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**A NACWA Platinum 8 Peak Performance Agency**

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**FOG/FOOD-TO-ENERGY IN START-UP MODE**

GSE Construction completed installation of the new membrane cover on Digester No. 2 in late September, and operations staff began the digester start-up process in early October. Start-up consisted of filling the empty digester with reclaimed water and heating it to 98F, transferring a percentage of sludge from the in-service digester, and slowly introducing feed sources. Primary sludge was incrementally increased by 3% daily until 50% of the plant's primary sludge was being fed to each digester. Thickened Waste Activated Sludge (TWAS), a second food source, was introduced once the primary sludge percentage (of daily pumping) reached 36%. The sludge pumping of primary and thickened sludge was staggered so the digester could become acclimated and able to break down the materials.



*Digesters No. 1 and 2 with membrane covers in operation.*

On November 11, the primary sludge daily pumping of primary and TWAS was split evenly between both digesters. Laboratory sampling results continue to indicate that both digesters have been breaking down solids efficiently and biogas production is increasing in Digester No. 2 as expected.

The new gas membrane covers will store approximately 62% more biogas than the original steel floating covers. 💧

**FOG ONLINE, FOOD WASTE COMING SOON**

On November 12, 60+ day test period commenced with the first Fats, Oils, and Grease (FOG) delivery at the new FOG/Food-to-Energy (F2E) facility, and the Agency has been receiving a 5,000 gallon FOG load each day since. Operations staff is gaining valuable hands-on experience on the controls and equipment, and are refining standard operating procedures and monitoring the digestion process. One benefit being measured and tracked is the increased production of biogas in the digesters. This biogas will offset the use of natural gas in the Agency energy production system, saving the Agency and our customers this expense.



*Marin Sanitary Service Food-to-Energy Equipment.*

Marin Sanitary Service's F2E public education and collection program is moving forward, and their food waste equipment has been installed and will be tested soon. MSS has identified over 500 food waste generators in their service area, and over 150 more have expressed interest in participating in the program. CMSA will begin accepting food waste in early 2014. 💧

## OPERATIONS & MAINTENANCE

### SODIUM BISULFITE TANK REPLACED



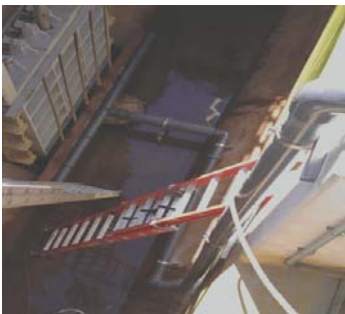
*New tank being carefully positioned.*

Operations and Maintenance staff took on the task of replacing the first of two Sodium Bisulfite Solution (SBS) storage tanks in our bulk chemical storage building.

The new tank was slightly taller than the existing tank which required extra care as the new tank had to be brought into the room on its side to avoid electrical conduit and fire protection piping near the ceiling. 💧

### DECHLORINATION OPTIMIZATION LOOKING BRIGHT

Disinfected wastewater must be dechlorinated prior to its discharge into San Francisco Bay. A study was initiated this year to evaluate methods to optimize the dechlorination system,



*Pilot diffuser during installation....*

building on a preliminary study that was conducted in 2002. This year's study was designed to follow the sampling protocol of the 2002 study, but this time leveraging upgraded chlorine/dechlorination monitoring and analyzing equipment, SCADA trending capabilities, and new and improved process equipment. Testing was conducted over several days with varying flow conditions, and the unfavorable outcome of the 2002 study was confirmed: the dechlorination solution migrated upstream of the injection point and caused interference with the disinfection process.

In September, staff fabricated and installed a pilot diffuser in the outfall sump which will improve process chemical distribution by mixing it directly with plant effluent prior to discharge into the outfall. The initial results of this work look promising, and staff will report the final results of this pilot project in the next edition of this newsletter. 💧



*...and ready for testing.*

## AGENCY PROJECTS

### PRIMARY CLARIFIER NO.2 UPGRADES COMPLETED

CMSA has seven primary clarifiers that are part of the initial treatment process. Periodically, contractors are hired to rehabilitate each clarifier to remove portions of the degraded epoxy coating and replace it with new material, along with installing new mechanical equipment.

This work included removal of failing coatings by sandblasting, recoating the steel with epoxy paint, and replacing equipment. There have been improvements in materials design that allowed CMSA to replace several metal parts with high-strength plastic ones that will not corrode and have sufficient strength to properly operate in the clarifier.

In early November both project phases were completed and the clarifier was returned to service. 💧



*Launders after sandblasting (left) and Primary Clarifier No. 2 with new coating*



### BACC KEEPS COSTS DOWN

The BACC (Bay Area Chemical Consortium) is an informal cooperative of more than 30 public water and wastewater agencies that was formed in 2009. Annually, the BACC requests bids for several chemicals used in treatment processes with the intent of receiving optimum pricing by issuing contracts for large quantities of each chemical. The cost to participate is currently \$250 per chemical. This equates to a significant savings in CMSA staff time and advertising costs, as compared to Agency staff administering the chemical procurement contracts. 💧

### BENEFICIAL REUSE POLICY IN PLACE

One of the objectives of the Agency's Strategic Business Plan is developing a strategy for the beneficial reuse of Agency products. The Agency's strategic planning committee developed a policy that incorporates identifying resources that have the potential to generate value for the Agency and its customers, identify ways to improve environmental quality, and contribute to the local economy. On October 8, 2013, CMSA's Board adopted a "Beneficial Use of Agency Products" policy stating our commitment to these core principals. 💧



## AND INITIATIVES

### NEW ENERGY-EFFICIENT SLUDGE THICKENING TECHNOLOGY

CMSA awarded a design contract to HDR Engineering, Inc. in September 2013 to prepare construction documents to replace our

sludge thickening and supporting equipment.

The secondary biological treatment process uses microorganisms to consume organic matter in the wastewater. These microorganisms, called activated sludge, are continuously removed from

the wastewater by settling in a large clarifier. The settled sludge is currently thickened in dissolved air floatation (DAF) tanks before going to the digesters for further treatment.

The DAF thickeners have reached the end of their useful life, consume substantial amounts of power, and are a source of odors. The new thickening technology will be enclosed to contain odors and will be significantly more energy efficient. The design contract is scheduled to be completed in July 2014. 💧



DAF thickeners to be replaced.

### EPA ENERGY AUDIT GRANTED

CMSA has applied for a free energy audit through the Department of Energy's Industrial Assessment Center for the last several years. Last month, US EPA-Region 9 elected the Agency for an audit this year, in conjunction with San Francisco State University.

Six student engineers and two professors spent a day at the Agency, and gathered data from specific equipment. Even with the energy-efficiency improvements CMSA has made over the years, the group was able to find six to eight possible opportunities for additional energy savings. A report will be furnished to CMSA in early 2014. In six months to a year, the Industrial Assessment Center will contact CMSA to see if we have implemented any of the recommendations, and if so, what the outcome has been. 💧



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### AGENCY'S BASELINE FOR GREENHOUSE GAS EMISSIONS

CMSA hired CH2MHill to conduct a greenhouse gas (GHG) emissions study to determine the 2012 GHG baseline emissions from Agency operations. For calendar year 2012, CMSA's emissions were approximately 4,800 metric tons (carbon dioxide equivalents) from stationary and mobile combustion, treatment processes emissions, purchasing electricity from Marin Clean Energy, and hauling biosolids to beneficial reuse sites. Potential short- and long-term GHG reduction measures were identified, and staff will evaluate viable and realistic activities in the future. One current Agency program that will reduce regional GHG emissions is the Central Marin Food-to-Energy program. 💧

## ENVIRONMENTAL SERVICES

### LABORATORY TESTING

Wastewater effluent testing results were in compliance with NPDES permit requirements, with 100% survival in all of our recent bioassays.

Staff recently submitted performance sample analyses results to the CA Department of Public Health and all tested compounds were within the tight control limits.

Due to the excellent compliance, we hope to win our 9<sup>th</sup> NACWA peak performance award for no permit violations during calendar year 2013.

### PUBLIC OUTREACH ACTIVITIES

Public education staff set up and attended the outreach booth at several events including farmer's markets during Pollution Prevention Week and the Marin Senior Fair.

Plant tours of were provided to Marin Municipal Water District staff, the University of San Francisco, Terra Linda High School students, and two families. We have also been working with students at Terra Linda High as part of the Marin School of Environmental Leadership Program.

Our pollution prevention juggler show, *Go With The Flow*, will have been performed to over 5,700 students in Marin County Schools.

### CWEA AWARDS

CMSA received a total of seven awards from the Redwood Empire section of the California Environment Water Association for 2013. Congratulations to all!



#### Individual Awards

(pictured left to right)

- |                        |  |
|------------------------|--|
| <b>Robert Cole</b>     | Public Education and Outreach Person of the Year                     |
| <b>Ben Northcroft</b>  | Murray McKinnie Award<br>(Operator in Training)                      |
| <b>Mary Jo Ramey</b>   | Pretreatment, Pollution Prevention and Stormwater Person of the Year |
| <b>Abel Villarreal</b> | Maintenance Person of the Year                                       |

#### Program Awards

- Public Education Program of the Year  
Wastewater Treatment Agencies of Marin County
- Gimmick and Gadget of the Year  
Maintenance Supply and Tool Vending Machines
- Newsletter of the Year

## FINANCE

As of October 31, 2013 the Agency received 37% of budgeted operating revenue and incurred 35% of total budgeted operating expenses. The Capital Improvement Program was at 60% of budget and included \$1.26 million in encumbered funds for outstanding purchases and services. The \$70.4 million Revenue Bond Program budget was at 99.8% and included \$467,000 in contractual obligations associated with the Digester Improvements & FOG Facility, Aeration Blower Replacement, Concrete Corrosion and other minor capital projects. The remaining \$122,500 Revenue Bond budget is for funded activities through FY 2014.

### FY 2012-13 FINANCIAL REPORTS

**State Controller's Office (SCO) 2012-13 Special Districts Financial Transaction (FTR) and 2012 Government Compensation Reports (GCR):** These California mandated reports were submitted to the SCO in October.

**Audited Financial Statements:** At the November 2013 Board Meeting, the CMSA Board accepted the Agency's audited financial statements with the Independent Auditor's Report for FY 2012-13.

**Comprehensive (CAFR) and Popular (PAFR) Annual Financial Reports:** Both reports are submitted to the Government Finance Officers Association (GFOA) for evaluation by an independent panel of finance officers who determine whether the content in the reports meets GFOA guidelines for quality public sector reporting. CMSA is proud to have received the Certificate of Achievement for Excellence in Financial Reporting from the GFOA for the past eleven years and equally proud to have received the Award for Outstanding Achievement in Popular Annual Financial Reporting for the last three years. Both the CAFR and PAFR are available online at [www.cmsa.us](http://www.cmsa.us).

### GASB 45 ACTUARIAL VALUATION REPORT

The Agency actuary, North Bay Pensions, recently completed a valuation report of the Agency's post-employment (retiree) health benefit liability. The Present Value of projected benefits as of July 1, 2013, is \$4,188,730. This is the amount that the Agency would need to set aside to meet its future retiree health benefit obligations.

As of June 30, 2013, the Agency had accumulated \$1,255,329 in the California Employers' Retirement Benefit Trust (CERBT) account. The June 30, 2013 valuation report can be found at [www.cmsa.us](http://www.cmsa.us).

If the Agency had not decided to prefund its retiree health obligations in 2010, the Present Value would be \$7,656,558.

### CARPOOL/ALTERNATIVE COMMUTE INCENTIVE PROGRAM

Since 2008, CMSA has provided a Carpool/Alternative Commute Incentive Program to encourage employees to carpool or use greener commute options such as biking, ferry, or bus. It's been a successful program with about 50% of staff participating, and the CMSA Board recently approved some revisions:

- Elimination of the Agency shuttle service to and from public transit hubs. (The Agency plans to review this option should enough employees take SMART to work.)
- Defining the conditions when Agency vehicle carpools are exempt from the minimum rider requirement.
- Specification of program participant accountability and consequences of not adhering to procedures. 💧

## RECYCLED WATER OPTIONS TO BE EXPLORED

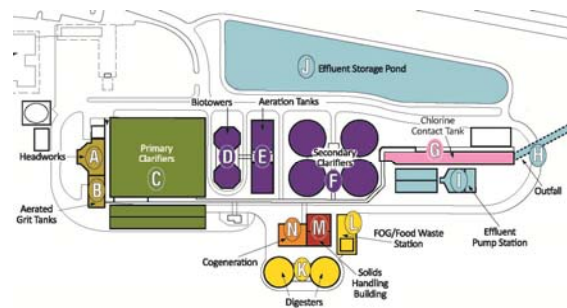
Annually, CMSA recycles about 10% of our treated wastewater, and is used primarily for landscape irrigation, cogeneration system cooling, transporting chemical solutions, and washing down equipment and tanks. Historically, the only off-site use of the reclaimed water has been delivering it to the Remillard Pond in Larkspur to maintain the pond level for an endangered turtle. Due to salt water infiltration into the sewer collection system, the water entering the plant is too salty for most reclaimed water uses.

Recently, Marin Municipal Water District (MMWD) and CMSA have been actively discussing the opportunities of using CMSA's reclaimed water to offset some of MMWD's potable water demand. These discussions have led to each agency's Board approving a joint recycled water feasibility study and appropriating funding. In the near future, staff from both agencies are planning to develop a scope and schedule for the study, apply for a matching grant from the State Water Resources Control Board, and select a consultant to conduct the study. 💧



## WEBSITE'S LATEST UPDATES

The latest upgrade to the CMSA website includes a new Virtual Tour and a reorganized and reformatted Vendor/Contractor section. The Virtual Tour now features the overhead map of CMSA that is color-coded by the type of treatment process and provides an overview with a photo for



each step. The Vendor/Contractor section is now called *Contracting with CMSA*, and has administrative, capital, and chemical contracts listed in separate sections in an easy-to-read grid layout.

Check out the site at [www.cmsa.us](http://www.cmsa.us). 💧