

**THE 785th MEETING
OF
THE MINERALOGICAL SOCIETY
OF SOUTHERN CALIFORNIA**

7:30 p.m., Friday July 11, 2003

**Building E, Room 220
Pasadena City College
Pasadena, California**

Featuring a Talk by

Roy Foerster

on

How I Got Into Collecting Minerals

July Program

Our July speaker is Roy Foerster and his topic is "How I got into collecting minerals and the evolution of my collecting activities and philosophy." I have been fortunate to know many of the earlier "greats" such as Jessie Hardman, Marion Godshaw, Fred Sellers, and others. I have traveled to a number of foreign countries and obtained many specimens. Traveling as a collector, rather than a dealer, offered me a different perspective and many unique opportunities. I learned a lot about tracking down THE SPECIMEN and a trip to China in 2000 was a prime example of a collecting trip gone right. I have always felt that good specimens have a "personality" as does a collection. The personalities must blend to give a really good collection. There have been some unique victories in the acquisition of good specimens, and there have been some sad tales. Over thirty years of collecting has been enough time to accumulate some interesting stories.

My profession is that of Electronic Engineer. I was director of research at Quotron Systems where I was in charge of designing computers and terminals. I currently have about fourteen patents with more in process. However, my real love is the study and collecting of minerals and natural "oddities". I have written articles for Lapidary Journal and Rock and Gem magazines. One of my favorite projects was assembling a case of thumbnail minerals with a price limit of \$20 each. I won the CFMS thumbnail trophy with a display averaging \$11.16 per specimen. I actually enjoy putting displays in shows and I have fun with the judging. This year, I won "Best of Show – Master Level" at Tucson with a display of minerals acquired during

a ten day visit to China in 2000.

August Picnic

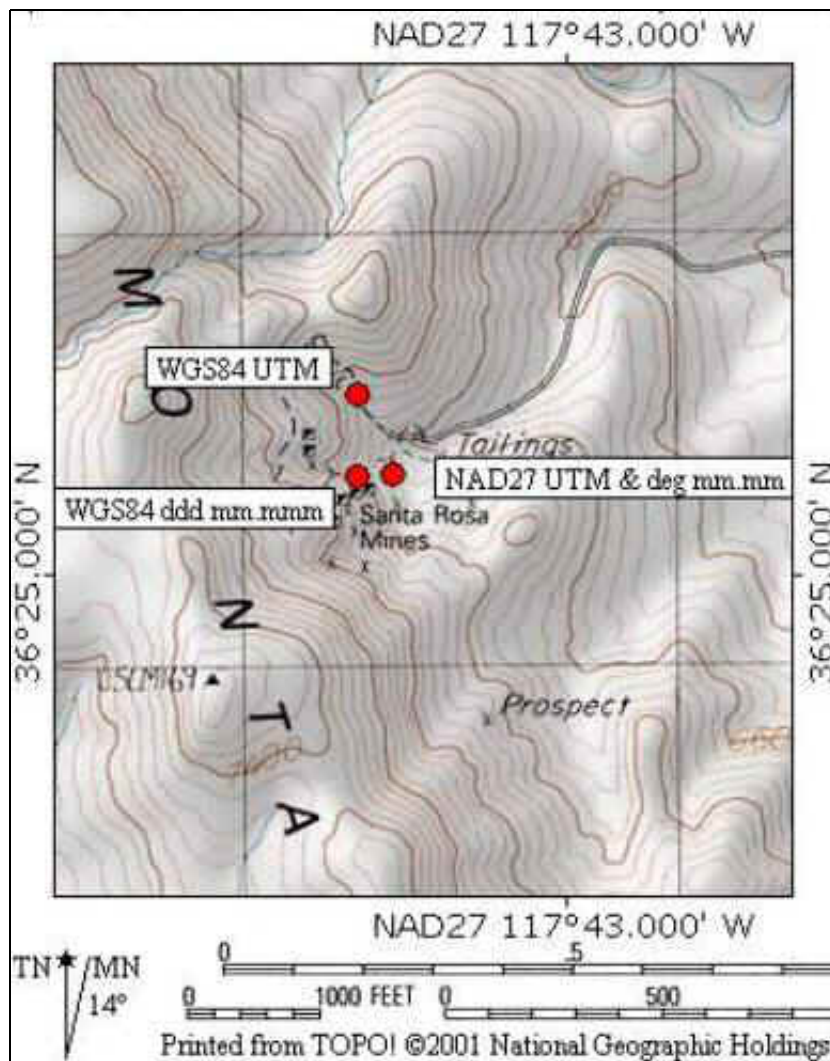
The August Picnic, Swap meet, Kid Rock event, and Pot Lunch is scheduled for August 9 at Rock Currier's house. More information will be given in the August Bulletin. Plan to be there!

A Brief History of Owens Lake Mineral Production

by Walt Margerum

On a recent trip to Lone Pine I noticed that the Owens Lake environmental cleanup project is well underway. What this will mean to the availability of mineral specimens is hard to say. But it did get me to thinking about the history of mineral production from the lake. The primary products were soda ash (Na_2CO_3), and sodium bicarbonate (NaHCO_3), and a small amount of Borax.

A brief history of the lake during the period is needed to understand the mineral production. Until 1913 when the California Aqueduct was opened Owens lake was about 30 feet deep at its deepest point; yes Virginia there really was water in Owens Lake. It had a water source, the Owens River, and several local streams, but no outlet other than evaporation. After the opening of the aqueduct the inflows were all diverted and the lake began to dry up. In the summer of 1922 trona precipitated due to the desiccation caused by the cutoff of the water entering the lake. That winter sodium carbonate, and sodium sulfate also started to precipitate. This caused all the companies operating on the lake to revise their process of recovery.



Owens Lake seen from Space (Photo Courtesy NASA-Johnson Space Center)

The Inyo Development Company started commercial production from Owens Lake in 1887 using solar evaporation ponds constructed just north of Keeler. The ponds were filled with lake water, and allowed to evaporate throughout the summer until trona [$\text{Na}_3\text{CO}_3 (\text{HCO}_3) \cdot 2\text{H}_2\text{O}$] formed on the bottom of the ponds. Around October the ponds were drained and the trona was harvested. About 25% to 30% of the dissolved sodium carbonate could be recovered by this means. Some was shipped as trona, and the remainder was heated in ovens to produce soda ash. It was then shipped via the Narrow gauge railroad to market. They also tried unsuccessfully to produce potash around 1916. They continued in operation until 1920 when the lake water became too concentrated for solar evaporation, due to the drying up of the lake after the 1917 completion of the Los Angeles Aqueduct.

Around 1912 The Natural Soda Products Company was formed and started operations south of Keeler. They used solar evaporation to concentrate the water, and then a process that bubbled CO_2 through a tower filled with the concentrated lake water. This process recovered 60% to 70% of the dissolved sodium carbonate as sodium bicarbonate. It was then sold either as sodium bicarbonate, or processed into soda ash. They also sold trona from the evaporation ponds. As the

lake desiccated they revised their processes, by adding water from wells. After going bankrupt in 1927, they were bought out by the Michigan Alkali Company, later part of the Wyandotte Chemical Corporation. They continued in operation using a process of chilling the brine to obtain sal soda [Na₂CO₃ · 10H₂O], but could not stop the formation of sodium sulfate [Na₂SO₄ · 10H₂O]. During this time a flood occurred on the Owens River got into the lake and disrupted their operations. The plant was sold in 1950, and continued in operation until 1952 when it was dismantled. Its location is marked by a large white pile of sulfate, and is now the headquarters of the reclamation project.

The California Alkali Company commenced operations just north of Cartago in 1917 using a process similar to that used by the Natural Soda Products Company.

Both the Natural Soda Products Company, and the California Alkali Company obtained their CO₂ from vertical coke fired lime kilns using dolomite from the Western Inyo Mountains, or limestone from Cerro Gordo.

In 1924 the California Alkali Company was acquired by the Inyo Chemical Company who continued to use the bicarbonate process in spite of its decreased efficiency due to the increased concentration of the carbonated due to desiccation, until the plant was closed in 1932 and never reopened. They also recovered a small amount of borax. All that remains is a large waste pile near Cartago.

In 1926 the Kuhnert Syndicate built a pilot modified carbonization plant at Bartlett on the West side of the lake. By 1928 the process was worked out and the Pacific Alkali Company was formed to operate the plant. This plant recovered trona, and also borax. This plant was later purchased by the Columbia-Southern Chemical Corp. a subsidiary of Pittsburgh Plate Glass Co. who modernized the plant and operated it through the 1960's.

Several companies tried to produce caustic soda (NaOH) in a plant near Bartlett, but were unsuccessful. The last production was in 1928.

In 1947 the Permanente Metals Corporation started a plant between Cartago and Bartlett on the west shore of the lake. Its life was short, and it ceased operations in 1950. All that is left are the concrete foundations.

Today the only operator on the lake is the U.S. Borax plant located north of Cartago. They produce trona for use in borax refining at Boron.

References

Norman, L. A. Jr.; Stewart, Richard M.; (1951) Mines and Mineral resources of Inyo County; California Journal of Mines and Mineralogy Volume 47 Number 1, pp. 129-131.

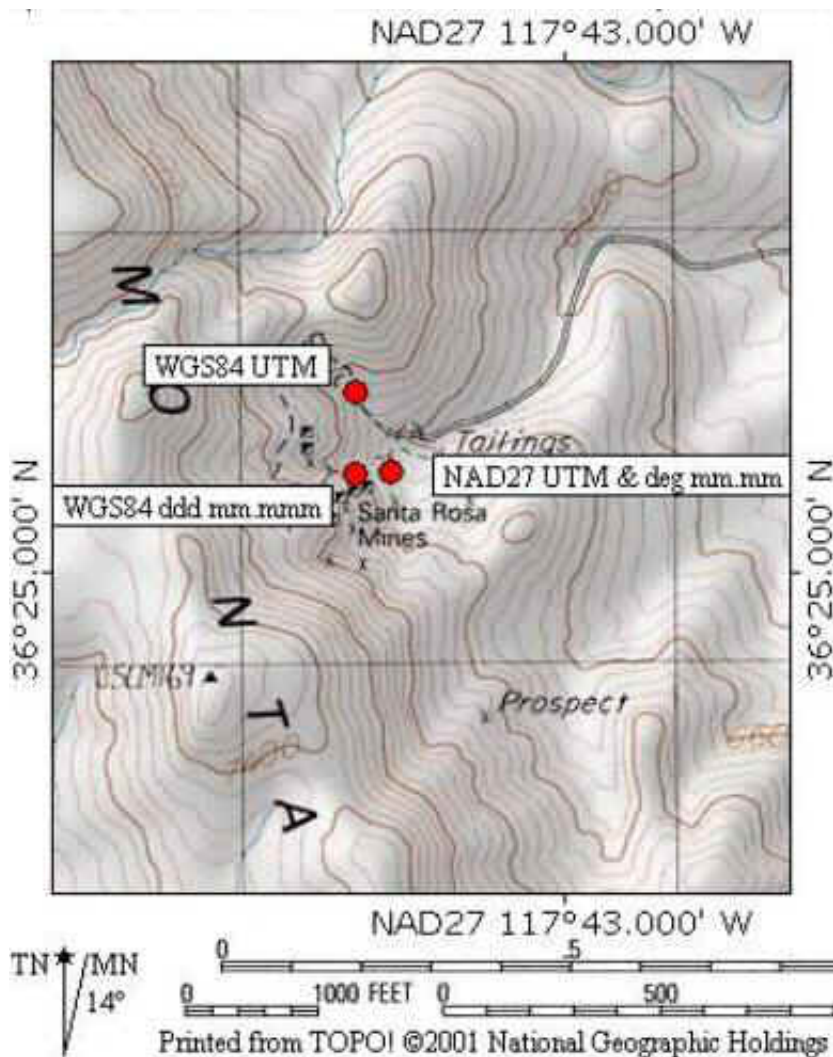
Ver Plank, William E.; (1959), Soda Ash Industry of Owens Lake 1887-1959; in California Division of Mines Mineral Information Service, Volume 12 Number 10,

pp.1-6.

More GPS Map Information

by Walt Margerum

In the June Bulletin I talked about using the correct map datums when using the GPS. Bob Housley sent me an e-mail stating that he had errors of more than 190 meters in Northing when he used UTM rather than the 3 meter error in Latitude I reported. This got me to looking at map books to determine how this could be. First let me state that he was, as usual, correct. The following map shows the expected errors.



The reason for the larger error is that UTM uses a cylindrical projection. In this projection any error in position along the polar axis is directly translated into a Northing error. The reason it did not show up in the June article was that the data was taken in Latitude/Longitude format, and the errors shown are what can be expected using that format. One confusion factor is the map shown was in UTM.

This was done only to measure the errors. So to reiterate, always keep your coordinate systems consistent! If you are interested in learning more about maps and map making the following book is a good choice. Although technical it gives good examples, and can be understood by anyone who knows trigonometry. "Datums and Map Projections for Remote Sensing, GIS and Surveying" by J. C. Iliffe." It is available on amazon.com.

Minutes of the June Meeting

The 784th meeting of MSSC was called to order by president JoAnna Ritchey At 7:30 PM and immediately turned over to Jim Kusely who introduced Dana Gochenhour, our evenings speaker.

Dana started his presentation by showing a video documenting the whole sequence of events during the excavation of the second big pocket at the Cryo Genie. This riveting story had been put together by the brothers uncle Bill. Of course the whole pocket was filled with heavy brown mud that made it impossible to see any crystals and the roof had collapsed. It was necessary to carefully remove large, heavy chunks of feldspar from above and around the pocket before any gem crystals could be removed.

Once the real pocket material had been reached one could still only see a few outlines of the big crystals. The excavation was very slow and systematic. Every speck of material from the pocket was put in 5 gallon buckets and sorted and stored by location in the pocket. This information was carefully preserved during the washing up of the material, and the subsequent cleaning of the tourmaline in HF. Most of the tourmalines were fractured and broke apart during washing. Some of the larger ones totally disintegrated and the fragments could only be used for polished stones. Those that were less damaged were carefully restored by Dana. We have all seen the spectacular success of these efforts.

Despite the large number of outstanding specimens that have come out of this mine, the mine itself is still quite small. The large pockets were encountered at the bottom of a 35 foot incline. Up until now all the mucking was done by hauling out 5 gallon buckets with a cable line. The last three months have been mainly occupied with putting in a rail lift system and satisfying regulatory requirements. With those things out of the way mining can begin in earnest again and if the past is any indication new pockets will be encountered soon. A lively question and answer period followed the presentation.

After the program Carolyn Seitz give an update on Show preparations and indicated that the Museum has budgeted money to help with the Show this year and that dealers were already signing up. Janet Gordon talked about the kid rock needs and passed out material for people to work on at home. JoAnna Ritchey reminded people of the Board meeting on July 13th, which will be held at 1 PM at Carolyn Seitz home. All business being concluded the meeting was adjourned at 9 PM.

Respectfully Submitted by the Secretary, Bob Housley

Calendar of Events

July

19-20 Escondido CA, Palomar Gem & Mineral Club
Escondido Army National Guard Armory
304 Park Avenue
Hours: Sat 9-6; Sun 9-5
Don Parsley (760) 745-6181



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