

DESCRIPTION OF GEOLOGIC MAP UNITS

This map shows the distribution of geologic units southeast of the town of Brady, in the central Texas sand district near the town of Voca, in the Spice Rock Quadrangle. Geologic units were mapped, and structural elements were measured in the field; where bedrock units are covered by surficial units and vegetation, or access is limited, units were interpreted using soil data, well-drilling records, previous mapping, and surveys.

BEDROCK UNITS

QUATERNARY	Qal	Qal—Alluvium: River and stream floodplain deposits, silty sand, mud, channel gravel, rounded pebbles, and cobbles.
	Qt	Qt—Fluvial terrace deposits: Gravel, silt, sand, and clay, increasing amounts of granite grus and sand around the Town Mountain Granite and Hickory sand formations. These deposits are mostly flood level along entrenched streams, and accumulations of granite grus in low-lying drainage areas. Fluvial characteristics such as point bars, oxbows, and abandoned-channel segments, are well preserved.
CRETACEOUS	Ked	Ked—Edwards Limestone: Fine-grained, argillaceous, locally siliceous, thin-bedded to nodular and massive, light gray to light brown limestone with marine inlited, gastropod and rudistid fossils. Some dolomite and chert nodules are present, with a total unit thickness between 10 and 40 m.
	Kcp	Kcp—Comanche Peak Limestone: Fine-grained, argillaceous, gray to light gray, extensively burrowed, locally siliceous limestone with frequent thin interbedded shale layers. Thickness ranges from 5 to 25 m.
	Khe	Khe—Hensell Formation: Fine- to very fine-grained, tan-yellow, orange and red, locally coarse-grained, argillaceous, massive, locally cross-bedded and ripple-marked sandstone. Sandstone contains interbeds of sandy, silty, calcareous claystone and sandy, caliche-cemented conglomerate with pebbles of chert and quartz, and basal granite grus gravel.
ORDOVICIAN	Ottc	Ottc—Staendebach Member Limestone: Fine- to medium-grained, light gray to brown-gray, thick- to thin-bedded limestone (Ottc), and dolomitic limestone (Ottm). Locally cherty and grading westward into predominantly limestone, with gastropod, cephalopod, and trilobite fossils preserved in cherty areas. Thickness is about 200 m, thinning westward.
	Ottm	Ottm—Staendebach Member Limestone: Fine- to medium-grained, light gray to brown-gray, thick- to thin-bedded limestone (Ottc), and dolomitic limestone (Ottm). Locally cherty and grading westward into predominantly limestone, with gastropod, cephalopod, and trilobite fossils preserved in cherty areas. Thickness is about 200 m, thinning westward.
WILLIAMS FORMATION	Cws	Cws—San Saba Member (undivided): Thick- to thin-bedded, occasionally cherty or glauconitic, fine- to very fine-grained, gray to dark gray limestone and dolomite. Thickness is about 100 m, becoming more granular and limestone-dominant westward.
	Cwpp	Cwpp—Point Peak Member: Thinly bedded, gray to brown-gray, siltstone containing abundant authigenic feldspar with interbeds of fine-grained stromatolitic limestone, intraformational conglomerate, and thin, silty, gray-green shale beds. Thickness is about 40 m, thinning westward.
CAMBRIAN	Cwm	Cwm—Morgan Creek Limestone Member: Granular, glauconitic, thick- to thin-bedded, brown to gray-brown limestone with thin interbeds of siltstone. Fossils include trilobites, calcareous brachiopods, and aphanitic stromatolite in upper sections. Thickness is about 30 to 40 m.
	Cww	Cww—Wedge Sandstone Member: Medium-grained, thick-bedded, brown and yellow-to-orange, massive, friable sandstone, grading upward into calcareous sandstone and into the Morgan Creek Limestone (Cwm). Sandstone varies between 5 to 10 m thick.
RILEY FORMATION	CrI	CrI—Lion Mountain Sandstone Member: medium- to coarse-grained, gray-green to yellow-gray, massive, crossbedded, quartz-rich, glauconitic sandstone, with thin interbeds of shale, siltstone, and limestone with phosphatic brachiopod. Thickness is about 10 to 20 m.
	CrC	CrC—Cap Mountain Limestone Member: Granular, thick-bedded, occasionally glauconitic or oolitic, green-gray to yellow-brown limestone, grading into calcareous sandstone and siltstone at the base. Limestone is about 50 to 75 m thick, and thins northward.
PROTEROZOIC	Crhu	Crhu—Hickory Sandstone Member: Crhu—medium- to coarse-grained, exceptionally well rounded, hematite-cemented, orange and red to red-brown, ~30 m thick sandstone.
	Crhm	Crhm—fine- to medium-grained argillaceous, silty, thin-bedded, orange to red, crossbedded, ~60 m thick sandstone. Crhl—fine- to coarse-grained, poorly sorted, yellow-gray to yellow, crossbedded, ~30m thick sandstone, with coarse sand and gravel base in contact with nonconformable Precambrian rocks.
	Crhl	Crhl—fine- to coarse-grained, poorly sorted, yellow-gray to yellow, crossbedded, ~30m thick sandstone, with coarse sand and gravel base in contact with nonconformable Precambrian rocks.
PROTEROZOIC	Pps	Pps—Packsaddle Schist: Alternating layers of hornblende-bearing biotite schist and quartz-feldspar-mica schist, with prevalent pygmatic leucosomes and recumbent folding. Quartz veins and leucocratic fine-grained quartz-feldspar layers are common and form local migmatization.
	Pplc	Pplc—Lost Creek Gneiss: Fine- to medium-grained, two-mica augen gneiss, with biotite-rich melanocratic bands and quartz-feldspar leucocratic bands. The augen gneiss is distinct from the underlying Valley Spring Gneiss, and grades upward into the Packsaddle Schist (Pps).
	Ptm	Ptm—Town Mountain Granite: Coarse-grained, massive, homogenous, pink, quartz-plagioclase-microcline, biotite-bearing, porphyritic, K-feldspar megacrystic granite.

MAP SYMBOLS

QUARRY/SAND-PIT AREA	NORMAL FAULT—Showing sense of motion. U, upthrown block; D, downthrown block.
BODY OF WATER	GEOCHEMICAL SAMPLE LOCALITY—Location of sample taken for analytical work.
RIVER	BEDDING—Sedimentary bedding plane showing strike and dip.
INTERMITTENT STREAM/CREEK	HORIZONTAL BEDDING
ROAD	NORMAL FAULT (inferred)
	NORMAL FAULT (concealed)

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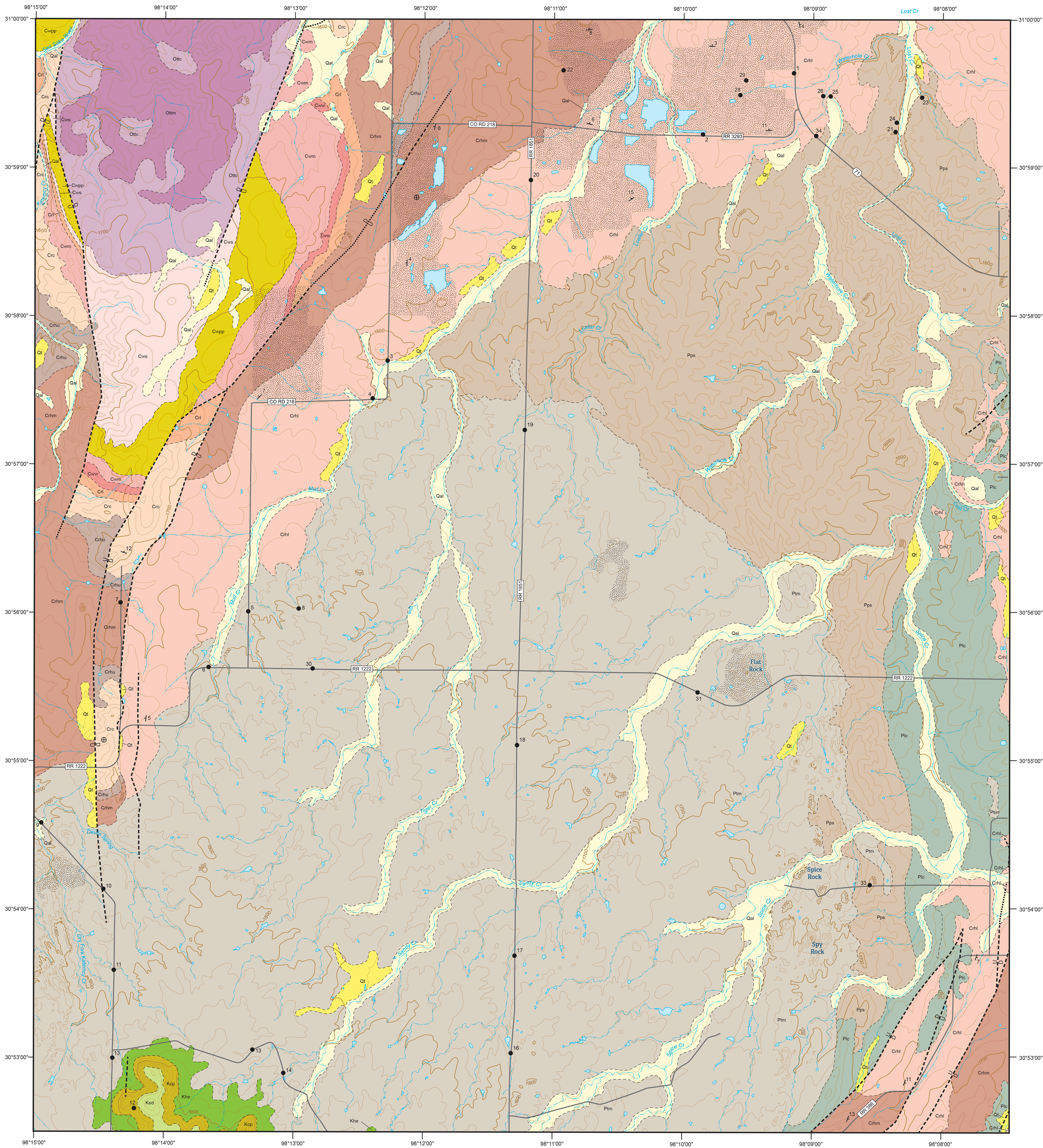
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Topographic base map from:
U.S. Geological Survey (1963—photo-revised
1979, field checked 1963)
Projection:
Universal Transverse Mercator Zone 14N
Datum:
North American Datum of 1983
Previous bedrock geologic field investigations by:
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GEOLOGIC MAP OF THE
SPICE ROCK QUADRANGLE, TEXAS

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