at the mouth of Owl Creek and at the east end of Prineville Reservoir. Sedimentary strata are dominated by eubedral plagioclase crystals up to 2 mm long and rounded volcanic rock fragments, all of which have been largely converted to clay. Overlain by alkali olivine basalt flows of unit Tceb to the west and tuffaceous sediments of unit Tjtt to the northeast. Considered by Robinson and others (1990) to be equivalent to the Big Basin Member of the John Day Formation (Fisher and Rensenberger, 1972). On the basis of stratigraphic position beneath unit Tceb, unit Tces is considered to have a late Eocene to early Oligocene age

**Vent deposits (Eocene)** – Red to gray weathering welded scoria and fluidal volcanic bombs draped by gray, aphyric spatter locally exposed beneath claystone of unit Tces. An Eocene age

Andesite and dacite porphyry (Eocene) - Red-weathering, coarse-grained, feldsparphyric, andesite and dacite porphyry that forms platy to columnar jointed, dome-like masses, exposed south of Prineville Reservoir. In thin section the andesite porphyry is seriate-textured, glomeroporphyritic and plagioclase, clinopyroxene, and hornblende-phyric. Plagioclase, clinopyroxene, hornblende, and olivine phenocrysts are up to 3.5 mm across, are variably zoned and twinned, and characteristically have embayed and etched surfaces. Glomerocrysts of clinopyroxene, plagioclase, and hornblende exceed 7 mm across. Phenocrysts and glomerocrysts are enclosed in a fine-grained, equigranular groundmass of plagioclase and intergranular pyroxene and olivine. The porphyry is ~15 percent plagioclase phenocrysts, 15 percent clinopyroxene phenocrysts, 15 percent hornblende phenocrysts, 5 percent glomerocrysts, 50 percent groundmass, and 1 percent accessory opaque minerals. The unit includes bulbous masses of feldspar-phyric glassy black vitrophyre that weathers to massive gray cliff-forming outcrops and contains xenoliths up to 0.01 m across. Red jasper is found scattered along the contact with the porphyry. The unit also contains sparse pods of green, matrix supported, andesite porphyry breccia exposed along Prineville Reservoir. On the basis of geochemical analyses, the porphyry and vitrophyre in the quadrangle have the composition of an andesite, with 58.63 – 62.01 weight percent SiO,; 15.61 weight per cent Al<sub>2</sub>O,; 0.84 weight percent TiO,; and 1.65 weight percent K<sub>2</sub>O (Samples 15 and 16; Table 1; Figure 1). Vitrophyre bodies contain relatively high levels of barium (1485 ppm Ba), strontium (671 ppm Sr), and depleted amounts of niobium (18.7 ppm Nb). An

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Method	Material	K <sub>2</sub> 0 wt. %	<sup>40</sup> Ar rad x 10 <sup>11</sup>	Percent <sup>40</sup> Ar rad
	dated			
K/Ar	Plagioclase	0.396	1.849	21.47
		dated	dated	dated