

CF



County of Santa Cruz

DEPARTMENT OF PUBLIC WORKS

701 OCEAN STREET, ROOM 410, SANTA CRUZ, CA 95060-4070
(831) 454-2160 FAX (831) 454-2385 TDD (831) 454-2123

THOMAS L. BOLICH
DIRECTOR OF PUBLIC WORKS

February 27, 2009

ROGER W. BRIGGS, EXECUTIVE OFFICER
California Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

SUBJECT: SECOND TECHNICAL REPORT AND COMPLIANCE TIME SCHEDULE
BOULDER CREEK CSA NO. 7- ORDER NO. 01-034

Dear Mr. Briggs:

This letter is in response to your letter dated December 19, 2008, in which you requested a technical report describing the measures we will employ to eliminate spills of the force main, a time schedule of milestones and a schedule of status reports to you of our progress toward regaining compliance with order no. 01-034.

County Service Area No. 7 (CSA) has had NUMEROUS spills in various locations along the force main between the treatment plant and the leachfields. The spills have resulted in secondary treated domestic wastewater flowing into Boulder Creek. The most recent spill from a leak in the force main occurred on March 15, 2007, between pump station 3 and the leachfields. There have been seven spills in this part of the force main over the last few years. Most recently, there were two spills on October 3, 2008, and October 7, 2008, in pump station 3 (BC3).

In November 2006, John Larson, prepared an engineering analysis report on the force main and recommended repairing approximately 700 feet of force main above BC3. The engineer's estimate for this work is approximately \$300,000. Since that time, staff have been exploring ways to obtain funding for this project, including increasing sewer rates.

Several other options to upgrade the sewer system are also under consideration, including providing tertiary treated reclaimed water for use at a nearby golf course (with an engineer's cost estimate of \$333,200) and reducing the inflow of surface water at several key locations. Because there continues to be limited funding, it has been determined that the first priority is to complete the implementation of Supervisory Control and Data Acquisition (SCADA) at all of the pump stations and the treatment plant, and the second priority is to replace the force main between BC3 and the leachfield. The proposed 2009/2010 budget has \$68,484 for the final SCADA work at the treatment plant and \$222,685 for the force main replacement. The County has been receiving bids significantly lower than our engineer's estimates recently, and we believe that the proposed force main replacement budget could be sufficient. Staff have met with the CSA No. 7 homeowners (on February 20, 2009) and they have agreed to a 15 percent increase in their rates to pay for the SCADA and force main replacement projects.

Sanitation engineers are currently completing the design to construct a new force main from BC3 to Fern Rock Way and will begin real property negotiations with the affected property owners. It is our plan to have the project designed in time to qualify for grant funds through the federal economic stimulus program.

Interim Measures

The operations staff have devised an alternative to reduce the amount of secondary treated domestic wastewater spilled by updating the monitoring and current alarm pump station systems with SCADA. SCADA would allow remote monitoring and control of the sewer system from the D. A. Porath Sanitation Facility.

The plan includes installing a flowmeter and a motorized three-way valve in pump station 2 (BC2). See the attached plan for the BC2 modifications. A pipe will be installed from BC2 directly to the digester. The treatment plant has an existing modulating valve to regulate the primary effluent flow from the equalization tank to the aeration tank. A change in the force main pressure from BC2 to BC3 will cause the modulating valve to close and the primary effluent flow from the equalization tank to the aeration tank to be shut down.

The pressure in the force main from BC3 to the leachfields will be monitored by a pressure sensor located in BC3. A high or low pressure in the force main will cause BC2 and BC3 to shut down and cause the three-way valve to close the effluent discharge at BC2 to BC3 and bypass the force main into the digester. At the same time, the modulating valve will close and the primary effluent flow from the equalization tank to the aeration tank will shut down.

In addition, SCADA instruments will monitor the wet well elevations in BC3. A high or low wet well level in BC3 combined with low flows from BC2 will cause the three way valve to shutdown effluent flow at BC2 and bypass the flow back to the digester. The modulating valve will simultaneously close and the primary effluent flow from the equalization tank to the aeration tank will shut down.

The equalization tank is capable of holding flow for approximately 18 hours. This is sufficient time for operations staff to respond to the alarms. Alarms at BC2 and BC3 will only be allowed to be reset by an Electrical Instrumentation Technician and a Treatment Plant Operator, who will respond together and wait until they both have confirmed whether it is a pump station or a force main problem.

The District operations staff is prepared to make the appropriate modifications and install the three-way valve and flowmeter at BC2. It is also necessary to install a repeater antenna to remotely communicate with the SCADA equipment based in the D. A. Porath Sanitation Facility. It will take approximately five months to purchase, install, and test the equipment. The cost to make the modifications at the pump stations is approximately \$10,000. Sufficient funds are available in the capital replacement reserve. In the future, the modifications will also help bypass flow in the construction of the force main from BC3 to the leachfields.

Time Schedule of Milestones

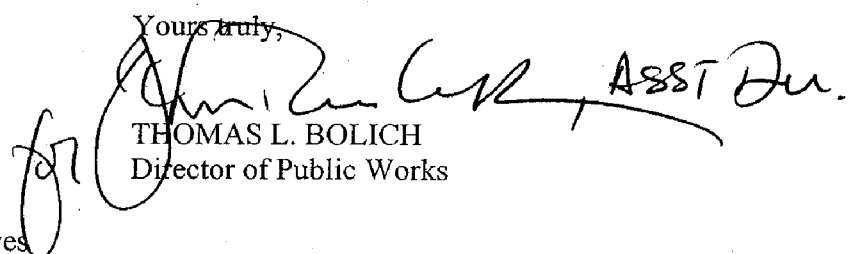
The table below provides a summary of the tasks proposed and the anticipated time schedule for those tasks.

TASK	START	END	RESULTS
Order flow meters, motorized valves and upgrades to SCADA system for interim measures	March 1, 2009	July 1, 2009	SCADA control of pressure between pump stations BC2 and BC3. Ability to provide remote control settings.
Design of Force Main Replacement	February 20, 2009	April 15, 2009	
Complete SCADA system at Treatment Plant	Current	August 30, 2009	Remote control of pump station and treatment plant equipment. Includes pumps, motors, valves and generators, etc.
BOS approve plans and specs to be bid for Force Main		May 5, 2009	
Bids Received		June 3, 2009	
Award Contract		June 23, 2009	
Construction of Force Main Replacement	July 27, 2009	October 1, 2009	

The State Board will be copied on all correspondence to the Board of Supervisors regarding CSA No. 7 and staff will provide updates once the task has been completed or every three months, whichever is greater.

Please contact Rachel Lather, Sanitation Engineer at (831) 454-2637 if you have any questions or need further information regarding the proposal for reducing overflows at Boulder Creek, CSA No.7.

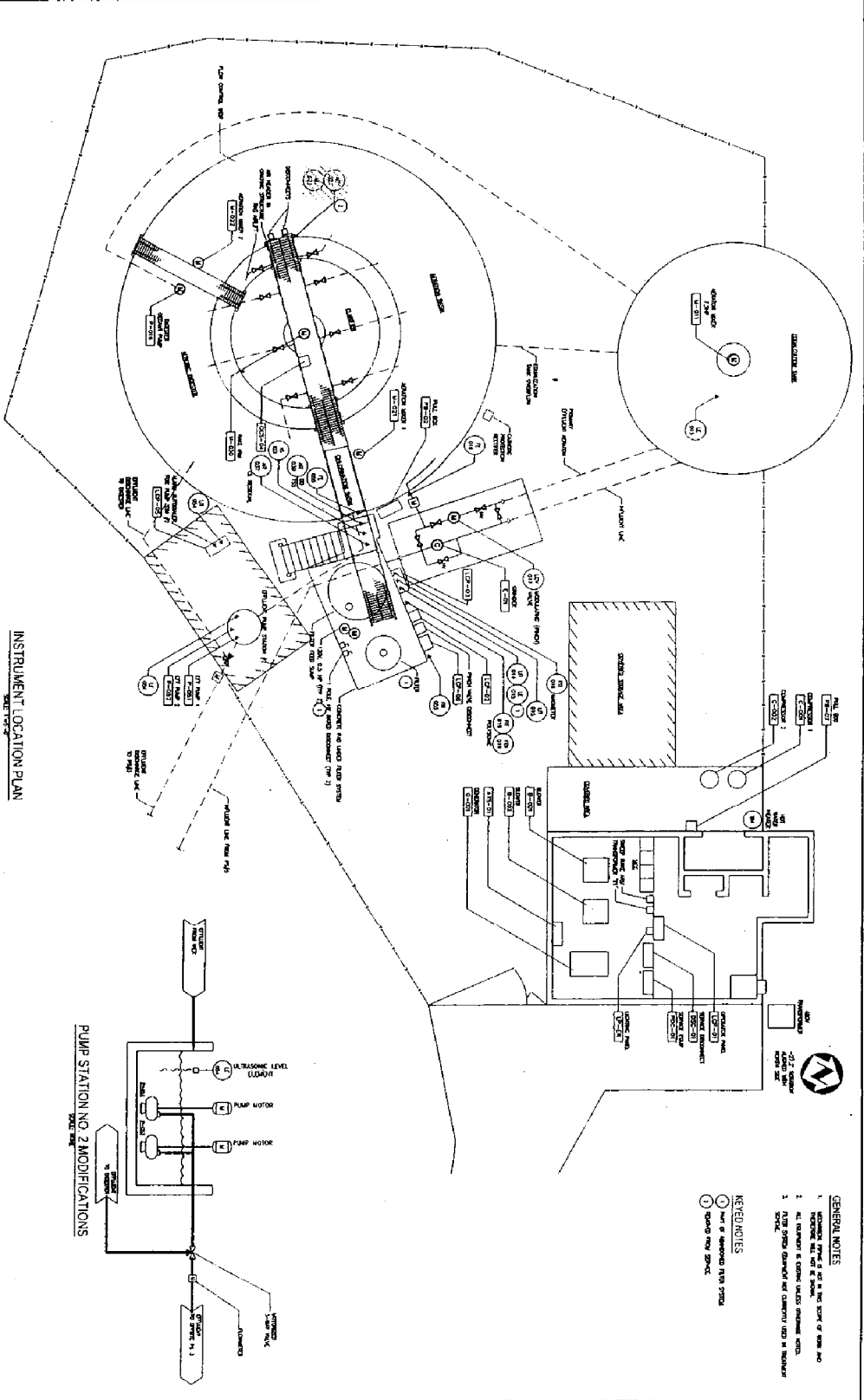
Yours truly,

 ASST Dir.
 THOMAS L. BOLICH
 Director of Public Works

RLL:BB:bbs/260.wpd

Copy to: CSA No. 7 Representatives
 Supervisor Stone

Sheet No.	1	2	3	4	5	6	7	8	9	10
Revision										
Author	COUNTY OF SANTA CRUZ DEPT. OF PUBLIC WORKS 1201 OCEAN STREET SAN JUAN, CALIF. 95060									
Checked	AS RECORDED									
Drawn	INSTRUMENTATION INSTRUMENT LOCATION PLAN BOULDER CREEK SANTA CRUZ GDM ANNUAL PROJECT									
Scale	1-101									
Project No.	12277.00									



- GENERAL NOTES**
1. INSTRUMENTATION SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTRUMENTATION MANUAL.
 2. ALL INSTRUMENTATION SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTRUMENTATION MANUAL.
 3. THE INSTRUMENTATION SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTRUMENTATION MANUAL.
- KEYNOTES**
- 1. INSTRUMENTATION POINT
 - 2. INSTRUMENTATION POINT
 - 3. INSTRUMENTATION POINT