

AGM 2019 - Water Commissioner's Detailed Report

Overview of 2018

During 2018 the “*Water System*” performed well with very few maintenance calls. The past few years of rebuilding the system with reliability enhancing measures is now giving us the desired results. I am pleased to report that there were very few service outages and when we did experience problems, they were almost always a result of incidents beyond our control. I believe that all Members were supplied with sufficient water to meet their needs throughout the year.

The most significant event in Water Operations this year was the completion of the long awaited extension of the “*Distribution System*” across La Calma/Las Lajas Norte as a long awaited Capital Project. The results of this project have been very positive for the Members in La Calma that were affected. We also now have the ability to easily reroute the flow of water and therefore further reduce service outages should repairs be needed in one portion of the system.

There were only a few minor system improvements and upgrades done during the year in an effort to conserve our financial resources to deal with more pressing Administration issues (such as the Conagua tariffs). There remains quite a bit of “low priority” work that still needs to be done, mostly the replacement and/or relocation of some of the older “*Access Links*”, primarily in La Huerta, as well as the replacement of a few inoperative valves and the portions of the Distribution Network.

Still not resolved during 2018 were the two carry-over access issues from 2016. One issue remains our inability to get a service vehicle into the La Calma well site. To my knowledge, there was no progress on resolving this issue during the past year. The other is our restricted access to the property where I keep the Asociación's tools and spare parts. I still do not have conditional access to the bodega through the judiciary system, so the matter has little impact on the ongoing Water Operations activities.

Well Performance

How are the wells performing?

Both of the active wells (La Huerta and La Calma) were able to keep up with the demand that the Membership placed on them during 2018. Both wells continued to demonstrate very stable performance.

The performance of the two active wells continued to be monitored closely throughout the year. With the assistance of two outstanding and very dedicated volunteers, Dan Kralik in La Calma and Byron Kirkham in La Huerta, three meter readings at each well site are recorded on a daily basis. These meters provide the following information:

1. The **volume of water** pumped (water turbine type flowmeter).
2. The **amount of electricity** consumed (CFE's electrical wattmeter).
3. The **length of time** that the pump runs (“run-time” hour meter).

With this data, I calculate two very important performance statistics that tell me how the “*Supply Network*” (well, pump and pipes/tubing that deliver water up to the storage tank) is performing.

1. The pumping **efficiency** is the quantity of water (in cubic meters) that is delivered to the storage tank for each kilowatt hour of electricity consumed. The greater the number, the more “efficient” the “*Delivery Network*” is operating. This factor directly impacts the Asociación’s costs to operate the well.
2. The **flow rate** is the quantity of water (in liters) that is pumped and delivered per second to the storage tank. This is an important statistic used to monitor the ongoing performance of the well over time. Consistency from month-to-month over the range of our demand is a good thing.

Again, my thanks to Dan and Byron for assisting me throughout the year.

La Calma Well

During 2018 this well supplied a total demand for 7,451 cu. mtrs. with an overall efficiency of 1.40 cu. mtrs./kWhr. and average flow rate of 3.57 ltrs./sec. Total run time for the pump this year was 580 hours. The demand on the well ranged from a high of approx. 40 cu. mtrs./day in April to a low of 10 cu. mtrs./day in September.

For comparison purposes, during 2017 the well supplied 8,150 cu. mtrs. with an overall efficiency of 1.40 cu. mtrs./kWhr. and average flow rate of 3.64 ltrs./sec.

Due to a history of performance issues with this well in past years, the current “pumping” strategy is to keep pump cycle times relatively short and to try and keep daily demand below 30 cu. mtrs./day. It seems to be working as the well is now very stable. As has been mentioned before, if demand increases due to additional development in La Calma, or if there is a return to very dry weather conditions, we could experience significant problems with this well that would be very expensive to correct.

La Huerta Well

During 2018 this well supplied a total volume of 13,315 cu. mtrs. with an overall efficiency of 1.47 cu. mtrs./kWhr. and average flow rate of 5.42 ltrs./sec. Total run time for the pump this year was 682 hours. The demand on the well ranged from a high of approx. 65 cu. mtrs./day in April to a low of 15 cu. mtrs./day in September.

For comparison purposes, during 2017 the well supplied 15,762 cu. mtrs. with an overall efficiency of 1.42 cu. mtrs./kWhr. and average flow rate of 5.13 ltrs./sec.

We continued to have a high rate of CFE related issues with the electricity supplied to this well site during the year which accounted for most of our service outages. Fortunately the damages to our equipment now seem to be relatively inexpensive and easily replaced items due to the protection equipment that was placed on the motor controls in 2017.

This well continues to deliver in excess of 100 cu. mtrs./day on a few occasions during the dry season when demand is high and appears to do it without complaint. For now this well continues to meet expectations. In my opinion, there is little more we can do to improve on this.

Camino Real Well

During 2018 this well was not operated and it has been many years since it was last used. I have no information on its current condition or ability to produce any significant amount of water.

The site of this well is also the preferred location upon which to build a future water storage "facility" to replace the Loop's aljibe, the location that the "Asociación" is currently using. As a deliberate attempt to protect the "Asociación's" access and ongoing use of this site (in consideration of the current property disputes with the local community), an area of approx. 10 x 10 meters was enclosed with chain link fencing and a securable access gate. Total cost to fence the site was \$16,806.

Water System Performance Review

What happened with the Supply Network in 2018?

The "Supply Network" is the portion of the "Water System" that takes water from the wells to the storage tanks.

New lines were installed in the past few years to upgrade the "Water System" to a gravity fed type of "Distribution Network". As in 2017, there were no leaks noticed during 2018 in this portion of the "Water System". The "Supply Network" has been very stable and proving to be reliable.

What happened with the Distribution Network in 2018?

The "Distribution Network" is the portion of the "Water System" that delivers water from the storage tanks to each Member's property line.

As a guide to detecting possible problems, I compare the pumping volumes from each well to the sum of all of the individual meter readings that are taken at the first of each month. The difference in these numbers is referred to as the "Loss" and can be attributed to one of three possible factors: leaks, metering inaccuracy or theft. This is of particular concern since the Asociación has to remit extraction taxes to CONAGUA based on how much water we pump from the wells, not what we use.

During 2018, we "lost" 2,429 cu. mtrs. (6.82 cu. mtrs./day) in the La Huerta branch and 1,169 cu. mtrs. (3.28 cu. mtrs./day) in the La Calma branch. The extraction taxes on this loss is about \$11,800 pesos an expense that is non-recoverable.

For comparison purposes, in 2017 we "lost" 2,568 cu. mtrs. (7.03 cu. mtrs./day) in the La Huerta branch and 1,015 cu. mtrs. (2.78 cu. mtrs./day) in the La Calma branch.

I remain of the opinion that this loss of water is due to overall degradation due to a combination of inaccuracies in metering and small leaks/seepage in the "Distribution Network". The Membership is encouraged to remain vigilant and report any leaks or theft that they become aware of to one of your Board of Directors immediately.

System Improvements

What improvements were done to the system during 2018?

The new La Calma Norte Pipeline project was completed in early 2018. This allows water from the storage tank in upper La Calma to flow across the top of La Calma and Las Lajas (following the dam water right-of-way) all of the way in a new 3" line. This eliminates the previous problems due to air being trapped in the system following periodic shutdowns. This new line also gives us the ability to shut off and isolate the older portion of the "*Distribution Network*" that crosses the Carretera in two locations and travels along the south side of the road through El Cerrito. The final cost of this project was close to \$270,000.

I continued to work on relocating selected water meter installations to more accessible locations at or near the edge of property lines, changing out older meters and installing back-flow preventers and proper shut-off valves.

During 2018, I completed the relocation of the "*Access Links*" at Casa Reno and Casa Kralik to bring them outside of the fenced properties and rebuilt the installation at Casa Mills and Casa Kelly to connect to the new line across the top of La Calma. The "*Access Link*" for Casa Claire was removed and capped at the request of the "*Responsible Member*". There remains only one "*Access Link*" in La Calma that is not easily accessed and has not yet been upgraded (Casa Nguyen).

Also during 2018, I re-installed the water meter that used to be on the Camino Real well in the line that delivers water to Casa Neely and Casa Thomson in upper La Huerta. We are now able to report a realistic extraction volume to CONAGUA for that well in order to protect the "*Asociación's*" permit.

What improvements do I feel need to be done in 2019?

During 2019, I am planning on having the inactive Camino Real well professionally inspected by a registered well inspection and remediation company. Depending on the findings, I will be able to determine if the well can be salvaged and produce water of a useable volume. If so, a small storage tank and electrical controls can be installed to put the well into operation again. The output from this well could then be used to supply the demand from the properties in La Huerta that are above the existing storage tank.

Water is currently supplied to Casa Neely and Casa Thomson by means of a booster pump located in the aljibe at Casa Loop. It is powered by a wired connection from the stables on the McCamis' property. This pump and the cost to operate it could be eliminated if efforts to put the Camino Real well back into operation are successful. The anticipated cost to complete this work is \$42,000.

There are still quite a number of aging meters in use in La Huerta that also have no back-flow preventers or security and/or shut-off valves. There also remains a few "*Access Link*" installations that are not easily accessible and will need to be moved to the edges of the properties. This work is time consuming and difficult but during 2019 I hope to complete additional work on this program as time and available funds allow.

Water Quality

How safe is the water to drink?

One of the “Terms and Conditions” of our well concessions with CONAGUA is that we conduct a complete analysis of extracted water from each well at least once every two years. This was last done in early 2017. As part of the application process to renew the well concessions by the end of 2018, in mid-year I arranged for testing samples to be taken by the State Water Authority, Agua Jalisco. There is no cost to the “Asociacion” if requesting these tests through the Water Dept. of the Municipality of Poncitlan. One drawback with this though, even though the samples were taken in early July, we have not yet received the results.

Previous test results have shown that there were low levels of biological contaminants present in the water at the time of sampling. Agua Jalisco has in the past “recommended” that we inject chlorine at the well heads to reduce this level of contamination to zero - if the water if it is to be used for human consumption.

I remain reluctant to recommend to the Membership that we move forward with a chlorination program for the following reasons. I am of the opinion that the largest use of water by the Membership is the watering of vegetation, not drinking water. Some people also have a “phobia” about adding chemicals to the water we use. There is also the added cost factor. Due to the fact that the “Asociacion” does not have a water testing and treatment program, I cannot currently guarantee that the water is safe to drink at all times of the year and at all households. For the time being, I recommend that all residents should either operate some form of water purification system in their home or drink only bottled water from reputable suppliers.

Security

How secure is our system?

Over the past few years, considerable effort has been made to secure the Asociación’s well sites and storage facilities from vandalism, within the limits of practicality. In my opinion, there remains only one area of significant risk remaining - the water storage facility for La Huerta that is located under the garage area at Casa Loop.

Access to the garage is not under the complete control of the “Asociación” and as such it remains an area of vulnerability. The Loops have indicated a desire to eventually sell their property and it may be necessary to discontinue the use of this aljibe at some time in the future.

Future Capital Project Update - Elevated Storage Tank for La Huerta

As discussed above, the Asociación will need to eventually proceed with this project. It was initially approved by the Membership at the 2012 AGM but never moved forward due to a lack of funding. It was “re-approved” at the 2016 AGM but then cancelled at the 2017 AGM, again because of a lack of funding. Previous Board of Directors examined a number of alternative locations and system designs

and determined that the most economical and logistically viable solution would be to locate a water storage facility over the Camino Real well site (corner of Calle Camino Real and Calle Las Flores).

Recognizing this future requirement, the Membership at the 2018 AGM approved the fencing of a 100 sq. mtr. portion of the Lot on which the well is located. Due to the on-going land dispute in the area, it is felt that demonstrating active use of the site may strengthen the *"Asociacion's"* legal position to claim this property for its exclusive use. In my opinion, however, it may not be wise to make any significant Capital Investment at the site until such time as the outcome of the current land dispute is resolved.

Project Update – La Calma Norte Water Line Extension

In early 2016, work was completed on the first phase of this project. *"Phase 1"* consisted of approximately 250 mtrs. of 3" line that extended the existing *"Distribution Network"* from Casa Jensen to Casa Villasenor.

"Phase 2" of the project, completed in early 2018, was an additional 480 mtrs. of 3" line to continue the extension of the line along the existing Federal *"right-of-way"* (the dam water pipeline) from Casa Villasenor over to Calle Las Lajas. There the new pipe was connected to the existing water line buried along the edge of Calle Las Lajas. At the same time, a new branch line with a shutoff valve was installed to replace the current service line to Casas Mills and Casa Kelly as well as the currently undeveloped *"Lots"* in that area. Total cost to complete *"Phase 2"* of the project was approx. \$270,000. This project is now fully completed.

In Closing

One of the other things I keep track of is the status of the various *"Lots"* that are in the *"Water System"*. As of December 31st, 2018 there were 53 *"Lots"* with *"Access Links"*, 2 of which are currently suspended at residences that are under construction. This leaves a balance of 51 *"Lots"* that are currently receiving water from the system.

There are an additional 30 vacant *"Lots"* that have *"Responsible Members"* who have continued to keep up their support of the Asociación over the past few years by staying current with all Capital Assessments and annual Membership Fees.

And finally, a few words on another one of my tasks on the Board, Voter Eligibility for the upcoming Annual General Assembly. Of the above 83 currently recognized *"Lots"*, there were 80 that have *"Responsible Members"* who were fully paid up as of Dec. 31st and therefore considered to be *"Members in Good Standing"* and eligible to vote. This represents a remarkable turnaround from the collections issues that the *"Asociación"* has experience in the recent past.

I continue to enjoy working with many of the residents and contractors in this community and to provide my assistance with maintenance and evolution of your *"Water System"*.