

A Scenic Drive with a Geologic Twist

by Steve Williams

Rocks, hillsides, mountains, and streams all have stories to tell if you know their language, and today's tour is designed to introduce you to a little of that geologic language.

My hope is that knowing about some of Colorado's geologic features will help make your drive along today's scenic route a bit more interesting. Mileages are only estimates, (figure + or - 0.5 mile from what is estimated).

I have taken this drive many times with friends new to Colorado or who have traveled very little away from the confines of the interstates.

The Start is at the Conoco gas station, Morrison exit and C470, a good spot to dewater self and attend to other things as desired.

Check or zero your trip odometer. All mileages were taken using a '98 526i with well worn tires.

The 65 mile drive takes about 1.5 hours, plus another 15 - 20 minutes if you take the side trip into Perry Park. ***Highly Recommended. The drive ends in downtown Castle Rock where there are many unique and reasonably priced restaurants.

1. Leave the parking area near the gas station and **enter southbound C470**.

Immediately upon entry onto C470 and for the next several miles look to your right at the hillsides. Note the clear break in vegetation, grasses below and then shrubs and trees above on the hillside. A very clear delineation is seen almost as if someone took a pencil and drew a squiggly line, with grasses below and trees above the line.

Why this line of demarcation?

Because of the type of rock below the surface; shale is found below the grass and sandstone below the trees and shrubs. Shale does not allow much movement of water, therefore mostly only grasses are found because there is not enough water to support other forms of vegetation, trees need more water and sandstone allows for this as water percolates easily through it, thus watering the thirsty shrubs and trees from below.

2. (Approx. 10 miles from start) Note the large reservoir on the right. The Chatfield Dam was built primarily to control flooding down the Platte River valley into Denver.

3. **Turn Right** (south) onto Hwy 85 at about 13 miles.

The line of trees to your right as you drive to Sedalia mark the path of Plum Creek

4. At the light in Sedalia you will **turn right** onto State Hwy 67, about 23.2 miles.

Go through and past Sedalia and then in just a few 100 yards **take the left onto old CO Hwy 105** at about 23.8 miles, which will take you to Palmer Lake, with some interesting geologic footnotes along the way.

- Pierre shale runs at the base of the foothills in Eastern Colorado. This shale bed was laid down approx. 80 million years ago in an inland sea that covered Colorado, the formation is well known for its ammonite fossils. As you drive along Hwy105 you are driving on this shale layer.

Lots of horse ranches and some of the oldest farms in Colorado are found along this route.

- At about 28.5 miles CO105 turns into Douglas County 105.
- At about 32.0 miles note the large flat topped hill on your left. This is Dawson Butte and was a major landmark for the Colorado pioneers as they traveled south into Mexico or north to Denver and beyond (along part of the old Santa Fe Trail). Shortly you will also see a large double-ends-humped hill called Raspberry Butte, another landmark.

At this point in the drive try to locate and count as many of the flat topped buttes as you can as you cruise to Palmer Lake and then into Castle Rock. The significant thing about these buttes is that their flat topped surfaces were all connected at one time. A woolly mammoth could have walked several hundred feet above where you are now driving if the land removed by erosion millions of years ago was still there. Through the ages erosion has carried away the soil and rock that once connected all of the butte's tops by a process known as **differential erosion**.

- (At about 37.4 miles from start)
Note the road cut as you crest the long hill. This small ridge cut by the road is limestone and is composed almost entirely of shell fragments left over from an ancient ocean that once covered Colorado.

- (At about 37.9 miles from start)
Note the large tannish-grey rock jutting out of the hill just before arriving at the Perry Park entrance, it angles up gently from the north but has a cliff to the south. Jutting hills with sharp drop offs like this are called a hogbacks. There are a series of four of them seen here, all observed end on. Hogbacks normally run N – S from Wyoming through Colorado and on into New Mexico, but not at Perry Park where they run E – W, what happened? When?

Well, about 60 million years ago the present day Rockies were pushed up out of the earth's surface. The layers of rock overlying the Rockies were broken, eroded, and eventually washed away to the sea. The rock layers sticking out of the ground at the base of the mountains at various angles (like at Red Rocks Park, the Flatirons of Boulder, or the hogbacks seen here) are what was left. Right here at Perry Park the Earth's tugging-pushing-squeezing action during this uplift was most intense, and the earth was twisted until the layers now run E – W rather than in the normal N – S direction.

5. (Approx. 38.5 miles from start)

***The entrance to Perry Park is on your right, then note the immediate hard left, and in about a another mile (@ 39.6) **stay right at the Y.** (bear left and you run into Larkspur)

*****BTW – the short trip to see Perry Park’s hidden beauty and then return only takes a few minutes and is worthwhile.** Drive into the Park, stay right at the Y, go past the golf course, pull a “U” and then return to 105. Note the slabs of rock standing straight up like a Stegosaurus backbone through the middle of the golf course. That rock was laid down flat (wind blown sand initially) and later pushed up vertically and was just left there when the earth had quite a few ground shaking spasms a long time ago. Differential erosion then removed all the softer material around the harder red rock leaving what you see today.

In addition - shark and ray teeth, coprolites (fossilized fish poop), fish vertebrae and many shells can all be found in a specific shale bed in Perry Park (the Benton Shale specifically) just to the NE of the golf course up the hill.

6. (Approx. 47.? miles from start)

At the T (stop sign) just north of Palmer Lake turn left for your drive to Larkspur. (no need to enter Palmer Lake)

(Approx. 48.0 miles from start)

- Note the flat topped buttes immediately ahead to left and right of the road. As you drive along even more are revealed. At about 51.4 miles Raspberry and then Dawson Buttes are again seen on the left.

7. **Continue** to the stop sign at 55.8 miles and on through Larkspur and straight on to I-25 north bound. In about a mile use **Exit 174** (Tomah Road) onto the East frontage road from I-25. Look left at about 62 miles across the interstate. This was the site of Continental Divide Raceway where the finest American drivers of the 60’s and 70’s raced. Dan Gurney, Mario Andretti, Carrol Shelby among others all raced here and knew Castle Rock. The first RMC BMW driving school was held at CDR in 1983, if I remember correctly.

8. Castle Rock, one of Colorado’s oldest towns has retained its authentic western flavor in the few blocks of the downtown, is now just seven miles away.

- Note the beaver dams and lodges on your right, to be seen within the first two miles of this leg of your drive along Plum Creek. Also more of the buttes whose flat tops were once all connected prior to differentially eroding.

9. In Castle Rock go through the light at Plum Creek (you are on Wilcox St.) and note the Dairy Queen, then the Philip S. Miller Library, and the Town Hall on your right, and shortly on your left the Douglas County Administration Bldg (former DC courthouse). The restaurants are all within walking distance of the old courthouse, including the one with bullet holes inside from when a prisoner made his escape and a deputy died; or the one where cowboys rode their horses into the bar and extra deputies were hired to deal with Saturday nights (ask Chris Roth about the pot roast or the buffalo meatloaf); or the restaurant which was

once the Catholic Church. There are more too, and all are unique and within a few close blocks.

I hope you had fun and enjoyed the drive, the geologic bits, and the eats – if you stayed for dinner that is.

Cheers and Happy Driving,

Steve