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# CMSA Newsletter

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Central Marin Sanitation Agency

January 2005

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## **GENERAL**

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### **Desalination**

MMWD has acquired the necessary permits/leases to begin constructing the pilot desalination facility and anticipates to begin operation in late March 2005. The solids discharge from the plant's filter systems will likely be continuously discharged into the San Rafael Sanitation District (SRSD) collection system, which conveys them to CMSA. This alternative is preferred to their original proposal of batch discharge to CMSA via septage hauler, which is the method they used during the 1991 pilot testing.

MMWD is in the process of applying for a CMSA Groundwater discharge permit and is working with SRSD for authorization to discharge into their system. Staff has provided the sampling requirements for the pilot facility under our permit. These include initial and monthly sampling to verify compliance with our local discharge limits, and 13267 sampling in March and October for a host of organic compounds. We will collect a small permit fee based on the volume of flow discharged.

### **Security**

We have put the security fence extension/front gate automation contract out to bid, and held the site walkthrough on Thursday,

January 20. The work involves extending the existing facility security fence to the new front gate, automating the front gate, adding access card readers, and the associated site, electrical and control work.

Bid opening is on Tuesday, February 1. We expect to bring a recommendation to the Board of Commissioners at their February 8 meeting, and, pending their approval, execute a contract for the work shortly after that. We anticipate the project being completed later this spring, subject to weather and equipment availability.

### **Strategic Plan**

Our planning committee has been moving forward with activities needed to prepare a master implementation schedule. These include defining and assigning the responsible parties for each strategic action, identify their resource needs and priorities, and determining their level of effort. Once this parameters have been established, we can begin populating the schedule. We agreed that the schedule will be a five year picture, with the first being well defined. Our goal is to have this process completed in April and share the result with the Board.

Our general manager gave a presentation on our strategic planning process at the January CASA conference. The presentation was well received and the audience asked many

good questions, some of which will help guide us in the future.

### **Safety**

CMSA's Safety Committee had the first committee meeting of the year on January 26. The new year brings a new calendar of scheduled safety meetings, inspections, training and reviews. A new responsibility the committee took on this year was reviewing the Agency's safety policies on an annual basis to ensure policies are up to date and technically accurate. The committee also performs annual safety inspections of all Agency owned and operated facilities to ensure unsafe conditions are identified, and to provide oversight of corrective actions taken to remedy any safety issues observed. In January 2005, a bi-annual safety quiz was developed and given to all Agency personnel. The tests were graded and the results will be used to identify areas where personnel could benefit from training.

## **CAPITAL/ ENGINEERING**

### **Capacity Study**

In December we authorized Carollo to develop the treatment plant hydrographs using a continuous simulation (CS) modeling approach. The hydrographs show the relationship between statistical rain events (i.e. 5 yr storm) and their resulting flows at our headworks. Their original approach, the design storm method, significantly underestimated the peak influent flows and volumes. The continuous simulation will predict more accurate flows and is more defensible to the regional board and other interested parties.

The phase I work includes the hydrograph development, a treatment evaluation of our facility's unit processes, and a treatment plant hydraulic analysis. The findings will identify how much flow each process can manage from hydraulic and treatment perspective, and the probability of various influent flows during major wet weather events. This information will be used in Phase II to assess and select capacity management alternatives.

We have received the Technical Memorandum for Phase I, not including the CS work, and met internally to review and provide feedback. Carollo will be providing staff

the continuous simulation results and responding to our tech memo comments in the near future, and will be giving the Board a presentation on the Phase I findings at their February meeting.

### **Cogeneration**

We've been testing the new Waukesha on digester gas in the past few weeks. A large part of the test was preparing the equipment used to remove the contaminant siloxane from the gas and the start-up of all the related equipment. Start-up of the filtering equipment began on January 10<sup>th</sup>. Things went reasonably well, but not smoothly. We failed on that day in our ultimate objective which was to start the engine on digester gas. Since that day we have partially succeeded in that, but only in fits and starts and the situation now is more clearly defined. We have too much gas pressure going into the fuel regulators and need to make adjustments at the compressors.

Speaking of compressors, they took up about half of our day's efforts on the 10<sup>th</sup> because of a multitude of leaks in their gas pipe joints. We also noted some poorly aligned flexible couplings which needed correcting, but were not the show stoppers that the leaks were. Since then we've gone back and forth with the compressor manufacturer, McKenna Engineering. After some haggling, they agreed that the problems would all be fixed by them and they hired what appears to be a very good local subcontractor, Process Fabrication from Elk Grove (near

Sacramento), to make the repairs. They were here on Friday, January 21<sup>st</sup> and returned to make sure the repairs passed our tests the following Monday. All went well and we appear to be done with compressor repairs.

However, there are some other things that should be done - and which are underway - so that we may continue with our functional testing, beginning with the digester gas (again) on Tuesday, February 1<sup>st</sup>. After we have that up and operating we should be able to proceed with other tests such as the heat recovery system. We've been told that Stewart and Stevenson is preparing materials for training.

Also, on the horizon for next week, is the engine oil system modification. We've been told that the local Stewart and Stevenson maintenance facility is expecting the final shipment of parts for those modifications next week (week of January 31<sup>st</sup>). Then there are the changes underway to move the fuel solenoid-operated valves and provide the proper relief and vent lines to our heat recovery system.

In summary it looks like the second week of February may be a big week in making progress toward completing the functional tests and beginning operation of the new cogeneration system

### **Marine Outfall Maintenance**

Parker Diving has completed the 2004 inspection and riser

extension for our marine outfall. This spring we will collaborate with Parker Diving to test the use of air wrenches for unbolting and rebolting riser extensions. We are also developing improved maintenance procedures, including an earlier start date for the annual inspection, and riser extension guidelines to reduce the need for dredging in future years. Air wrenches, earlier start dates and reduced dredging should result in quicker, more efficient inspections and riser extension in the future. All of which translates to cost savings.

#### **Roof Beam Restoration**

Ken Katen met with an architect and a structural engineer at Weir/Andrewson Associates to refine the scope and details of their conservation proposal for the Administration Building's exposed roof beams. The goal was to develop a proposal that was simpler and that would permit easier inspection of the beam ends' future condition. Once we receive their revised proposal, we will formulate a plan to stabilize the beam ends and monitor their future condition.

#### **Polymer Replacement**

We are developing a new contract for our sludge dewatering polymer. We have surveyed our operations staff, and selected other wastewater treatment plants in the Bay Area to identify potential advantages, disadvantages, and equipment and operational requirements of the various forms of polymer (liquid emulsion, dry powder, or liquid mannich). We will use the survey results to refine the scope of the new contract, any polymer testing for it, and to plan for any equipment and operational changes that we might need to make before beginning to use a new polymer. Because of price volatility for both raw materials and transportation, we are also developing a mechanism for revisiting the cost of polymer during the life of the new contract.

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### **BUSINESS SERVICES**

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#### **Comprehensive Annual Financial Report (CAFR)**

As previously reported, the Agency began work on the Comprehensive Annual Financial Report (CAFR) for fiscal year ended June, 30 2004, in November 2004. The CAFR is designed to be "comprehensive" in scope, similar to an Annual Report of a publicly held Agency. The CAFR consists of three sections: Introductory, Financial and Statistical. The Introductory and Financial sections of the CAFR provides disclosures that go beyond the numbers, and describe details of programs as well as management's intentions. The Statistical section provides

information on financial trends as well as miscellaneous Agency related information and statistics. The CAFR was completed in December 2004 and included in the January 2005 Commission Meeting Agenda for review and acceptance by the Board. The Board subsequently accepted the CAFR during January 2005 meeting.

#### **Debt Issue Planning**

At the November 2004 Board meeting, the budget committee presented their recommendation regarding the preferred approach for financing a major capacity project and applicable CIP. They considered either raising the sanitary sewer charge (SSC) over a multi-year period or issuing debt. The committee recommended that the Board consider issuing debt if a major capacity enhancement project is recommended at the end of the Capacity Management Alternative Study, and the Agency moves forward with implementation. The full Board agreed and directed staff to use the debt issue case for our financial planning with the guidelines being to maintain approximately \$5 million in cash reserves, pay for operating expenses and minor CIP from the regular SSC rates, and fund major CIP with debt.

In order to better predict the SSC rate increase required to pay-down the annual debt service used to fund major CIP, staff spent considerable time analyzing and updating the current CIP. Analysis including

ensuring the revised CIP aligned with the objectives in our strategic business plan. Two revised comprehensive CIP schedules were developed and presented to the Board during the January 2005 meeting. The first schedule contains projects, studies, and equipment repair/replacement activities that we believe will be funded through the regular SSC rates. The second includes projects that we foresee as being funded through a bundled debt issuance.

The information from the revised CIP schedules were then used to revise the rate forecast summary documents that had been previously developed and presented at the November 2004 Board meeting. Two rate forecast scenarios were prepared and presented at the January 2005 Board meeting. The first scenario assumed a \$5 million capacity improvement project and the second a \$10 million project.

Over the next couple of months, we will continue to refine the CIP cost estimates and schedule, as well as receive additional information on capacity project alternatives and costs, both of which will then be used to further refine the rate forecast summary documents. All of this information will be presented at future Commission meetings to assist the Board in making decisions regarding the Agency's sewer service charge.

#### **Asset Management**

CMSA continues to implement its Asset Management Program with a deliberate and managed approach. The current focus of the program is the completion of the Computerized Maintenance Management System (CMMS) Phase One tasks. Phase One has three Milestones 1) Corrective Maintenance Module Roll Out 2) Asset Tracking Procedures and Documentation Development 3) Asset Data Base - Data Collection and Population. Milestone One has previously been completed and the corrective maintenance module is successfully being used. Milestone Two is nearing completion, with the document and procedure development being finalized. These procedures and documents will provide a road map for staff to ensure assets are properly recorded, and tracked from purchase to disposal. Milestone Three, the data collection component is about 50% completed. With the data collected, data entry functions have begun. A part time temporary employee was hired to assist with the data entry duties, working 20 hrs a week.

#### **Contract Management**

CMSA has a contract with Pioneer Americas for the supply of sodium hypochlorite solution. The contract expires on February 24, 2005 and contains a provision that allows for two, one year extensions at the same unit cost and provisions. A market survey of eleven POTW's conducted in November 2004 and January 2005 indicated CMSA's current contract unit cost is competitive with other POTW's contract unit costs.

Based on the surveys, CMSA determined that extending the contract would be justified and more economical than re-bidding the contract. Pioneer Americas was contacted to inquire about extending the contract. Pioneer Americas informed CMSA they would not be able to extend our current contract at the same unit cost. Pioneer requested CMSA amend the current contract to increase unit cost by 41.2%, before they would extend. Pioneer indicated this price increase was due to the volatility of the chlor-alkali market, and increased fuel and energy cost. After considering whether to amend or re-bid the contract, staff determined that it would be in the best interest of the Agency to bid the contract. Bidding fosters competition by other sodium hypochlorite suppliers, potentially providing CMSA with a better contract price. A new sodium hypochlorite contract was subsequently prepared and sent out for bid with six potential vendors. A pre-bid tour took place on January 26, and bids will be opened February 2.

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## **OPERATIONS & MAINTENANCE**

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#### **Wet Weather Process Control Contingency Plan**

In October CMSA received our updated wet weather standard operating procedures that was developed with our consultant CH2M Hill. Since then Operations staff have trained

on the procedures and have commented on some details. The Process Control Coordinator worked with staff to update the SOP details and to add a contingency plan to address possible flooding of our facilities during extreme wet weather events. The contingency plan is required as due diligence under our NPDES permit and gives staff guidance to be protective of public health, the environment and our facilities during these extreme conditions.

CMSA has the 4 million gallon effluent storage pond for events when plant influent flow exceeds the capacity of the outfall. Since these events are a combination of high tide and high flow, the relatively "small" 4.2 million gallon capacity of the pond may be enough. However, if extreme conditions continue and flooding of the pond is imminent, staff will prepare to capture flow in the storm drainage ditches around the pond, using sand bag dams. If conditions continue the contingency plan includes call out and notification lists. Staff has required sampling and posting requirements to protect the public. Looking towards the future, our Capacity Study will produce recommendations for solutions that will minimize the risk of flooding. The report will be completed by May 2005. Then CMSA will need an implementation schedule for a solution to minimize the need for a flooding contingency plan.

#### **O&M Personnel**

Virgil Sevilla received his Grade III Wastewater Operator Certificate this month, making the jump up to Operator 3 from OIT (Operator In Training). Now that he is certified, he has changed his shift assignment to cover the vacancy created when Operator Larry Johnson retired last month. To fill Virgil's position, we have hired Richard Jackson off our existing OIT list. He is in processing and should start on February 28. Chris Finton passed his certification test, giving CMSA another top California certificate grade (V) on our staff.

#### **O&M Monthly**

Maintenance worked with a contractor to dewater, desand and unplug Grit Tank #2 that had been overwhelmed during heavy wet weather at the beginning of the month.

O&M staff had more training from the contractors on the new co-generation system. We took another preparatory step towards startup of the co-gen unit by replacing the media in our "Iron Sponge" gas filters. This existing system removes sulfides from the gas before it is burned in the engine, improving emissions and reducing possible corrosion from sulfide deposits in the engine. The Instrumentation/Electrical (I/E) crew invested many more hours working with the engine generator contractor on the interface from the plant SCADA to the engine equipment. We are also witness testing the loading and temperature

controls. Some new punch list items have been generated.

The new DeChlor sampling station over our effluent vault #3 is ready for testing. The PLC has been programmed and installed and the HMI (Human Machine Interface) has been updated for the testing phase. Trials started on 3-water during the last weekend of the month and we expect to transition our final sample to this station in February.

A new lighting panel was installed upstairs in the Administration building. The current panels were full and the gate security contract electrical needs required a new power source. The new panel will give capacity for future needs and it is centrally located for easy of connection.

New computers were purchased this month to replace existing machines that will not support the software used at CMSA. The new machines were configured for the network and will be installed in February.

A replacement temperature transmitter was installed in the digester sludge heating loop. The old transmitter failed after 20 years of service. Another 20 year old electrical device, the starter for aeration blower #1 was replaced, along with some damaged wiring. These units are back in service.

The pump crew worked with PG&E at Belvedere pump stations #13 & #14, the power was cut for 4 hours for PG&E to work on their transformer. .

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## ENVIRONMENTAL SERVICES

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### NPDES Testing

The NPDES testing we performed in our laboratory for January were in compliance with our permit requirements. We collected our contract laboratory samples the second week in January, for metals, and are waiting for the sample results to determine permit compliance.

### Laboratory Performance Testing

We have received the first quality control samples of the year and will be running the analyses in February. Scheduling is always a challenge in order to perform quality control testing for all of the constituents we analyze in our effluent and influent samples.

In order to maintain certification to test wastewater, environmental laboratories must analyze performance evaluation samples of unknown concentrations. We have to find out how much of a specific compound the sample contains within narrow control limits. We are required to submit our chemical testing results to the EPA and ELAP.

If we achieve the high level of accuracy required we only have to analyze one set of samples for each regulator (EPA and ELAP) a year. If we do not meet the required confidence interval, we must submit a letter with the reason why we did not achieve the required results, what we have done to correct the problem, and re-analyze additional samples. Each classification of testing such as drinking water, wastewater, and hazardous waste requires certification testing and each field of testing requires analysis of a set of samples (including chemical, bacteriological, organic, inorganic, radiological, specialized research, in both liquid and solid matrices). For CMSA, we are certified for wastewater covering chemical analysis and bacteriological analysis. Commercial labs have sets of samples for each classification and each field of testing requiring almost a continuous certification process.

### Bioassay Test

We had 100% survival of the fish in our January bioassay. Every month we are required to perform a 96 hour bioassay that runs continuously from Monday to Friday. The purpose of this test is to assess the effects of our effluent on the survival of young rainbow trout. Our permit requires that we have an 11 sample median limit of 90 percent or greater and a 90<sup>th</sup> percent survival of at least 70 percent. This means no two samples over an 11 month period can fall below 70 percent survival to meet this limit.

### San Quentin Plastics

A letter was mailed to the Supervising Environmental Planner for the Department of Corrections and the Project Director for the consulting firm that developed the Draft EIR for the Condemned Inmate Complex. The purpose of the letter was to provide further comment on our requirements for San Quentin's new wastewater discharge permit. We stipulated that the Environmental Impact Report must contain language that reflects the requirements of the new San Quentin State Prison Wastewater Discharge Permit that does not allow trash to be discharged to the sanitary sewer. A detailed plan of how trash will be dealt with in the cells, food preparation, and other operations of the proposed Condemned Inmate Complex must also be included.

We received a letter from Sheila Petrakis, Associate Warden, informing us that the program to haul away their wet garbage to landfill has been implemented. We performed an inspection in January and confirmed that they were indeed hauling their garbage, and according to their staff it is working well. It appeared the garbage grinders were not being used based on their clean condition and there was less plastic present at the pump station.

### Member Agency Assistance

We have continued to run samples for our member agencies to assist them

during the rainy season. The high flows experienced in the collections system creates the possibility for sanitary sewer overflows. There is also increased groundwater present that people incorrectly assume might be a broken or overflowing sewage pipe. We run samples all year for Ross Valley Sanitary District, San Rafael Sanitary District, and Sanitary District 2 to assist them in determining whether water identified in their course of work and from citizen complaints is sewage or just groundwater.

#### **LGVSD Assistance**

We have completed the annual pollution prevention report for LGVSD which summarizes the activities during the year for their pollution prevention program. This program is required and reviewed by the Regional Water Quality Control Board. The annual report summarizes the activities that have been utilized by LGVSD to minimize pollutants discharged to the sanitary sewer. This includes public education and public outreach, sampling of discharges that have the potential to discharge pollutants of concern, visits to dental offices to inform them of proper ways to handle mercury and amalgam waste, and participation in Bay Area pollution prevention groups and studies.

#### **Environmental Services Vehicle**

In December we requested bids on the new vehicle for our Industrial Waste program. We ordered the vehicle from S&C Ford which had the lowest bid of \$21, 217.43 for a new 2005 Ford Explorer. The vehicle that is currently used for all of our industrial waste inspections, public education, and laboratory uses has provided 14 years of service.