

---

# CMSA Monthly Report

---

Central Marin Sanitation Agency

November 2003

---

## GENERAL

### CWEA Presentation

Our abstract for a presentation on the recently completed Dewatering Improvement Project has been accepted by the California Water Environment Association (CWEA). The presentation will be given at the annual CWEA conference in Sacramento on April 30, 2003. It will focus on the detailed evaluation process we used to procure the centrifuges, briefly discuss design and construction, and then touch upon the performance improvements of our dewatering facility and the resulting biosolids disposal savings.

The presentation will be given by lead operator Chris Finton who was heavily involved in all aspects of the project and supervised the construction phase, and Joel Faller who is a Principal Engineer with Kennedy/Jenks Consultants and was their project manager on the job.

### Operator In Training (OIT) Recruitment

Koff and Associates is in the process of recruiting for an entry level operator position to replace an existing vacancy. Advertisements were run in the local newspapers and on college campuses to attract local applicants. Applications were due by the end of

November. The most qualified applicants will be invited to participate in an oral board.

### Lead Operator

Recently staff conducted an in-house recruitment for a Lead Operator, replacing the vacancy left by the recent promotion of a Shift Supervisor to the Contract Administrator position. We are happy to announce the promotion of Chris Finton effective December 7, 2003. Mr. Finton started with CMSA as an Operator In Training six years ago and has continued to advance through the operations hierarchy.

### First Blending Event Of the Year

On Sunday evening, November 30, the influent flows exceeded 30 million gallons per day (MGD) resulting in the first blending event of the year. The hydraulic capacity for the secondary process is limited to 30 MGD and flows exceeding this amount receives primary treatment and are diverted around the secondary process, blended with secondary treated flows for disinfection, and then discharged. This event lasted one hour.

### San Rafael Year 2020 Growth Projections

We recently responded to an inquiry from the City of San Rafael's planning department concerning growth in the San Rafael portion of the CMSA service area to the year 2000. Do we have adequate capacity to

treat increased sewage from 10 thousand additional residents and some newly developed commercial and retail space? Based on the population increases we've witnessed in our service area over the past twenty years our response was . . . a definite maybe. Here's why: Based on the San Rafael projections we would be looking at about 1 MGD additional sewage if the projections for San Rafael held true for our entire service area. We are currently at 8 MGD and officially rated to treat 10 MGD. However, that would bring us above the 80 percent of design capacity for dry weather flow with 80 percent being the purported threshold where the regulators become interested in how we intend to treat further increases and when we plan on initiating the changes that would increase treatment capacity. There is also the assumption that growth will be consistent throughout the service area which may not be the case. If we were faced with new requirements from regulators related to our plans for growth our likely first initiative would include a request for re-rating of our facility. Having operated this facility for twenty years we appreciate many of the conservative assumptions that went into the design of the facilities - at least for dry weather.

Wet weather is another story and a subject of some interest at this time. As our member

agencies have steadily increased their capacity to control wet weather overflows in the collection system and significantly increased their pumping capacity with new interceptors and pump stations, we are now approaching our wet weather design limit (under favorable tide conditions) of 125 MGD. At some point the regulators may take an interest in residential and commercial development while they ascertain the balance between containing wet weather sewer overflows and successfully containing and treating those flows at the treatment plant.

#### **CMSA Web Site**

You can take an advanced look at it from outside the Agency at the following URL (no "www" just the following):

216.31.235.142:8080

It has not yet been released, but the day is imminent. We'll be training folks on how to maintain it in the coming weeks and hope to advertise its presence (officially) soon.

## **CAPITAL PROJECTS**

### **Centrifuge Procurement Contract**

The procurement contract with Centrisys is still open and we intend to bring it to the Commission for acceptance after completion of some remaining punch list items and the negotiation of an extended warranty. The performance bond, which has a term of one year, will be in force after acceptance.

The contract warranty is due to expire in the next month and staff is concerned about the number of system components, in particular bearings and controls, that have failed over the last year. Counsel has advised that we continue to withhold the final 10% contract payment until we finish the extended warranty discussions, accept the project, and Centrisys determines the cause of the equipment failures.

### **Outfall Inspections**

Parker Diving completed the inspection of the marine outfall in mid-October and reported that four of the risers need to be extended above the encroaching mudline. Maintenance staff constructed the riser extensions and provided them to Parker. Due to unfavorable tidal conditions and the recent wet weather events, Parker was unable to install the extensions until last week. The preventative maintenance is now complete and we will perform the

inspections at the about same time next year.

### **Cogeneration Project**

The Cogeneration Engine Replacement project Siloxane Removal Equipment pad has been constructed. We are awaiting results on some concrete testing to give the contractor the green light to load the retaining walls and continue with the construction of the drainage swails around the pad. Next they will be hauling in the various pieces of pre-purchased equipment, namely the siloxane removal filter towers, the sludge gas dryer, and heat exchanger and constructing the piping and valving between those pieces of equipment.

The contractor has been busy in the inside as well by preparing wall hangars for the various piping associated with the sludge gas, natural gas, and cooling water systems in both the engine and boiler rooms.. Unfortunately, there has been some delay in properly sizing the heat exchangers and so we are still waiting for the green light of design engineer approval of the engine supplier's proposed heat exchangers. There are also some delays due to submittals on the electrical control side. In addition, the supplier of the engine generator set, Stewart and Stevenson, notified us just a few days before expected delivery of the new Waukesha engine that it would be delayed until December 17<sup>th</sup>. There may be other delays with peripheral equipment (such as with the

heat exchangers) where they have not yet established revised delivery dates.

## BUSINESS SERVICES

### Audit - FY 02/03

The Business Services Department has worked with the accounting firm of Vavrinek, Trine, Day & Co. to complete the final fieldwork for the fiscal year 02-03 financial audit. A draft report will be sent to the Agency on December 2 with a final due on Friday December 5. The final audit report is tentatively scheduled to be sent to the homes of the CMSA Commissioners for their review and subsequent acceptance at the December 9, 2003 commission meeting.

### Policy Training

Staff will be completing training sessions on the new Security Policy and the newly adopted Travel Policy on December 2<sup>nd</sup> and December 4<sup>th</sup> for all employees. These policies will go into effect immediately after the training has been completed. The relative policy manuals will then be updated with these policies.

### Asset Management

The new CMMS system has been successfully installed and the staff primarily involved in this program have been trained on the system. Steve Egbert, our new Asset/Contracts Manager, and Kit Groves have been

working closely with the vendor, Maintenance Connection, to make sure the transition is completed as smoothly as possible. A new CMMS workgroup is being put together in the next few weeks to identify processes and goals to implement under the new system.

### Security

Staff is currently working with the San Rafael Police Department and Joe Garbarino of Marin Sanitary to create a policy for monitoring, identifying, and cleaning up any homeless encampments on Agency property. Kurt Obermeyer will be identifying options and procedures to be followed anytime an encampment is located. This procedure will be completed by December 31, 2003.

The new entrance gate has been installed at the front entrance driveway and will be ready for manual use by the end of the week. The management team has been working together on specific procedures to use regarding signage, gate closure, and lighting. Full implementation of the manual use of the gate is expected by January 1, 2004.

## MAINTENANCE

### Centrifuges Repairs

There are two remaining punch list items. The first was is an electronic controller that lost the memory capacity. It has been replaced but a similar malfunction occurred on the number 3 centrifuge and we are awaiting parts. The unit is still operational in the manual mode. The last punch list item is inspection and if necessary replacement of the main and scroll bearings in the #3 centrifuge. The bearings in the number 2 centrifuge were replaced and we are waiting for a new set of bearings (to replace our inventory) and the new controller before we inspect the number 3 centrifuge.

### Dechlorination Project

**Update** A pilot study was proposed by bay area Publicly Owned Treatment Works (POTW's) to the Regional Water Quality Control Board (RWQCB) to collect data related to chlorine residuals in the final effluent by utilizing continuous monitoring. The RWQCB supported the study to encourage a shift to continuous on-line monitoring for final effluent chlorine residuals. In return POTW's were anticipating some relief from the "zero chlorine residual" limit in our permits. During the study POTW's would be allowed a 99% compliance allowance for the zero chlorine residual limit. This would give some relief from the mandatory minimum

penalties (MMP) legislation that went into effect in January 2002, which requires a minimum \$3,000 fine for permit violations. Currently, the State Board has raised questions with the RWQCB that may halt the study.

However, our project still provides better process control for permit compliance for our "zero chlorine residual" limit, reduces sodium bisulfite usage (reducing dissolved oxygen demand in the receiving waters) and with some additional upgrades will allow staff the ability to remove any chlorine residual which was not initially removed due to equipment and/or control failures. This has occurred in the past, resulting in two \$3,000 fines. Currently, the Electrical and Instrumentation (E&I) staff are terminating equipment wiring to the new RTU control panel. When this is completed, maintenance staff will finish installing the remaining equipment. The E&I staff recently focused their attention on installing new security measures while waiting for the RTU panel.

#### **Sodium Hypochlorite Tank (Bleach Tank) Replacement**

One of the five hypochlorite tanks developed a leak last year and was budgeted for replacement. The new tank was installed in early October and staff has initiated an inspection program for the remaining four tanks. Two of the remaining four tanks have been inspected and no

abnormalities were discovered. During the first week of December, staff will inspect one of the two remaining tanks and later in the month inspect the remaining tank.

#### **Telemetry System Upgrade for Belvedere Pump Stations**

Kit Groves, our Instrumentation System Supervisor, will be involved in converting the alarm system for the Belvedere Pump stations from telephone lines to radio telemetry. The aging telephone system has resulted in increased maintenance cost and a greater incidence of down time (the inability of staff to monitor the stations and call out repair staff during equipment failures). If a prolonged equipment failure were to occur and staff failed to receive notification due to a telemetry system malfunction could result in sanitary system overflow (SSO).

To minimize an SSO during telemetry system failure staff conducts after hour pump station inspections incurring additional operating costs. Subsequently, this upgrade will save Belvedere Operating and Maintenance costs and minimize CMSA staff costs when responding to false alarms or checking the stations when the system is down. Knowing what the alarm condition allows CMSA to determine if an immediate response is needed or can wait until the following work day.

#### **Polymer Optimization Test**

Staff has been investigating alternative types of polymers for the dewatering process (new centrifuges). Polymer is an essential chemical used to coagulate digester feed sludge before entering the centrifuges. Now that we have new centrifuges it is prudent to see if any of the new polymer products are more effective at dewatering the sludge, which will result in reduced biosolids hauling and disposal costs. Last month Operations tested two different emulsion polymers. Their performance was the same as the manic polymer (current product) but at a higher cost. We now have two more emulsion products that we will be testing.

#### **Ferric Chloride Addition to Enhance Process**

**Performance** Staff reported the addition of ferric chloride last month as aid to enhance the performance of the primary clarifiers. This chemical addition enhances settling in the primaries and helps the dewatering process. According to operator observations there is a decrease in polymer usage when centrifuging.

Ferric chloride addition has reduced sulfide levels in the digester gas, used to fuel the engine generator, from 2,000 parts per million (ppm) to 125 ppm. This is well below engine manufacturer requirements and eliminates

## **OPERATIONS**

the need to recharge the existing methane gas scrubbers (removes sulfides from the methane gas), at an annual cost of \$10,000.

Staff has stopped the addition of sodium hypochlorite (bleach) to the primaries which was used to help reduce odors at the effluent launders (were the primary effluent enters the secondary process). The ferric chloride helps reduce odors throughout the entire primary process, not just the discharge end of the primaries.

The additional cost of the ferric chloride is being offset by the elimination of bleach in the primaries and eliminating the need to recharge the methane gas scrubbers. Staff will continue to optimize ferric chloride addition and monitor other beneficial impacts of ferric chloride addition.

## LAB/ INDUSTRIAL WASTE

### Bioassay

We began using the pH adjustment system in the bioassay for the first time during the November testing. Our survival rate was 100% with the toxic form of ammonia at 0.12mg/L, with the toxicity level for un-ionized ammonia beginning at 0.16mg/L. The system required additional adjustments because of the high alkalinity of our effluent

which will result in even lower levels of ammonia toxicity in future bioassay analyses.

### Lab Testing

We received the final results of our bacteriological performance evaluation testing and we passed all concentrations for coliform testing. We received notice last month that we had passed the first half of the bacteriological performance study. In order to report laboratory analysis for NPDES and EPA compliance we must maintain Environmental Laboratory Certification through a division of State Health. Part of the certification process is analyzing samples with unknown concentrations of the compounds we test for in our laboratory. We must be able to get very close to the actual amount of compound in the unknown sample and they let us know the results a few weeks later. If we "pass" or get very close to the true value we do not need to repeat the testing for a year. If we "fail" we must write a letter explaining why we failed and repeat the analysis. If we fail again we will be put on probation or lose our certification.

### NPDES Testing

Our NPDES testing on our effluent showed no violations last month. On our last day of biosolids land application we exceeded our volatile solids reduction requirement. The federal regulations (40 CFR Part 503) requires a minimum 38% volatile solids reduction and our biosolids were 37% for that day. The average over the

required reporting period for September and October was 53%. We informed our EPA Coordinator for biosolids and she informed us that there is no specified time period in the regulations for that requirement and with our average far exceeding the required limit and only a one day exceedance that this should be noted in our annual report but it is not a regulatory issue. The violation occurred because of increased pumping from the primary clarifiers to the digester due to a valve repair in a secondary clarifier. The increased pumping reduced the detention time of the solids in the digester and therefore reduced volatile solids destruction.

### Remillard Pond

Due to the low levels of rain during October and November we were asked by the City of Larkspur to add water to Remillard Pond. The level had fallen below the gauge used for monitoring the pond level and we added water the week of November 17<sup>th</sup>. The current wet weather should eliminate the need for additional water till next summer.

### Groundwater Permit

We denied a groundwater permit for an excavation site for Boyett Petroleum that was referred to CMSA by the Town of Corte Madera. We requested laboratory analysis for petroleum products from a sample that is representative of the water that would be

discharged to CMSA. The water was twice the allowable discharge limits so the permit to discharge was denied. The contractor intends to set up a containment tank and then treat the water to eliminate the petroleum contamination. The contractor was informed that the water will be accepted from the treatment unit if analysis is performed confirming the treated water meets our discharge limits.