



THE ASSAY

THE SOUTHWESTERN PROSPECTORS AND MINERS ASSOCIATION
- Founded 1934 -

Meetings on the Third Tuesday of Each Month
VFW Post 2082
2885 Lemon Grove Ave. Lemon Grove CA 91944

President's Message

Oct 2009



On the new Dredge Moratorium Law, SB 670, the groups and companies leading the fight against this law are at this moment conferring with their lawyers to see which is the best way to proceed. The SPMA Board of Directors voted to donate \$1.00 per member to help this fight. The funds were sent to PLP to use as they need in this important fight to protect our Mining Rights.

As I am finishing up the annual paperwork for the SPMA Mining Claims, there are a few thoughts on them that I have:

1). Please let the club know if you worked the claims, which claim, what date, names of members with you. This lets us show the BLM or Forestry that we are using

claims for mining.

2). If you see illegal activity on the claim, write down the Vehicle License number, a description of the people mining on claim, and equipment they are using (especially backhoes, big commercial mining equipment, etc.). Then call or send info to Claims Committee (me) or the PO Box. Be careful taking pictures of these people because they could become angry.

3). If you have knowledge of areas you think might make a good claim for the club, PLEASE tell me or any Board Member. The more claims we have, the more gold we can extract.

Remember, in 2 months (Nov Meeting), we vote for the new officers of 2010. If you are interested, call ME or Ed Farley, and give us your name and the position you want to run for so we can put you on the ballot.

October begins the Drywashing Season; the time we mine the Desert washes for gold. This year we have the new Araz Claims in El Centro area along with the Potholes that every year produces nug-

gets and placer gold for the Members. I hope you get out and get your share of the gold hiding in those washes.

The Quartzsite Claims also have some real nice Gold. Concentrate on the shallow bed rock areas on these claims. Some areas have 5 feet of overburden. A metal probe works well in finding areas with shallow bedrock.

Finally, I get asked all time how much is my gold worth. The spot price determines the STARTING price for what someone will pay. If you sell to a coin dealer or jewelry store, they do not want your fine gold, only the flakes and nuggets to make items to sell. A collector will pay top dollar for a good specimen, but discounts the price of the placer gold. If half your gold is fine (under 1/16" size) the price might be 75% of spot price. So next time you want to sell gold it is best to separate the gold in different sizes and ask different prices for each group of gold (nuggets, flakes and fines).

Inside this issue:

Announcements & Articles	2-5
Contacts	3
Calendar	6

Future Activities

- ♦ **Oct 12th:** 6:30 pm: Board of Directors meeting @ Gem and Mineral Building in Balboa Park
- ♦ **Oct 20th:** 6:30 pm: General Meeting @ VFW Hall in Lemon Grove.
- ♦ **Nov 9th:** 6:30 pm: Board of Directors meeting @ Gem and Mineral Building in Balboa Park

Upcoming Events

- ♦ *Note: Check the Message Center for the latest outing information*



Future Events

October Meeting : Keith Meldahl will be speaking on his book “Hard Road West” which is about the history and geology of the Gold Rush Trail. Mr. Meldahl is a professor of Geology and Oceanography at Mira Costa College. This sounds like a great program do not miss it.

November Meeting : Annual Business Meeting and voting of Officers for 2010.

November Outing: Annual Outing and Potluck at the Potholes Claims near Yuma. Nov. 26th-29th

Ways and Means

We had a smaller turnout to the meeting than normal, but they were very up beat and involved. The Ways & Means



table was filled with new and varied items, which seems to inspire people to purchase tickets. This meeting Brian had a new helper, Matthew Pellegrino, helping to draw those winning tickets. We enlisted his help in selecting tickets from the rotation bin, then giving the selected ticket to Brian to call the numbers. The two nuggets were one of the big prizes and was taken home by Lloyd Lawson. Blakely Sanford chose a scale and Charlie Freeman wanted the gold pan kit. All nice prizes.



PLP is on the Offensive

Public Lands For The People filed a Lawsuit in federal court alleging SB 670 is illegal because it violates overriding Federal laws and Federal and California due process rules under a number of laws.

The complete text of the lawsuit is available in the PLP Forum and in the files section of the PLP Group site discussed below.

PLP has also filed suit against El Dorado National Forest for trying to close 2200+ miles of roads.

PLP has a website at www.plp2.org and there is a link to their FORUM. The problem with the Forum is you have to check regularly to see if anything has been added. To improve communication in the mining community, PLP has created a Yahoo! Group similar to the one SPMA uses. PLP's Group is for distribution of official information not chatting. If you wish to be informed, you can join (free) at http://groups.yahoo.com/group/Public_Lands_for

[the People/](#)

Don't worry about getting a zillion emails, the email traffic will be very low. You will need a free Yahoo ID if you don't already have one; just sign up at www.yahoo.com.



PS: State Senator Pat Wiggins sponsored SB 670. It has been reported that Sen. Wiggins has dementia. This was reported by the Santa Rosa Press Democrat <http://www.pressdemocrat.com/article/20090821/ARTICLES/908209927/0/NEWS07>. Given the reported level of Wiggings' metal state, it makes you wonder who is running her office. Is she really in command? Or just being led by her staff? Read the article; make your own judgment.

Operation of a Stamp Mill - Part 8

Amalgamation, Apron Plates, & Traps

Mercury is classed as a metal and is unique in that it is a liquid at normal temperatures. It is 13.5 times heavier than water; gold is 19.3 times heavier. Mercury is insoluble in water, but violent agitation can cause tiny globules to be suspended in water.

Mercury combines *mechanically, not chemically*, with other metals to form alloys called "Amalgam". In a chemical combination, 2 or more substances come together to form something new. (Note: Mercury can form chemical compounds, but that is not an amalgam). In contrast, Mercury "wets" and sticks to other metals the same way water wets and sticks to things. Water simply evaporates when the wetted thing dries. Mercury does not evaporate at room temperature, so it must be driven off by heat or by using other chemicals (acids) to dissolve it. Mercury is fairly benign if handled properly, but it can poison you slowly by absorption through the skin or by eating tainted food. Vaporized mercury is extremely dangerous, so my advice is to stay away from it.

An amalgam that is 90% mercury and 10% gold is liquid. At a ratio of 87.5%/12.5%, it is a paste; at 85%/15% it crystallizes to a solid.

The surface tension of mercury is very high and that is why pure mercury beads up into round balls (globules) that will draw the gold particles that come in contact with it inside. A gold particle arrested on an amalgamating plate does not just stick to the surface where it could be scoured off by the pulverized rock

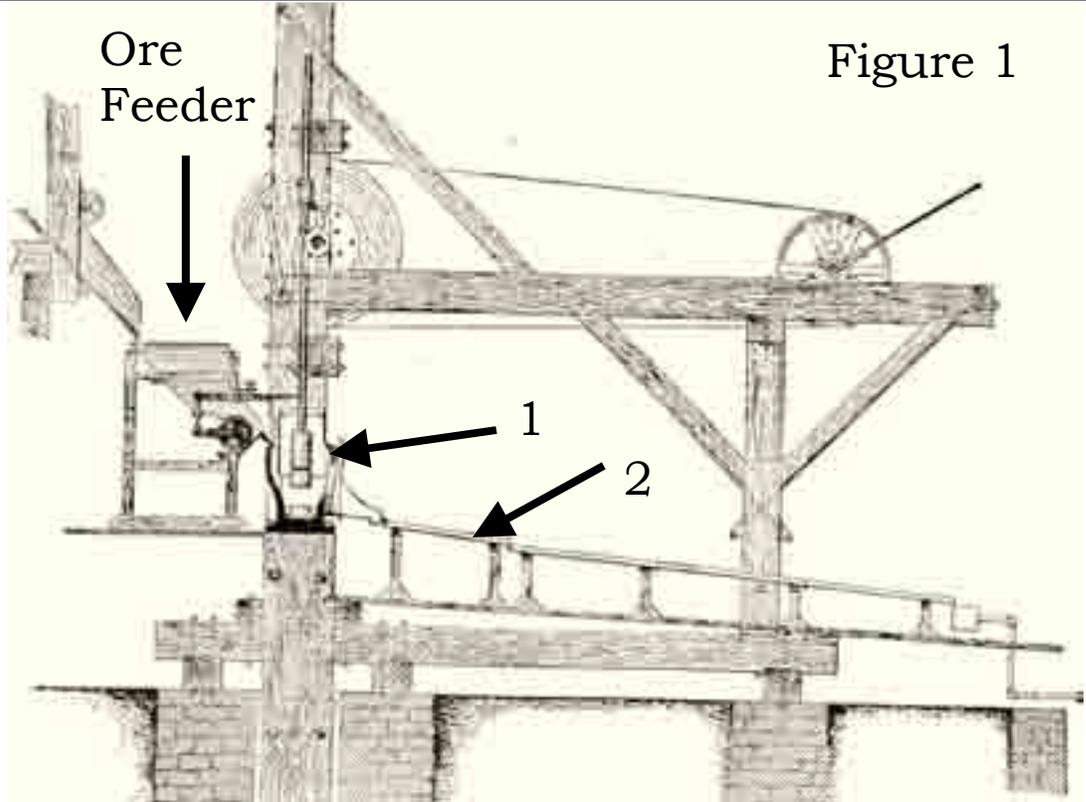


Figure 1

slurry streaming out of the stamp, but it will actually be drawn below the surface where it is protected.

Most of the mills in California put mercury in the mortar of the stamp battery and would catch 50-80% of the gold within mortar. As the level of sulfides increases, the other metals interfere with the process and less gold is caught in the mortar.

Pure mercury is bright and shiny. Impurities will contaminate the mercury and it will lose its ability to capture the gold. Some of the big culprits are sulfides and oxides which we talked about in part 3. The solution is to keep constant watch on the state of the amalgam and to clean the mercury while capturing these valuable contaminants for later processing.

The Apron Plates (Item 2 in Figure 1) are low tables placed in front of the stamp battery mortar (Item 1 in Figure 1) to catch the pulp (slurry) that

flows out of the stamp. The tables are the width of the mortar and can be any length required from 4 to 28 feet. The surface of the tables are covered with copper plates. The clean plates do not work that well, so they were smeared with a "wet" amalgam that contained some gold or silver. Later, it was determined that the plates could be covered with 1 ounce of silver to the square foot and then smeared with mercury. The silver was electro-plated onto the copper plates.

The key to this process is to get the gold particles to rub up against the amalgam (essentially a mercury paste) on the plates as the particles flow towards the amalgam trap at the end of the plate. The idea is to spread the pulp out over entire width so it is a very thin slime. The mercury on the plates is actually sticky, so it will stay put unless the pulp scours it off.

Operation of a Stamp Mill - Part 8

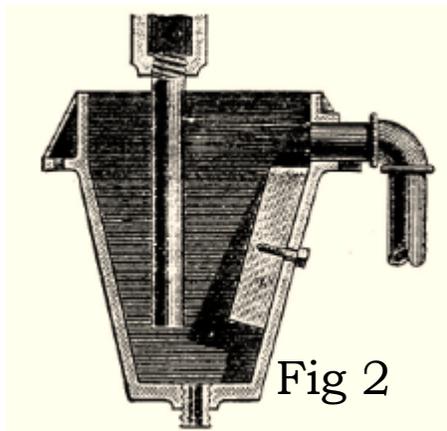
Amalgamation, Apron Plates, Traps

The reason for the extreme difference in the length of the apron plates has to do with the purity of the ore and coarseness of the gold particles. The coarser particles will be caught in the mortar or in the first foot or two of the plates. Finer particles can float so it takes longer for them to migrate downwards where they can rub against the amalgam and be caught. If the amalgam is too hard or contaminated it won't be effective. If it is too wet, it will flow and run off the end of the table taking its precious cargo with it. Pure, coarse gold did not need long plates. Ores with other minerals, contaminants, or fine particles needed more distance. As the amalgam at the top of the plate becomes loaded up and hardened, the amalgam at the lower end would still be in a stiff, but receptive state.

Maintaining the apron plates was a never ending task. The plates needed to be cleaned, amalgam carefully removed, and the plates re-dressed with fresh mercury and amalgam.

When it was time to do a cleanup, the "wetter" amalgam could be pushed into a pile with a rag but the "drier" stuff has to be chiseled loose or softened with heat or fresh mercury.

Good quality mercury was expensive and recyclable. Contrary to popular belief, the old timers were not pouring it down the drain by the ton. They certainly lost some, but went to significant effort to avoid it, even if it was



only to avoid the loss of values and expense of replacement.

An amalgam trap (Fig 2) is located at the end of the apron plates. It is part drain and part trap. The pulp flows down the vertical drain. The heavier material sinks to the bottom and the lighter materials rise upward and exit via the drain pipe near the top of the trap.

The idea is to give the heavier mercury, even if seriously contaminated such that the globules could not combine, a place to settle out.

Note the trap in the floor at the end of the apron plate in the photo below.

Next month, we will explore the end of the line for the typical California Mill; An ingenious mechanical device called a **Vanner Concentrator** (See Fig 3).

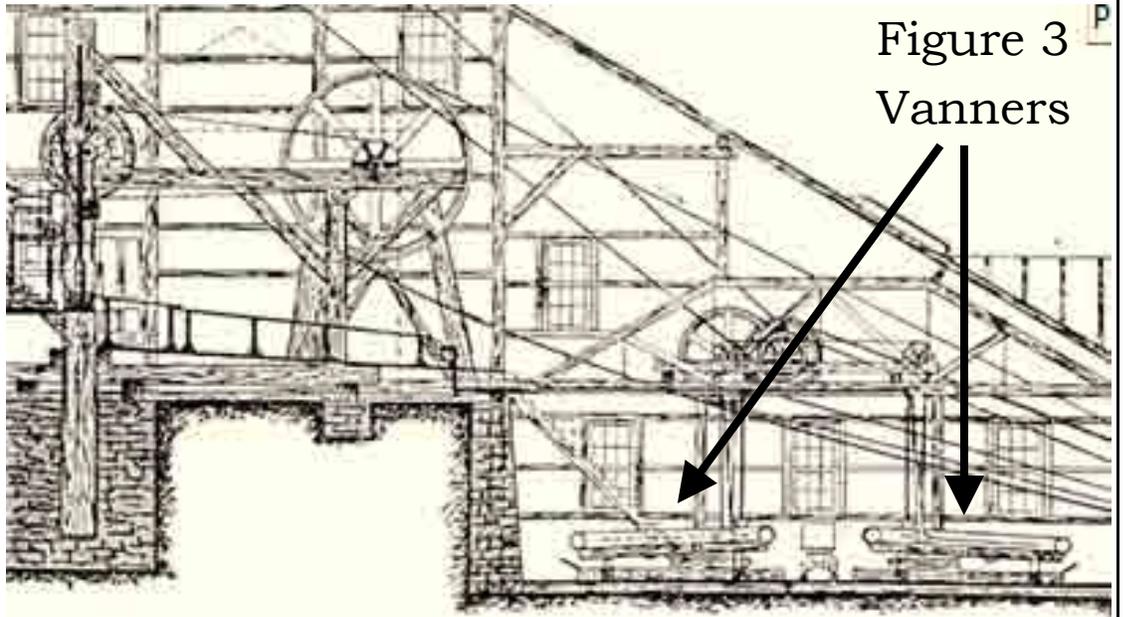


Figure 3 ^P
Vanners



Southwestern Prospectors & Miners Association

- Founded 1934 -

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Annual dues are \$40 for new memberships and \$30 for renewal. Make check or money order payable to SPMA and send directly to Membership, PO Box 904 La Mesa, CA 91944-0904.

The Post Office does not forward bulk mail. Please give us your new address if you have moved.

The large, bolded squared days are meeting nights ~ the board meets the second Monday of each month and the General Meeting is the third Tuesday of the month. The circled days are the club's scheduled outings.

October 2009

November 2009

Sun	Mo	Tue	We	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Su	Mo	Tue	We	Th	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					