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17 June 2005

Digging For Quartz in San Antonio Canyon

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One of the pastimes that I enjoy with my children is prospecting. This is an umbrella term that refers to gold panning, dry washing, fossil hunting, treasure hunting, rock hounding, gem hounding and scavenging in general.

We frequent the desert and mountain areas in Southern California looking for gold-bearing streams, old ranch houses, gem deposits, fossil beds, and anything else that strikes our fancies.

One area we dig around is San Antonio Canyon at the foot of Mt. Baldy approximately 56 kilometers (35 miles) northeast of Los Angeles, California. It is known for its gold deposits and mineral veins. The accompanying photographs are of a dig we did along a water company service road.

The cut of the hill revealed a large deposit of quartz sprinkled through high-iron content clay sediment. Quartz is a common mineral that is found world-wide in igneous, sedimentary and metamorphic rocks. It has a molecular weight of 60.08 gm. and a chemical formula of SiO₂ (silicon dioxide).

There are a wide variety of different colors and shades of quartz, ranging from amethyst (purple) to carnelian (red) to smokey (brown or black). The crystalline structure of quartz is six-sided and is known as a trigonal-trapezohedral system. This refers to the triangle/trapezoid shape of each side of the crystal. On the hardness scale, where diamond is a 10, quartz is 7 (see www.webmineral.com/data/Quartz.shtml).

Quartz crystals can be made to vibrate at precise frequencies. This gives them many applications in science and technology ranging from electronics to time keeping.

Figure 1 shows my "crew" with some of our tools. From left to right is my son Isaiah (age 6), son Nathan (age 10), and a family friend Travis (age 11). Travis lives right down the street from this dig.

Figure 2 is a photograph of the hillside. Notice the reddish tint and lumpy appearance of the soil. The dirt is actually a loamy clay. We were able to take a couple of buckets full of this soil back home and mold it into different shapes. The holes to the right of Travis' head are where we dug out some quartz.

Figure 3 is another photo of the hillside. This one especially shows the red color and includes some vegetation. The road is in the foreground.

Figure 4 shows the roadside rut formed by alluvial wash from recent rains. Note the red soil color on left and the large number of pebbles in the rut and to the right. The rut is approximately 15 to 20 centimeters (6 to 8 inches) across.

A vein of quartz is in the center of Fig. 5. It is lighter in color than the surrounding clay sediment. The vein was approximately 1.5 meters (5 feet) up from the road and extended through this entire hillside.



Figure 1. Author Scott Little's prospecting crew included his sons Isaiah (age 6) and Nathan (age 10) and family friend Travis (age 11). Photograph by Scott Little.



Figure 2. Photograph of the hillside. Note the reddish tint and lumpy appearance of the soil. The holes to the right of Travis' head are where the crew dug out some quartz. Photograph by Scott Little.



Figure 3. Another view of the hillside. Photograph by Scott Little.



Figure 6 shows some tools of the trade. This is my "express pack" that I carry in my truck. It includes shovels, brushes, hammers, razor, gold pan, trowel, plastic bottle and bags (for carrying samples). It does not include some other items I use on larger digs, such as my sluice box, strainers, metal detector, and classifier.

Finally, Fig. 7 shows some samples we collected. On the left is some clay, and on the right is quartz. The hammer is included for scale. Not shown in Fig. 7 is my crew, who learned much from our prospecting experience. ●

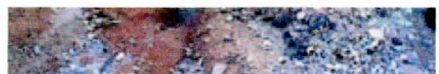


Figure 4. Roadside rut formed by alluvial wash from the recent rains. The rut is approximately 15 to 20 centimeters (6 to 8 inches) across. *Photograph by Scott Little.*



Figure 5. A vein of quartz is at the center of this photograph. It is lighter in color than the surrounding clay sediment. *Photograph by Scott Little.*



Figure 6. Tools of the prospector's trade. *Photograph by Scott Little.*



Figure 7. Some of the samples that were collected. On the left is some clay, and on the right is quartz. The hammer is included for scale. *Photograph by Scott Little.*

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