

Minutes of the October 16, 1993
Water Committee Reported Progress

Mr. Ed Fietsch opened the meeting at 1:15 PM. He informed those in attendance that the meeting was not called by the Water Committee, that "This meeting was originally agreed upon by the board at the board's meeting immediately following the annual meeting of June 26, 1993." The mistake of signing the water committee was made by Patti Irish who typed up the meeting notice, she assumed it was to have been called by the water committee. The purpose of this meeting was to inform Gerle Creekers about progress of the material that has been gathered pertaining to wells and surface water. Mr. Fietsch also reported that he has been informed by letter from Ms. Christine Mearse about the difference between surface water and ground water. The most important difference is that the surface water need the general mineral analysis much more often than the ground water. It will be necessary to have the general mineral analysis if a problem is found to exist.

Charles Holmes reported that John Holmes is now attending a special meeting involving people from the EPA. By way of phone John reported that Bucks Lake has a surface water system that cost the water users \$760.00 per year per household. They have a water system operator required by the state (grade 2) that cost \$18,000.00 per year. He also reported the small surface water system will cost too much to operate by 1996. They also reported that because of the high price of surface water systems by 1996 ground water (wells) will be the only way to go. The information that Charles gave was reported to him on the morning of the meeting (October 16, 1993). Also when a filtration system must be back flushed, the affluent must be disposed of according to EPA regulations, it cannot be dumped on the ground. That means that the affluent must be trucked off.

Bill Dillon reported that there is not much to go on the two filter systems he is researching. One is called the Harmsco filter system and the other is produced by Culligan. Clay Hemphill has talked to the people from Culligan. It is a very simple system which will work for us because we are only open 5 to 7 months a year and it would be a cheaper way to go. The Culligan system is now sitting on Christine

Mearse's desk along with the Harmsco system. She will get back to us to let us know if these systems will be approved. Upon questioning one is a sock filter, both are cartridge type filters. He also reported they both meet the requirements. The cartridges are the disposable type which must be approved by the State and thus approved by the County (Christine Mearse). Bill reaffirmed the fact that any cartridge (filtration) system must have a qualified operator. he also stated that there is the possibility that we may only have to "check" only five or ten times per year. We have a unique situation in the fact that we are not open year around. The question was posed "Is she (Christine Mearse) qualified to give approval for our system?". The answer was "She's the one." Sock filter or cartridge filter would cost \$2900.00 (Culligan). The question was asked "Will we get these findings in writing by Spring and Bill answered Yes!

According to Ed Fietsch "Anytime water treatment is required for safe drinking water and always with surface water, the system must be operated by an operator by a grade equal to the treatment." He also indicated that it may be possible to call some one certified to handle any problems when they arise.

The question was brought up "Is there another summer home tract similar to Gerle Creek Summer Home Tract?" No answer was forthcoming. Wrights Lake has individual systems. In fact many leasees pump water directly out of the lake according to Ed Fietsch, but will have to go to individual systems (wells) there is no community system now. Mr. Fietsch called on Bud Irish who gave the following report verbatim.

On the day after our 1993 annual meeting, Larry Gondola (Lot #13) and I attended the NSSHA meeting at Sciots Camp. Christine Mearse answered many questions about the new EPA water regulations. She stressed the fact that there was no vendetta through her office to cut our water off. She did relate that her office was recommending that we use ground water (well).

We met Mr. Houk, the president of the Sciots Camp Association, who obliged us by escorting us through their new all-year filtration system. I must stress that it runs the entire year. They monitor the turbidity and chlorination of their water daily which is a rule set up by environmental health. With that monitoring rule, it is also necessary to have a certified water technician on the premises to record the turbidity and chlorine values. They are lucky enough to have electricity which enables them to monitor the turbidity constantly. Their system is quite elaborate and came at a cost of \$180,000.00

A slow sand-grave filtration system will filter out the Giardia Lambia, E. Coli and Cryptosporidium after the layer of schmutzbecker (scum) has formed on top of the sand and gravel. The only drawback to that is, that it takes an extended time for the schmutzbecker to form, estimated at some time between three (3) and six (6) weeks.

At this point in time, the state (EPA) will accept only three other methods of filtration or treatment. The other three are conventional, direct, and diatomaceous earth. With the use of any of the three methods of treatment, it is mandatory that we also disinfect the water with chlorine. Chlorine, so the experts say, will soon be classified as a carcinogen. That leaves us in a quandary because the next best method of disinfection is treating the water with ozone (oxygenation process) which requires a treatment tank four times the size of our needed holding tank.

Someone one said that if the water travels a mile over the sand and gravel of a creek, it has been filtered enough for potability and you can drink it. In fact the gentleman from Culligan told me that some people have made algebraic expressions that give distances for water to travel over sand and gravel to be potable. This, of course, is an old wives tale.

When our water system was completed, the population at Loon Lake was very low. Now we have experienced a population explosion. The Forest Service at on time insisted that the campers at Loon Lake locate their campsites above the high water mark, but there is little or no enforcement of that

rule. As a result, their wastes are deposited where next year the high water will cover. Most of our water comes from Gerle Creek from the bottom of Loon Lake. I have a hard time envisioning the water being purified as it flows down the creek over sand and gravel. It only takes a few range cattle, deer or a bear crossing above the intake to recontaminate the water into our system.

In my travels researching filtration systems and wells, the owner at Clearwater Systems in Martel, Ca informed me that the City of Volcano had just removed two sock filters from their system because the socks would not filter out the iron soluble salts from their new well. Volcano had received a grant because they are classified as a municipal water system. We are not that lucky. As an important aside, wells dug at low elevations have a tendency to contain impurities that only specialized filtration systems will remove. The filters that the city of Volcano have and can't use are built and distributed from a company in Sunrise, Florida. At present, the Enviromental health will accept the four filtration technologies only of which sock or cartridge filters are not included.

I will continue to pursue more information from Florida when we find out that there may be a possibility of EPA accepting sock or cartridge type filters. If the Department of Enviromental Health did grant us a waiver and let us install a sock or cartride type filter, it would still be necessary to use their monitoring requirments.

Gary Drennon, the Central California Culligan representative walked our water system and informed me that he has the answer to our filtration problems. He has installed one of the special systems at Kyburz. it is called the multi-Tech Multiple Barrier Filtration System. The cost is \$11,400.00 not installed or delivered.

Ed Fietsch received an estimate (for a sand and gravel system) from Water Tech located in El Dorado. The bid was for \$30,000.00 which included tanks, hardware, piping and sand and gravel. All the items would be delivered to Gerle Creek-but not installed. At normal installation rates, that \$30,000.00 could easily increase to \$90,000.00

Some well drillers are equipped with the expertise of completing the project from start to finish. The companies I contacted who have that capability are:

Mark Fredrick Pump & Supply Co.
Jackson, Ca (Smith Reese)

Triangle Well Drilling
Rescue, Ca (Wayne Dawson)

Thom Reed & Co
Jackson, Ca (Thom Reed)

I asked each of these companies to send me estimates that separate the work into (1) drilling the well, (2) well pump (3) electrical systems including photo voltaic and propane fueled generator and (4) delivery system from well to holding tanks. To date, I have received one estimate from Mark Fredrick which was approximately \$23,000.00

Imbach Pump, located in placerville, is the conventional pump only company that has responded. The pump installed in our well will cost \$1,420.00 On that estimate, Rod Imbach included an estimate for a propane generator, \$2,150.00 and tank liners at \$2,100.00 He also supplies solar electric systems.

Photocomm Inc., located in Grass Valley, supplies a great variety of solar electric applications for well pumps. Case in point--they have available a photo voltaic system that is capable of delivering 3,000 gallons per day from a 250' well. I will continue to research this option. The most evident advantage of the photo voltaic systems is that they are quiet and reliable. Another consideration that must be made is that the Forest Service has not been approached with respect to their acceptance of a solar array.

The Forest Service geologist pointed out an area where a well could be drilled. She gave an estimate of the approximate depth. All the well drillers I have contacted seem to use 300" as a magic number, possibly because of water volume above the submersible pump they would install. The worst scenario is at Loon Lake where the well drillers

have had a difficult time. On October 4th, a third well was being drilled between the lake the first campground. The outcome as of this date is unknown to me. There is a well that is producing about 15 gals per minute at the Upper Ice House Campground.

Closer to Gerle Creek are two wells that are producing water at an acceptable rate. One well is located at Stone Cellar. The driller went 250' and measured about 18 gal. per minute and has capped the well for application of the pump, etc. next year. The cap was removed and the water level in the well was just below the cap. The second well is located at Robbs Resort. The first good flow of water came at 150 feet. the driller continued on for 100 feet to allow for the lowering of the water table in possible drought years. That well is also now producing about 18 gallons per minute. The intriguing fact about both wells is that a 90 year old man witched them. The first location at Stone Cellar was not acceptable, so Les Clemenson asked the witcher to find another more convenient location, which he did.

Ms. Christine Mearse sent Gerle Creek S H T a report of a Health Code violation on May 14, 1993. In that report, in order to comply with the Surface Water Treatment Requirement, we must:

1. Filter the water.
 2. Verify chlorination contact time.
 4. Have a certified water system operator.
 5. Record water turbidity daily.
 3. or Switch to a ground water source.
- (3 out of sequence on the report)

Verification of chlorination contact time can be corrected by adding a holding tank.

The one requirement that we must comply with no matter what filtration system we use is that we must have a certified operator who must take and record turbidity and disinfection. I sent for the state requirements for a certified water operator for small water systems. The

course is offered as a home study course through California State University, Sacramento at a cost of \$51.45. A final written examination for certification is given at the Office of Drinking Water.

The course entails a working familiarity with calculations, formulas, chemical and bacteriological characteristics and the different methods of disinfection and water chemistry. Approximate number of hours to complete the course is from 50 to 150.

Disinfection, filtration and daily monitoring are not required with the use of ground water. There are no requirements for a certified operator if Gerle Creekers opt for the use of ground water.

There has been a question posed about the loss of water rights on Gerle Creek. Section 64414 of Chapter 15 states that a standby source can be used for less than 15 calendar days per year. Our standby source can be Gerle Creek and I am certain that our water rights will not be voided, especially when we inform the proper authorities that it would be used as standby and for firefighting purpose.

I have talked to Jess Morehouse, the head of the Office of Drinking Water, who has informed me that we could not acquire an exemption of filtration like San Francisco and Los Angeles have, no matter what our turbidity records show. he also stated that the requirement for daily monitoring cannot be avoided or exempted. I do not enjoy being grouped with S.F. or L.A. Our problems with the purity of our water could not possibly be compared with theirs.

Regardless of which system we use, it will be necessary to install liners in the existing tanks. There are three possibilities from which we may choose. They are:

1. Poly Vinyl Chloride (PVC) liners.
2. Polymer sprayed in place (Fiberglass)
3. Prefabricated glass.

The PVC liners not installed would cost \$2,100 (Imbach). The prefabricated glass tanks have been estimated at approximately \$10,000.00. No information has been gathered for the polymer.

The most important outcome and conclusions from the research that has been done is that Gerle Creekers should receive the most convenient, reliable water system and purest water possible which will require the least amount of maintenance in the future.

Update: The latest well drilled at Loon Lake is located near campsite #20 and produced 8 gallons per minute. The well is 300 feet deep.

End of Irish Report

Discussion that followed

The question was raised by Clay Hemphill "If we don't get water out of the first well hole we drill, how many holes will have to be drilled." The answer to that question was that a viable well must be included in the original contract with the well driller. Smith Reese (well driller) informed us that any extra cost would have to be accounted for in the original bid.

Discussion followed with Smith Reese, he said that it would be extremely difficult to guarantee finding water. Test holes would be necessary and the cost of those tests would have to be absorbed with the contract. The depth of well magic number hovered around 150' to 300'. The well water that would be found in the Gerle Creek area should be extremely pure and the the possibility of Gerle Creek water influence is fairly high. The driller tends to believe that we would hit some sort of moving water system in the broken granite this far down (altitude) at Gerle Creek. Pump life time was discussed: there is a wide variety of pumps available. The question of what we would have to do if we used Gerle Creek water direct in place of the well water.

The answer was that we could use Gerle Creek water for 15 and only 15 calender days per year and that we would have to purify the system after using the alternative system in order to use the well water. That is, 15 consecutive days is a maxiumum not 15 individual days.

A good water well should last indefinitely. At least as long as we live. Liners were suggested in the existing tanks, as discussed the type of power plant that would be used for pumping water from the well to the holding tanks. There was opposition to the use of diesel. Other than the noise, the smell was an overlying factor. Gasoline, propane and photo voltaic were also discussed.

In closing the meeting Ed Fietsch read the following part of our lease.:

The Gerle Creek Summer Home Tract Association has been recognized in the courts/36CFR211-1. Holders are eligible for membership even though a holder does not join each holder may be required by the association to pay an equitable share of the cost of installation and operation of services and utilities which the association approves and from which the holder receives direct benefits.

Submitted by Elmo "Bud" Irish Lot 29