

Department of Public Works



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September 29, 2011

To: County Service Area No. 11 (Pescadero Water System) Customers and Property Owners:

Re: *Public Meeting for County Service Area No. 11 (CSA 11) – October 19, 2011*

The County of San Mateo Department of Public Works would like to apologize for the inconvenience the recent water outage caused our customers during the week of August 22, 2011 and thank you for your understanding and patience as we worked to return the system to normal operating conditions. We have scheduled a public meeting for our customers and property owners within CSA 11 to communicate details of the water outage, proposed work going forward to prevent a similar incident, and to discuss a water rate setting process to adequately support the water system. The details of the public meeting are as follows:

Wednesday, October 19, 2011, 6:30 P.M.

at the

Multi-Purpose Room, Pescadero Elementary School, 620 North Street, Pescadero, CA 94060

A report describing the events and work that occurred during the week of August 22, 2011 is enclosed. The report also outlines identified work and associated timelines to improve the reliability of the water system. The summary has also been posted to the Department of Public Works website under Flood, Lighting, Sewer & Water/Water Services/CSA11 at:

<http://www.co.sanmateo.ca.us/portal/site/publicworks/>

Additional information to be discussed at the meeting will be posted on the above web site or sent via separate mailings prior to the meeting. We look forward to your participation at the public meeting. Please contact America Sanchez or Mark Chow if you have any questions or need additional information. They can be reached by telephone at (650) 363-4100 or by e-mail at:

acsanchez@co.sanmateo.ca.us
mchow@co.sanmateo.ca.us

Very truly yours,

James C. Porter
Director of Public Works

JCP:AMS:MC:sdd

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Enclosure: August 2011 Water Outage Report

cc: Supervisor Don Horsley, 3rd District
David Boesch, County Manager
Peggy Jensen, Deputy County Manager, Community Services
Pescadero Municipal Advisory Council, P.O. Box 249, Pescadero, CA 94060
Ann M. Stillman, P.E., Deputy Director, Engineering and Resource Protection
Mark Chow, P.E., Principal Civil Engineer, Utilities-Flood Control-Watershed Protection
Ed Garcia, P.E., Senior Civil Engineer, Utilities-Flood Control-Watershed Protection
America Sanchez, Associate Engineer, Utilities-Flood Control-Watershed Protection

Pescadero Community Water System – County Service Area No. 11 (CSA11)

August 2011 Water Outage Report

Sequence of Events Leading to Water Outage, Actions Taken, and Recommendations

Monday, August 22, 2011

At approximately 3:30 p.m. CSA11 staff began receiving calls from CSA11 customers stating that they had little water pressure or no water. Thomas Sipp (Thomas), a County Department of Public Works (DPW) Stationary Engineer, familiar with the water system, was informed immediately of the possible water outage. Thomas arrived at the CSA11 tank location at about 4:45 p.m. and found the pump in the Production Well (Well #1) not operating and the storage tank level at 0.7 feet. He turned the pump back on at 5:30 p.m. and observed a continuous pumping rate of approximately 57 gallons per minute (gpm). He remained at the site until 9:30 p.m. At that time, the pump was running and filling the storage tank. CSA11 customers had water before Thomas left and staff did not receive additional calls that night regarding water issues.

Tuesday, August 23, 2011

Gary Webb (Gary), a DPW Supervising Stationary Engineer, received a text message at approximately 6:30 a.m. from a CSA11 customer stating that there was no water. Gary notified Thomas, who left the County's Tower Road complex in San Mateo for CSA11 at 6:40 a.m. Gary followed Thomas shortly thereafter to CSA11. They discovered that the Well #1 three phase pump had failed and two of the three legs of the pump had shorted to ground. It was determined at this point that a replacement pump was necessary. The pump in the Standby Well (Well #2) was immediately put into operation and although it pumped continuously, it was only delivering on average 5-7 gallons of water per minute. This is well below the 60 gpm production rate that the pump is rated to produce.

To secure a replacement pump for Well #1, Gary contacted local contractors to inquire about the availability of a compatible pump and labor/equipment to remove the failed pump and install the new pump. Contractors indicated that they did not have a compatible pump in stock and that crews would not be available to perform the repair work until Wednesday, August 24, 2011 at the earliest. At that point, DPW began contacting pump suppliers to locate a replacement pump that could be installed the same day.

The State Department of Public Health (DPH) was informed of the situation and after having a discussion via telephone with Gary and office staff (Mark Chow and America Sanchez), DPH determined that pressure in the distribution system had been lost and required CSA11 to issue Boil Water Notices to its customers. DPW went door-to-door providing Boil Water Notices on August 23, 2011 and posted the Boil Water Notice on the DPW website. DPH also required CSA11 to collect water samples at 287 Stage Road and the pump house by the storage tank to test for bacteria in the distribution system as Well #2 was inactive for a period of time and not flushed prior to delivering water to the CSA11 system. Test results from these samples reported to DPW on August 24, 2011 were negative for bacteria.

DPW delivered 3,500 gallons of water to the California Department of Forestry at approximately 11:30 a.m. to ensure water was available for fire-fighting purposes.

The County of San Mateo Environmental Health Division was notified by DPH of the Boil Water Notice and ordered the closure of businesses that sold foods that were not exclusively prepackaged. This closure affected four businesses.

DPW discussed with DPH strategies for providing potable water and replenishing the storage tank, including the hauling of water by certified haulers to a location where customers could obtain drinking water or fill the CSA11 storage tank. However, after multiple discussions it was concluded that due to the location/elevation of the tank and the amount of water that could be hauled by approved water companies (4,000 gallons per truck load which is not a significant amount compared to the storage tank capacity of 140,000 gallons), hauling water to fill the tank was determined not to be feasible. In addition, we anticipated completing pump repairs that evening, so bringing in water via truck would not have appreciably accelerated the time that it would take to get the water system on-line. Hauling water would not solve the water outage, customers would still be under a Boil Water Notice, and the introduction of trucked water could potentially compromise the integrity of the system by introducing contaminants into the CSA11 water system. Water trucking companies also would not park their filled trucks for CSA11 customers to draw water from. DPW provided potable water to its customers by delivering 900 gallons of bottled drinking water to Pescadero at approximately 5:00 p.m. Customers were informed to take 2 gallons per person (as recommended by County of San Mateo Environmental Health Division for potable water provisions per day during emergency water outages). DPW staff assisted by hand delivering drinking water to those customers who could not stop by to pick-up their supply of water on their own. DPW arranged for the delivery of four portable restrooms to a lot adjacent to the intersection of Stage Road and Pescadero Creek Road.

While some DPW staff worked to arrange for potentially hauling water and the delivery of bottled water, others worked on locating and contacting companies that sell, install, and repair pumps. Specialized contractors were contacted as the existing pump had to be lifted out of the well from a depth of 200 feet underground and a new pump reinstalled at or below the original depth. A contractor was located and authorized to mobilize to the site at 12:30 p.m. once a new pump was located in Salinas. The new pump arrived at the site at 6:51 p.m. It was installed and running by approximately 12:00 a.m. on Wednesday, August 24, 2011. The pump was lowered an additional 37' into the well after reviewing well sounding data to verify the static water surface elevation in the well. DPW staff remained at the site until 4:30 a.m. to ensure that the new pump was functioning properly and the water supply in the tank was being replenished.

Wednesday, August 24, 2011 through Friday, August 26, 2011

Chlorine was injected into the water supply system during the morning of Wednesday, August 24, 2011 for disinfection purposes due to the loss of pressure in the distribution system. The hydrants at the end of the CSA11 pipes were opened (flushed) to ensure that

chlorine was distributed throughout the system for proper disinfection. DPH required at least 1.5 parts per million (ppm) of chlorine concentration throughout the system. Staff sampled the chlorine concentration at five (5) locations on August 24, 25, and 26 to ensure the disinfection requirements were met and reported the values to DPH.

DPH also required that bacteriological samples be taken approximately 24 hours apart on August 24 and 25 from the same five (5) locations from which chlorine concentrations were analyzed. Two consecutive sets of sample results needed to be free of bacteria in order for DPH to cancel the Boil Water Notice. Staff collected the samples on said dates and the results were negative for bacteria. The Boil Water Notice was cancelled on August 26 at 2:01 p.m. Staff notified CSA11 customers via email, telephone, and hand delivery of the cancellation notice (in English and Spanish) door-to-door. The cancellation notice was also posted on the DPW website.

Findings

According to CSA11 records, the pump in Well # 1 was replaced in 2009 and was not expected to fail in such a short timeframe as we believe it was installed to the appropriate depth as indicated on the record drawings. According to the record drawings, the depth of the Well #1 is 260 feet. However, when the pump was removed on August 23, 2011 a 300 foot long metal tape was lowered into the well and it was reported to not reach the bottom of the well. If this measurement is accurate and based on prior well soundings performed by CSA11, it may indicate that the pump was not fully submerged in water and may have been pumping water and air causing premature pump failure. A decision was made when installing the new pump to add an additional 37 feet of 2” galvanized pipe that was available at the time to the intake line. The top of the new pump is currently at 225 feet below the surface elevation of the well but the actual depth and condition of the Well #1 need to be determined.

The pump at Well #2 was only pumping at a rate of 5-7 gallons per minute while it was used during the incident. The pump and condition of Well #2 will require further investigation.

Recommended Actions and Timeline for Future Work

Item No.	Actions	Timeline
1.	Continue monitoring the storage tank level and associated measurement devices	- Each weekday (8/29/11 to 9/9/11) - 2-times per week thereafter
2.	Test existing alarm system and investigate methods to improve alarm system’s reliability	Re-programmed existing alarm system on 9/7/11
3.	Obtain contractor proposals to investigate condition of Well #1 (confirm record drawing information – well depth and screen depth) and replace temporary 2” galvanized intake pipe with 3” galvanized pipe	October 2011

Item No.	Actions	Timeline
4.	Obtain contractor proposals to investigate Well #2 pump and condition of well, confirm record drawing information (well depth and screen depth)	October 2011
5.	Complete cost accounting of water outage expenditures to determine impact on CSA11 Fund Balance	October 2011
6.	Public meeting with CSA11 customers to discuss water outage, operations moving forward, and future water rates	October 19, 2011
7.	Select contractor(s) for work items #3 & #4 above	November 2011
8.	Conduct water rate setting process	October to December 2011
9.	<p>Investigate feasibility of potential modifications to current operations:</p> <ul style="list-style-type: none"> a. Need to determine through working with DPH whether existing permit could be amended to allow lead/lag setup for both pumps b. Verify that existing cathodic protection for storage tank is adequate c. Verify that existing electric circuits for 3-phase pumping is appropriate d. Verify the need to reconfigure existing settings for motor saver e. Increase capacity of the pump in Well #2 to provide adequate supply volume in the event of failure of the pump in Well #1 f. Work with DPH to allow periodic use of Well #2 g. Retain spare pumps 	Nov. 2011 to Jan. 2012

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