



Central Marin Sanitation Agency

COMMISSION REGULAR MEETING AGENDA

Tuesday, February 13, 2018

at the Agency Office

7:00 p.m.

Members of the public may directly address the Board on any item appearing on the Agenda. They may address the Board when the item is called by the Board Chair and he/she indicates it is the time for the public to speak to the agenda item. Audio and video recordings will be made of this meeting and will be posted to the Agency website.

1. 7:00 p.m.: Call Meeting to Order/Pledge of Allegiance

2. Roll Call

3. Open Period for Public Participation

Open time for public expression, up to two minutes per speaker, on items within CMSA's jurisdiction and not on the Board of Commissioners' agenda. The Board will not discuss or take action during open time.

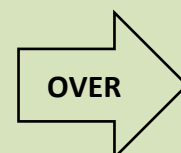
4. January 30, 2018 Special Board Meeting

Report on any action taken in Closed Session.

5. Consent Calendar

Matters listed under this item are considered routine and will be enacted by one motion. The consent calendar may include resolutions; therefore, the motion, second, and vote will also be applicable to the resolution and recorded accordingly. There will be no separate discussion of these items unless requested by a member of the Board or the public prior to the time the Board votes on the motion to adopt.

- a) Minutes—Regular Board Meeting—January 9, 2018
- b) Minutes—Special Board Meeting—January 30, 2018
- c) Treasurer's Report—Operating Account—January 2018
- d) Schedule of Investments—January 2018
- e) NPDES, Process, and Maintenance Report—January 2018
- f) Performance Metric Report—January 2018
- g) Revised Administrative Policies and Procedures



6. **2018 National Pollutant Discharge Elimination System Permit Presentation**
Recommendation: Informational; provide direction to the General Manager, as appropriate.
7. **Proposed 5-Year Revenue Plan**
Recommendation: Discuss the proposed 5-year revenue plan, and provide direction to staff and the Finance Committee.
8. **Administrative Policy #68 - Employee Compensation and Benefit Approval Process**
Recommendation: Approve Administrative Policy #68 - Employee Compensation and Benefit Approval Process, and provide direction to the General Manager, as appropriate.
9. **San Francisco Bay Nutrient Watershed Permit - Status Report**
Recommendation: Approve the Agency participating through BACWA on the second San Francisco Bay Nutrient Watershed Permit.
10. **North Bay Watershed Association (NBWA) Report***
11. **Oral Reports by Commissioners/General Manager***
12. **Next Scheduled Meeting**
Tuesday, March 13, 2018 at 7:00 p.m. at the Agency office.

*Information not furnished with Agenda

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Central Marin Sanitation Agency at 415-459-1455. For auxiliary aids or services or other reasonable accommodations to be provided by the Agency at or before the meeting, please notify the Agency at least 3 business days in advance of the meeting date (meeting is the second Tuesday of each month). If the Agency does not receive timely notification of your reasonable request, the Agency may not be able to make the necessary arrangements by the time of the meeting.



Central Marin Sanitation Agency

COMMISSION REGULAR MEETING MINUTES
Tuesday, January 9, 2018
at the Agency Office

Note: The minutes are an official record of the Board meeting.
 There are also official audio and video recordings available on the Agency's website at www.cmsa.us.
 The time stamps on these minutes refer to the items' start times on the video recording of the meeting.
 Please contact CMSA at 415-459-1455 for information about receiving a copy of these records.

- 1. Call Meeting to Order/Pledge of Allegiance** 00:00:00
 Chair Furst called the meeting to order at 7:00 p.m. A quorum was present.
- 2. Roll Call** 00:00:35
 Present: Chair Diane Furst; Vice-Chair Thomas Gaffney; Commissioners Maribeth Bushey, Michael Boorstein, and Dan Hillmer; Alternate Commissioner Dean DiGiovanni (for Al Boro).
 Absent: Secretary Al Boro
 Staff present: Jason Dow, General Manager; Kate Brouillet, Recording Secretary
 Public present: Felicia Newhouse, RVSD
- 3. Open Period for Public Participation** 00:00:55
 There were no comments from the public.
- 4. Consent Calendar** 00:01:04

 - a) Minutes—Special Board Meeting—December 13, 2017
 - b) Treasurer's Report—Operating Account—December 2017
 - c) Schedule of Investments—December 2017
 - d) NPDES, Process, and Maintenance Report—December 2017
 - e) Performance Metric Report—December 2017
 - f) FY 2018 Budget Status—Second Quarter Report
 - g) FY 2018 Asset Management Program—Second Quarter Report
 - h) Resolutions of Appreciation for Byron Jones, Steve Schoenstein, and Ray Tiongson
 - i) Revised Health and Safety Program Agreement

Comments from the Public:

There were no comments from the public.

Chair Furst asked for a motion on the Consent Calendar. There was no discussion by the Board.

ACTION: Commissioner Hillmer moved to approve the Consent Calendar items; second, Commissioner Bushey.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

Nos: NONE

Abstentions: NONE

5. 2017 Performance Metric Report 00:01:35

GM Dow stated that staff prepares monthly and annual performance metric reports for the Agency's core business and other provided services, and the annual report is presented in January. He referred to his staff memo and stated that these reports present performance metrics with their definition, measurement, and goals and target ranges in the areas of treatment and process, employee, environmental and regulatory compliance, and public outreach. He stated that the Agency has been producing these reports for the last eight or nine years, and the metrics in the four charts are adjusted periodically. GM Dow then briefly reviewed the 2017 metric report, and stated he could answer any questions.

Chair Furst stated that the metrics were impressive. The Board had a few questions regarding the volume of water treated and preventative and corrective maintenance. GM Dow answered the Board's questions.

Comments from the Public:

There were no comments from the public.

ACTION: Commissioner Bushey moved to accept the 2017 Performance Metric Report; second, Commissioner Gaffney.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

Nos: NONE

Abstentions: NONE

6. Employee Compensation and Benefit Approval Process 00:11:22

GM Dow stated that late last year, the Board concluded labor relations negotiations with SEIU Local 1021 that resulted in a Board proposal being accepted by the SEIU membership and a Letter of Understanding (LoU) to the Agency's Collective Bargaining Agreement being approved by the Board. He stated that during a review of the LoU agenda item with Chair Furst, she asked if the Board had ever considered a two-step review and approval process for employee compensation and benefit

adjustments, proposal review at one meeting and approval at the second meeting, similar to a practice used by the Town of Corte Madera. He stated that a two-step process has not been a practice of the Agency, and that he would include it on an upcoming Finance Committee meeting agenda. He stated that the Finance Committee discussed the idea at their November meeting, concluded it would be a good practice for the Agency, and is recommending the Board consider adopting it. He stated that if the Board concurs, staff will propose revisions to an existing policy or create a new policy for consideration at the February Board meeting. He stated staff needs direction on if the two-step process would be applicable for any job classification compensation and benefit adjustment, or limited to only those associated with negotiated labor relations items.

Chair Furst stated that the two-step process was implemented at the Town of Corte Madera to increase transparency and allow for more public comment because of criticism received on a multi-year salary adjustment item being approved through the consent calendar of the Town Council's meeting agenda. She stated that significant adjustments in CMSA's compensation and benefits would be appropriate for the two-step process, and less impactful, housekeeping type matters could be discussed and acted on in one meeting.

The Board discussed the proposed two-step process and concurred that the Agency should proceed with development of an employee compensation and benefit adjustment review policy that includes a two-step process, with an option for the General Manager and Board Chair to allow a one-step process for minor and housekeeping type matters.

Comments from the Public:

There were no comments from the public.

DIRECTION: Staff to develop a two-step process policy as outlined above for consideration of approval the February meeting.

7. Solar Power Generation Report – 2017 Facilities Master Plan

00:22:40

GM Dow stated that as part of the 2017 Facilities Master Plan project, Carollo Engineers was tasked to review and perform a fatal flaw analysis of the 2002 Solar Power Feasibility Study that was produced for the Agency by Brown & Caldwell. He stated that Carollo has submitted the final draft Solar Power Generation Technical Memorandum (TM).

GM Dow stated that the TM identifies viable and realistic locations for solar photovoltaic (PV) arrays on CMSA's property, sizes each array and determines its power output, estimates the procurement and installation cost for each, and determines the payback for CMSA and privately owned solar PV alternatives. GM Dow stated that, in summary, it is not cost effective for CMSA to construct solar facilities, and may be cost effective if a private party constructed solar PV arrays and sold their power to CMSA.

GM Dow reviewed the staff memo and the attachments, and described the areas that met Carollo's criteria for the installation of solar PV arrays. He stated that staff has reviewed the TM and provided comments to Carollo Engineers that will be incorporated into the final TM.

The Board had a brief discussion, including the potential power generation of the solar panels, potential sales price per kilowatt hour, the interconnection agreement with PG&E, solar incentives, capital outlays and cost-benefits, and solar power installations at other agencies.

Comments from the Public:

There were no comments from the public.

This item was informational and no action was taken by the Board.

8. Preliminary 5-Year Revenue Plan

00:37:35

GM Dow stated that over the past few years, staff has highlighted that at the end of the current 5-year revenue program, FY 18, if revenues are not increased the Agency will begin to utilize operating and capital reserves with both being exhausted in the FY 21 to FY 22 timeframe.

GM Dow stated that the Board's Finance Committee began the revenue plan development work in October 2017 with the goal of presenting a new multi-year revenue plan to the Board by March 2018 for consideration of adoption. He stated that since October, the Board's Finance Committee, comprised of Commissioners Tom Gaffney, Michael Boorstein, and Dean DiGiovanni, have met three times to work with staff to select guiding principles, provide direction on integrating future operating and capital expenses into the plan model, review plan funding alternatives, and select an alternative to present to the Board for discussion and direction.

GM Dow referred to the staff memo and described the preliminary plan, including the guiding principles and the four funding scenarios the Finance Committee has developed for consideration. He stated that the preferred scenario is Alternative #2, as it funds a portion of the Capital Improvement Plan (CIP) with the lowest EDU rate increase.

The Board discussed the preliminary revenue plan model, and asked various questions regarding the funding alternatives, indebtedness, member agency EDU rate increases, equipment life-cycles, and capital project timelines. GM Dow answered the Board's questions.

Vice-Chair Gaffney stated that the goal is to fund the entire 10-year plan, and that guiding principle #6 states that capital projects should be funded to the greatest extent possible through pay-as-you go and the rest with debt issuance. He stated that the CIP plan is aggressive, and some projects may be deferred. He stated that guiding principle #7 should ensure that the capital reserve balance is maintained at approximately the average annual budget of the 10-year CIP.

Commissioner DiGiovanni stated that he thinks that the preliminary plan is solid and represents a significant amount of thorough work by the Finance Committee and staff, the CIP projects are well vetted and prioritized, and includes an easily-supportable EDU rate increase by the member agencies.

The Board asked staff to evaluate methods to allow the EDU rate increases to remain at a similar level for each year of the plan, and to consider alternatives for 25-year and 20-year debt issuance terms.

GM Dow stated that he will schedule another Finance Committee meeting to incorporate the Board's comments, and prepare a revised plan for the February meeting.

Comments from the Public:

There were no comments from the public.

This item was informational and no action was taken by the Board.

DIRECTION: Staff to evaluate and consider the options as stated above.

9. Schedule a Special Meeting to Discuss CMSA's Renewed NPDES Permit 00:57:47

GM Dow stated that the Final Order for CMSA's NPDES Permit will be presented tomorrow morning at the Regional Water Board, and it is anticipated the permit will be adopted. He stated that RVSD and/or San Rafael Sanitation District may appeal the permit to the State Water Board, and, if appealed, the CMSA Board should meet and discuss potential appeal options in closed session prior to the appeal deadline of 30 days after the permit adoption. He stated that the regulatory consultant, Monica Oakley, and attorney Ken Alm would be asked to attend the closed session.

The Board had a brief discussion.

Comments from the Public:

There were no comments from the public.

DIRECTION: The Board set a Special Meeting for January 29, 30, or 31, 2018, at 7:00 p.m. at the Agency office, depending upon the availability of the attorney and consultant. GM Dow to confirm the date with the Board.

10. North Bay Watershed Association (NBWA) Report 01:09:44

Chair Furst stated she attended the January 5, 2018 NBWA Board meeting, and that there was a very informative presentation entitled "From Bonn to the North Bay" by Ellie Cohen of Point Blue Conservation Science. She stated that Ms. Cohen provided a summary of her experiences in Bonn Germany at the recent international conference of climate scientists and policy makers hosted this year by the country of Fiji and held in Germany. Chair Furst stated that Ms. Cohen's book, "The Carbon-Free City Handbook," would be a good resource and is available on Ms. Cohen's website.

Chair Furst stated that the second presentation was by Charles Schembre of the Napa County Resource Conservation District, who reviewed the District's current work to better understand ways to improve soil conditions in vineyards, orchards and grazing lands while also making it possible to store and sequester more carbon emissions.

11. Oral Reports by Commissioners/General Manager

01:16:07

GM Dow referred to his handout and reported:

- Koff & Associates will perform all future Agency recruitments, and is currently advertising for the E/I Technician position.

Commissioner Boorstein stated the Marin Coalition will meet tomorrow at noon at McGinnis Park on the topic of transportation in Marin, and Dianne Steinhauser, Executive Director of the Transportation Authority of Marin, will be speaking.

11. Next Scheduled Meeting

Special Meeting to be held on January 29, 30, or 31, 2018 at 7:00 p.m. at the Agency office; day to be confirmed.

Next Regular Meeting is scheduled for Tuesday, February 13, 2018 at 7:00 p.m. at the Agency office.

Chair Furst adjourned the meeting at 8:20 p.m.

Respectfully submitted,

Kate Brouillet, Recording Secretary

Thomas Gaffney, Vice Chair



Central Marin Sanitation Agency

**COMMISSION SPECIAL MEETING MINUTES
Tuesday, January 30, 2018
at the Agency Office**

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1. Call Meeting to Order/Pledge of Allegiance

Chair Furst called the meeting to order at 7:00 p.m. A quorum was present.

2. Roll Call

Present: Chair Diane Furst; Vice-Chair Thomas Gaffney; Commissioners Michael Boorstein and Dan Hillmer; and Alternate Commissioner Dean DiGiovanni (for Al Boro).

Absent: Secretary Al Boro and Commissioner Maribeth Bushey

Staff present: Jason Dow, General Manager; Monica Oakley, Regulatory Consultant; Kent Alm, Attorney, Meyers/Nave

Public present: None

Commissioner DiGiovanni stated that SRSD has appointed him as a district representative to the CMSA Board, and has appointed Al Boro as an alternate.

GM Dow stated that he will contact SRSD to request official notification for the appointment, and update the Agency website and other records.

3. Open Period for Public Participation

There were no comments from the public.

4. Closed Session was convened at 7:02 p.m.

CONFERENCE WITH LEGAL COUNSEL – PENDING LITIGATION

Deciding whether or not to initiate litigation pursuant to California Government Code Section 54956.9(d)(4): One potential case.

5. Open Session was reconvened at 8:20 p.m.

Chair Furst reported that no action was taken in closed session, and direction was given to staff.

6. Chair Furst adjourned the meeting at 8:21 p.m.

Respectfully Submitted,

Jason Dow, General Manager

Tom Gaffney, Vice-Chair

DRAFT

**Central Marin Sanitation Agency
Treasurer's Report - Operating Account
For the Month of January 2018**

I. Accounts Summary: Bank & Investment Accounts

Summary of Bank & Money Market Accounts

Westamerica Bank - Account Activity shown below	\$ 450,087.89
Local Agency Investment Fund (LAIF) - Refer to Schedule of Investments	16,829,171.26
California Asset Management Program (CAMP) - Refer to Schedule of Investments	362,752.17
Total Bank & Investment Accounts: Ending Balance on January 31, 2018	<u>\$ 17,642,011.32</u>

II. Account Activity for Westamerica Bank

Beginning Balance on January 1, 2018 169,343.44


Cash Receipts (Deposits into Westamerica):

Transfers from LAIF	600,000.00
JPA Service Charges (FY18 Q3: SD#1, SD#2, SRSD)	2,723,291.25
Debt Service Charges (FY17 Bi-annual payment: SD#1, SD#2, SRSD)	968,134.52
Capacity Charges: SD#1 - 3 Residential Connections	17,798.55
Revenue from Haulers & RVs	5,479.69
Revenue from Organic Waste Programs	11,564.18
Health & Safety Program Revenue (NSD: FY18 3Q Salary/Benefits)	12,082.65
SQSP Wastewater Services Contract (FY18: November)	89,908.83
SQ Village Operations & Maintenance Contract (FY18: November)	2,579.86
Misc Revenue: FEMA Reimbursement Hillside Slope Stabilization (Disaster Recovery Fund)	55,874.00
COBRA Health Benefit Payments from separated employees/retirees	235.65
Total Cash Receipts	<u>\$ 4,487,149.18</u>

Cash Disbursements (Withdrawals from WestAmerica):

January 2018 Operating account disbursements register (see attached)	\$821,009.78
Regular Payroll paid 01/05/18	137,570.69
Regular Payroll paid 01/12/18	135,077.23
Transfers to EFTPS Federal Payroll Taxes (01/05, 01/10, 01/12, 01/24)	82,130.14
Merit Pay (5), Final Separation Pay (1), EPMC Settlement (1)	30,512.09
Transfers to LAIF (JPA Payments)	3,000,000.00
Bank Fee	104.80
Total Cash Disbursements	<u>\$4,206,404.73</u>
Ending Balance on January 31, 2018	<u>\$ 450,087.89</u>

Prepared by: 
Kenneth Spray, Administrative Services Manager

Reviewed by: 
Jason Dow, General Manager

Central Marin Sanitation Agency
Operating Account Disbursements Register
For the Month of January 2018

Check Number	Date	Vendor/Payee	Amount	Description
16224				Last check # from prior month's register
16225	01/03/18	Phillip Frye	212.97	Reimbursement for retiree health benefits by check
16226	01/03/18	James L. Johnson	183.34	Reimbursement for retiree health benefits by check
16227	01/03/18	Byron Jones	646.86	Reimbursement for retiree health benefits by check
16228	01/03/18	CAL-CARD	4,141.67	State of California Purchase Card, October-November 2017
16229	01/08/18	Bay City Boiler & Engineering	10,494.00	Installation of butterfly valves (4); replacement hot water piping
16230	01/08/18	Cal Inc	1,893.00	SQSP PS Maint: Lead paint stabilization (Note B)
16231	01/08/18	CASA	3,250.00	Bay Area Biosolids Coalition membership, January-June 2018
16232	01/08/18	CSRMA	43,537.00	Pooled Liability Program Insurance, 12/31/2017-12/31/2018
16233	01/08/18	Everfi Inc	1,375.00	Staff training: Workplace Violence Prevention
16234	01/08/18	Evoqua Water Tech LLC	9,983.62	Hydrogen Peroxide (1 delivery)
16235	01/08/18	Alan Fiore	330.10	Employee expenses eligible for Agency dental reimbursement
16236	01/08/18	Flyers Energy LLC	3,117.35	Gasoline
16237	01/08/18	Foster Flow Control	2,299.56	CCT pump check valves (2)
16238	01/08/18	Give Something Back Inc	26,088.67	Maintenance Building furniture and fixtures
16239	01/08/18	Hilton Hotels**	-	Voided check
16240	01/08/18	Home Depot Credit Services	343.35	Maintenance parts & supplies
16241	01/08/18	Kone Inc	131.59	Elevator monthly maintenance
16242	01/08/18	Liebert Cassidy Whitmore	2,300.00	2018 Sonoma/Marin Employment Relations Consortium membership
16243	01/08/18	Lystek International LTD	9,602.03	Biosolids beneficial reuse fee, December 2017
16244	01/08/18	Marin Office Supply	600.27	Office supplies, December 2017
16245	01/08/18	Marin Recycling HHWF	35.00	Yard waste disposal
16246	01/08/18	Marin Municipal Water District	50.55	SF Drake facility water service, 10/10-12/07/2017
16247	01/08/18	Northern Tool & Equipment	2,454.18	Media blast cabinet replacement
16248	01/08/18	OCCUMETRIC	345.00	OIT Recruitment: Pre-employment physical
16249	01/08/18	P.G.& E.	10,621.98	Electricity service, 11/14-12/13/2017
16250	01/08/18	Power Industries Co.	116.47	Maintenance parts & supplies
16251	01/08/18	Promium LLC	9,775.00	LIMS implementation services, Progress Payment #2
16252	01/08/18	Noel Rafalo	854.50	Employee expenses eligible for Agency dental reimbursement
16253	01/08/18	Ricoh USA Inc	577.34	Admin and Lab copier leases (2 invoices)
16254	01/08/18	RM Automation Inc	4,081.38	Replacement temperature sensors for cogeneration system
16255	01/08/18	Rock Steady Juggling	1,000.00	Pub Ed Program: Outreach at 2 schools (Note B)
16256	01/08/18	Rockwell Engineering &	12,557.71	Refurbished parts for OWRF rock trap grinder
16257	01/08/18	Roy's Sewer Service, Inc.	2,500.00	OWRF quarterly cleaning
16258	01/08/18	Support Product Services, Inc	3,105.97	Bi-annual service for Waukesha portable emission analyzer
16259	01/08/18	SPURR	4,506.78	Natural gas supply, December 2017
16260	01/08/18	Thomas & Associates	415.91	SD2 PS Maint: Maintenance parts and supplies (Note B)
16261	01/08/18	TAP Plastics, Inc.	143.23	Maintenance parts & supplies
16262	01/08/18	Thatcher Company of	9,748.20	Ferric Chloride (2 deliveries)
16263	01/08/18	Brian Thomas	139.10	Employee expense reimb: CALPELRA Annual Conference
16264	01/08/18	Total Waste Systems, Inc.	4,574.12	Biosolids hauling fee, December 2017
16265	01/08/18	ULINE	4,604.29	1) Stainless steel packing tables (4); 2) Utility supplies (2 invoices)
16266	01/08/18	Van Bebbler Bros., Inc.	1,590.66	Stainless steel bases for facility pumps (7)
16267	01/08/18	Wells Fargo Vendor	368.69	Maintenance copier lease, 12/13/2017-01/12/2018
16268	01/08/18	Woodland Center Auto Supply	38.61	Auto parts and supplies
16269	01/09/18	California Public Employee	4,127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 12/30/2017 (Note C)
16270	01/09/18	California State Disbursement	250.50	EE Garnishment, PPE 12/30/2017 (Note A)
16271	01/09/18	ICMA Retirement Trust-457	8,290.00	Deferred compensation contributions, PPE 12/30/2017 (Note A)
16272	01/09/18	Navia Benefit Solutions	607.68	Flexible spending account, PPE 12/30/2017
16273	01/09/18	SEIU Local 1021	1,106.06	Union dues, PPE 12/30/2017
16274	01/11/18	AireSpring	711.14	Telephone service, December 2017
16275	01/11/18	Aramark Uniform Services	1,817.12	Uniform service, November and December 2017
16276	01/11/18	Cal Steam	351.58	Maintenance parts & supplies (2 invoices)
16277	01/11/18	Caltest Analytical Laboratory	177.42	Lab analyses

Central Marin Sanitation Agency
Operating Account Disbursements Register
For the Month of January 2018

Check Number	Date	Vendor/Payee	Amount	Description
16278	01/11/18	CDW Government, Inc.	3,806.04	Microsoft Office 365 license renewals (46)
16279	01/11/18	City Electric Supply	620.66	Electrical supplies (3 invoices)
16280	01/11/18	Comcast	191.20	Internet service, 01/04-02/03/2018
16281	01/11/18	CWEA TCP	540.00	Membership fee (3 employees)
16282	01/11/18	Dee Consultants LLC	2,300.00	Prof Svcs: Construction Management Support, December 2017
16283	01/11/18	Fastenal Company	6.34	Maintenance parts & supplies
16284	01/11/18	Fisher Scientific	750.34	Lab supplies (5 invoices)
16285	01/11/18	GFOA	225.00	PAFR Award application fee
16286	01/11/18	Grainger	465.92	Maintenance parts & supplies (3 invoices)
16287	01/11/18	Industrial Control Links	4,127.39	PLC controller replacement for WAS control panel
16288	01/11/18	Jackson's Hardware	867.82	Utility/Maintenance parts & supplies, December 2017
16289	01/11/18	McMaster-Carr Supply Co.	2,008.91	Maintenance parts & supplies (13 invoices)
16290	01/11/18	Medical Center of Marin	40.00	Audiometric testing (1 employee)
16291	01/11/18	Monica Oakley	420.00	Prof Svcs: Regulatory consulting, December 2017
16292	01/11/18	Rafael Lumber	220.64	Maintenance parts & supplies
16293	01/11/18	Ricoh USA Inc	1,494.29	Admin copier lease, 12/23/2017-01/22/2018
16294	01/11/18	Safety-kleen Systems, Inc	644.14	Hazardous waste disposal
16295	01/11/18	State Board of Equalization	100.15	Underground storage tank maintenance fee
16296	01/11/18	VWR International	370.64	Lab supplies (2 invoices)
16297	01/11/18	Waste Management	15,469.04	Redwood Landfill biosolids reuse fee, December 2017
16298	01/11/18	Water Components & Bldg. Supp.	147.11	Maintenance parts & supplies
16299	01/17/18	Allied Fluid Products Corp	511.37	Maintenance parts & supplies
16300	01/17/18	Amazing Solutions, Inc.	150.00	Prof Svcs: Accounting software support, December 2017
16301	01/17/18	American Sentry Systems, Inc.	105.00	Alarm service, January-March 2018
16302	01/17/18	Battalion One Fire Protection	400.00	Quarterly fire sprinkler inspection
16303	01/17/18	Carollo Engineers, Inc.	75,556.25	Prof Svcs: 2017 Facilities Master Plan Project, November-December 2017
16304	01/17/18	CDW Government, Inc.	944.61	Adobe Acrobat Pro licenses (3)
16305	01/17/18	Chemurgic Agricultural	5,086.76	Sodium Bisulfite (1 delivery)
16306	01/17/18	CWEA TCP	180.00	Membership fee (1 employee)
16307	01/17/18	Jason Dow	214.00	Employee per diem advance: CASA Winter Conference
16308	01/17/18	EAS Corp.	833.71	Odor scrubber fan blade for Solids Handling Building
16309	01/17/18	G3 Engineering, Inc.	20,492.00	Waterchamp chemical induction mixer
16310	01/17/18	Hagel Supply Co.	770.89	Utility/lab supplies, December 2017
16311	01/17/18	IDEXX Distribution Inc	202.94	Lab supplies
16312	01/17/18	JOBS Available, Inc.	45.00	Subscription renewal
16313	01/17/18	Marin Color Service	382.52	Paint supplies, December 2017
16314	01/17/18	Marin Sanitary Service	2,092.56	Yardwaste and rag box disposal, November 2017
16315	01/17/18	Marin Resource Recovery Center	35.00	Green waste disposal
16316	01/17/18	Metal Service Center	531.00	Stainless steel for CCT safe access gates
16317	01/17/18	Michael D Brown	15,909.00	Prof Svcs: PG&E Interconnection Agreement Project, December 2017
16318	01/17/18	Miller Pacific	6,864.00	Prof Svcs: Landslide Geotechnical Investigation and Design, November-December 2017
16319	01/17/18	Orchard Business/SYNCB	107.58	Maintenance parts & supplies
16320	01/17/18	Powerstride Battery Co Inc	1,666.04	Engine Room lighting and battery replacements
16321	01/17/18	Thomas Fish Company	142.50	Lab supplies
16322	01/17/18	Univar USA Inc	13,393.36	Sodium Bisulfate (1 delivery); Sodium Hypochlorite (2 deliveries)
16323	01/17/18	Watson-Marlow Inc	7,773.54	Hose pump parts for OWRF
16324	01/17/18	Woodland Center Auto Supply	162.19	Auto parts
16325	01/17/18	Wiley Price & Radulovich	302.50	Prof Svcs: Employment law services, December 2017
16326	01/23/18	California Public Employee	4,127.45	Contribution to Retiree Health Benefits Trust Fund, PPE 01/13/2018 (Note C)
16327	01/23/18	California State Disbursement	250.50	EE Garnishment, PPE 01/13/2018 (Note A)
16328	01/23/18	ICMA Retirement Trust-457	7,648.00	Deferred compensation contributions, PPE 01/13/2018 (Note A)
16329	01/23/18	Navia Benefit Solutions	657.68	Flexible spending account, PPE 01/13/2018

Central Marin Sanitation Agency
Operating Account Disbursements Register
For the Month of January 2018

Check Number	Date	Vendor/Payee	Amount	Description
16330	01/23/18	SEIU Local 1021	1,036.76	Union dues, PPE 01/13/2018
16331	01/23/18	Amazon	2,017.02	Computer and electrical supplies, December 2017
16332	01/23/18	AT&T	329.60	Fax and emergency phone services, 01/07-02/06/2018
16333	01/23/18	AT&T Dataplan	405.65	Wireless service, 12/02/2017-01/01/2018
16334	01/23/18	David Ernst	570.00	Commuter Reimbursement Program: November-December 2017
16335	01/23/18	Evoqua Water Tech LLC	9,995.48	Hydrogen Peroxide (1 delivery)
16336	01/23/18	Galco Industrial Electronics	528.58	Electrical supplies
16337	01/23/18	IEDA, Inc.	782.00	Labor relations consulting, January 2018
16338	01/23/18	Koff & Associates, Inc.	3,000.00	Prof Svcs: Electrical/Instrumentation Technician recruitment
16339	01/23/18	Kone Inc	131.59	Elevator monthly maintenance
16340	01/23/18	Marin Recycling HHWF	40.00	Debris box disposal
16341	01/23/18	Anthony Smith	395.99	Employee Expense Reimb: CA Hazardous Waste annual training
16342	01/23/18	State Water Resources Ctrl Brd	125.00	Membership fee (1 employee)
16343	01/23/18	Teledyne Instruments Inc	1,269.31	ISCO Sampler replacement tubing
16344	01/23/18	Univar USA Inc	12,334.63	Sodium Bisulfate (2 deliveries); Sodium Hypochlorite (1 delivery)
16345	01/23/18	Western Exterminator Co.,Inc.	177.50	Pest control, December 2017
16346	01/25/18	Airgas USA, LLC	53.06	Nitrogen cylinder rental
16347	01/25/18	Christopher J Wilson	203.83	Office supplies
16348	01/25/18	CAL-CARD	9,434.85	State of California Purchase Card, November-December 2017
16349	01/25/18	Cal Steam	289.03	Maintenance parts & supplies
16350	01/25/18	Caltest Analytical Laboratory	2,015.09	Lab analyses
16351	01/25/18	City Electric Supply	812.94	Electrical supplies (3 invoices)
16352	01/25/18	Cole-Parmer Instrument Co.	250.22	Lab supplies
16353	01/25/18	Fastenal Company	2,649.67	Facility air handler filters
16354	01/25/18	Fisher Scientific	1,047.62	Lab supplies (7 invoices)
16355	01/25/18	Grainger	1,322.16	Safety/Lab/Maintenance supplies, December 2017
16356	01/25/18	Harrington Industrial Plastics	582.04	Effluent vault strainer
16357	01/25/18	Kaman Industrial Technologies	226.47	Maintenance parts & supplies
16358	01/25/18	McMaster-Carr Supply Co.	3,058.18	Safety/Lab/Maintenance supplies December 2017
16359	01/25/18	MicroCool	60.15	Filters
16360	01/25/18	Modular Space Corporation	2,279.77	Portable office removal and cleaning fee (2 invoices)
16361	01/25/18	Northern Tool & Equipment	2,747.74	Tool storage equipment
16362	01/25/18	Platt	89.93	Electrical supplies
16363	01/25/18	Praxair Distribution, Inc.	96.50	Cylinder rental
16364	01/25/18	Ryan Herco Flow Solutions	552.02	Lab supplies (2 invoices)
16365	01/25/18	Jeremy Schwarm	163.00	Employee Expense Reimb: DMV report and mileage to pre-employment physical
16366	01/25/18	State Water Resources Ctrl Brd	1,400.00	Annual Stormwater Permit, 01/01-12/31/2018
16367	01/25/18	Univar USA Inc	5,803.98	Sodium Hypochlorite (2 deliveries)
16368	01/25/18	VWR International	946.37	Lab supplies (5 invoices)

Payments by Automatic Clearing House:

1/2/2018	Payments to 24 retirees	6,967.41	Reimbursement for retiree health benefits
1/10/2018	Buhler ACH	41,237.91	Maintenance Facility Modifications Project, December 2017 Progress Payment #8
1/31/2018	Buhler ACH	53,073.82	Retainage release
1/4/2018	Calpers Medical ins	66,336.22	Medical insurance, January 2018
1/4/2018	Delta Dental	7,790.35	Dental insurance, January 2018
1/4/2018	Lincoln Life Ins	2,289.67	Life insurance, January 2018
1/4/2018	Vision Service Plan -(CA)	930.78	Vision insurance, January 2018
1/9/2018	CalPERS	35,438.64	Retirement Pension Contribution: Agency and Employees, PPE 12/30/2017 (Note C)
01/23/18	CalPERS	34,942.24	Retirement Pension Contribution: Agency and Employees, PPE 01/13/2018 (Note C)
1/9/2018	EDD	14,160.61	State & SDI Taxes, PPE 12/30/2017

Central Marin Sanitation Agency
 Operating Account Disbursements Register
 For the Month of January 2018

Check Number	Date	Vendor/Payee	Amount	Description
	1/9/2018	EDD	925.86	State & SDI Taxes, PPE 01/01/2018
	1/11/2018	EDD	1,857.24	State & SDI Taxes, Check for EPMC (one employee)
	1/24/2018	EDD	12,348.01	State & SDI Taxes, PPE 01/13/2018
	1/30/2018	EDD	230.00	State & SDI Taxes, Check for EPMC (one employee)
	1/10/2018	NRS/PEHP-3 and Z	29,256.33	Deferred compensation contribution, PPE 12/02/2017
	1/24/2018	NRS/PEHP-3 and Z	6,211.88	Deferred compensation and MARA contribution, PPE 12/16/2017
	1/30/2018	NRS	22,436.50	Deferred compensation contribution for EPMC (one employee)
	1/31/2018	Western Electric	125.00	WREGIS account fee
	1/17/2018	Michael Owen Boorstein	100.00	Stipend for 01/09/2018 Regular Board meeting
	1/17/2018	Maribeth Bushey	100.00	Stipend for 01/09/2018 Regular Board meeting
	1/17/2018	Dean DiGiovanni	100.00	Stipend for 01/09/2018 Regular Board meeting
	1/17/2018	Diane L. Furst	200.00	Stipend for 01/09/2018 Board meeting and NBWA meeting
	1/17/2018	Thomas E Gaffney	100.00	Stipend for 01/09/2018 Regular Board meeting
	1/17/2018	Dan Hillmer	100.00	Stipend for 01/09/2018 Regular Board meeting
		Grand Total	821,009.78	

Notes:

- A: Not an Agency Expense. Expense funded through Payroll deduction.
- B: Not an Agency Expense. CMSA will be reimbursed for this expense.
- C: CMSA is partially reimbursed for this expense per Employee Labor Agreements.

Central Marin Sanitation Agency
 Schedule of Investments
 As of Month Ending January 31, 2018

Description (1)	Book Value (2)	Market Value (3)	Agency Reserve Target for January 31, 2018
i. Investments managed by California Asset Management Program (CAMP)			
Money Market Funds (< 1 year in maturity)			
CAMP Cash Reserve Pool: 1.43%			
b1. Agency Unrestricted Reserve: Operating	\$ 12,752.17	\$ 12,752.17	See LAIF
b2. Agency Unrestricted Reserve: Emergency	\$ 250,000.00	\$ 250,000.00	\$ 250,000
b3. Agency Unrestricted Reserve: Insurance	\$ 100,000.00	\$ 100,000.00	\$ 100,000
Total with CAMP	\$ 362,752.17	\$ 362,752.17	
ii. Investments managed by Local Agency Investment Fund (LAIF)			
Money Market Funds (< 1 year in maturity)			
Local Agency Investment Fund (LAIF): 1.2% (estimate)			
a. Current Year Operating	\$ 5,745,619.71	\$ 5,745,619.71	
b1. Agency Unrestricted Reserve: Operating	\$ 2,852,897.83	\$ 2,852,897.83	\$ 2,865,650
c1. Capital Reserves (Restricted)	\$ 990,477.00	\$ 990,477.00	\$ 990,477
c1. Capital Reserves (Restricted-Capacity/Connection Fees)	\$ -	\$ -	
c2. Capital Reserves (Unrestricted)	\$ 7,240,176.72	\$ 7,240,176.72	\$ 6,175,485
Total with LAIF	\$ 16,829,171.26	\$ 16,829,171.26	
TOTAL INVESTMENTS	\$ 17,191,923.43	\$ 17,191,923.43	
Amount designated for Capital Reserves			
1. CAMP	\$ -	\$ -	\$ 7,165,962
2. LAIF	\$ 8,230,653.72	\$ 8,230,653.72	\$ 7,165,962
Total	\$ 8,230,653.72	\$ 8,230,653.72	

COLUMN DEFINITIONS:

- (1) Description - the issuer, type of security and interest rate
 - (2) Book Value - The sum of Original Cost and Accumulated Amortization
 - (3) Market Value - An estimate of the value at which the principal would be sold from a willing seller to a willing buyer as-of the close of the last business day
- Market values are per the fiscal agent's respective monthly statements.

NOTES:

Capacity connection fees collected each fiscal year are the initial source of funding for capital projects. Capital reserve restricted and unrestricted balances reflect amounts remaining after expenditures for CIP to date, including \$60,349.30 in capacity charges collected to date. Beginning balances for both reserves were determined by the FY 17-18 Adopted Budget.

Statement of Compliance

The above portfolio of investments is in compliance with the Agency's investment policy, adopted at the July 22, 2015 Commission meeting, and California G Section 53600. In addition, the Agency does have the financial ability to meet its cash flow requirements for the next six months.



BOARD MEMORANDUM

February 8, 2018

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager *CF*

Approved: Jason Dow, General Manager

Subject: **January 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report**

Recommendation: Accept the January 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report.

I. NPDES Permit Compliance

Our NPDES permit testing for January showed that the CMSA treatment plant effluent was in compliance with all permit limits. The Monthly Compliance Summary Table shows the results by permitted parameter, the sample's frequency, the sample results, and the permit limit. We successfully passed the January 96-hour flow through bioassay test.

Enterococcus samples were collected during one blend event, beginning January 8 and ending on January 9. CMSA's NPDES permit specifies monitoring for enterococcus bacteria during dry weather months and for each wet weather blend event, to verify compliance with established effluent limits. The enterococcus geometric mean for January was 10.9 MPN, well below our monthly limit of 35 MPN.

II. Influent Flow

In January, the Agency experienced its first significant rain event of the season, receiving 2.29 inches of rain on January 8. The rainfall total for the month was 3.25 inches as recorded by the Agency's rain gauge. The treatment plant exceeded the maximum secondary capacity of 30 MGD during the month, and reported one blend event on the Agency's website. The facility's average daily influent flow was 13.8 MGD.

The CMSA treatment plant and each satellite collection agency's daily average and total monthly influent flows are shown in the table below:

January Monthly Influent Flows	San Rafael (SRSD)	Ross Valley (SD#1)	San Quentin (SQSP)	Corte Madera (SD#2)	CMSA Plant Total
Average Daily (MGD)	4.9 MGD	6.9 MGD	0.61 MGD	1.4 MGD	13.8 MGD
Total for Month (MG)	154.5 MG	215.1 MG	18.9 MG	40.1 MG	428.6 MG
Percent of Flow	36.0 %	50.0 %	4.0 %	10.0 %	100 %

The following table shows the CMSA plant and each satellite collection agency's peak wet weather flows:

Wet Weather Peak Flows*	San Rafael (SRSD)	Ross Valley (RVSD)	San Quentin	Corte Madera (SD#2)	CMSA
01/08 Total Days Flow	16.2 MG	19.0 MG	1.6 MG	4.8 MG	41.0 MG
Peak Flow Rate	32.5 MGD	47.1 MGD	3.2 MGD	7.6 MGD	78.4 MGD

*The time for peak flows and maximum day's flow varies depending on an area's rainfall during the storm

III. Treatment Process

Additional processing equipment was placed into service earlier in the month during the January 8 rain event to treat the additional inflow from the collection systems, but equipment has since been systematically removed from service as inflows have subsided. The facility is currently operating in the dry weather mode. The Mixed Liquor Suspended Solids (MLSS) inventory averaged 1,563 mg/l this past month, a 27.3% increase in biomass from last month. The biomass inventory is currently being reduced based on present process conditions and aligns with the process control decision to carry between 1,200 and 1,400 mg/L to manage our biomass and effectively meet our permit limits. Operations staff removed an aeration basin from service this past month that was no longer required due to reduced influent flows.

Graph #3 shows the coliform most probable number (MPN), which represents the effectiveness of the disinfection process. All nineteen coliform samples collected in January were below our KPI of 30 MPN, and well below our daily limit of 10,000 MPN. The total coliform monthly geometric mean for January was 2.2 MPN, well below our permit's monthly limit of 240 MPN.

Graph #4 shows the Total Suspended Solids (TSS), which is a good indicator of the effluent quality. The TSS monthly average in January was 6.1 mg/l, which is 41.0% of our Key Performance Indicator (KPI) of 15 mg/l, and is 20.0% of our permit's monthly average limit of 30 mg/l. The January 8 rain event contributed to the onetime 25.2 mg/L TSS recording.

IV. Maintenance Activities

The cogeneration system produced 93.1% of the Agency's power in January, and MCE supplied the balance. The generator, as indicated on Graph #8, was in service and produced green power for the entire month. There were two occasions in January when the cogeneration system was temporarily removed from service:

- January 10 – Replaced a waste heat exchanger, which required a system shutdown
- December 20 – Scheduled 2,000-hour preventative maintenance procedure

With only one significant rain event occurring in January, Agency technicians used this opportunity to move additional shop equipment back into the rehabilitated Maintenance Building, which was in addition to completing monthly preventative maintenance tasks. Facility scheduled and completed project work in January included the installation of a new digester hot water recirculation pump; replacement of a mixing pump's motor bearings and pump hose at the Organic Waste Receiving Station; and installation of new LED lighting in the bulk chemical storage building's workshop.

Attachment

- January 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

January 2018



Effluent Storage Pond During the January 8th Storm Event

Monthly Compliance Summary Table

Central Marin Sanitation Agency

January, 2018

Final Effluent Monitoring

Parameter	Frequency	Units	Results	Limit
Carbonaceous BOD Highest Weekly Average	Weekly	mg/L	12.4	Maximum 40
Carbonaceous BOD Monthly Average	Monthly	mg/L	7.1	Maximum 25
Carbonaceous BOD Monthly Removal Rate	Monthly	%	95.0	Minimum 85
Total Suspended Solids Highest Weekly Average	Weekly	mg/L	10.8	Maximum 45
Total Suspended Solids Monthly Average	Monthly	mg/L	6.1	Maximum 30
Total Suspended Solids Monthly Removal Rate	Monthly	%	96.8	Minimum 85
Chlorine Residual Instant Limit	Instant	mg/L	ND	Maximum 0.0
Ammonia Monthly Average	Monthly	mg/L	27.2	Maximum 60
Ammonia Maximum Daily	Daily	mg/L	30.2	Maximum 120
pH Lower Limit	Continuous	SU	6.3	Minimum 6
pH Upper Limit	Continuous	SU	8.0	Maximum 9
Bacteriological Analysis				
Total Coliform Monthly Geometric Mean	3 X Week	MPN/100mL	2.2	Maximum 240
Total Coliform Daily Maximum	3 X Week	MPN/100mL	26.9	Maximum 10,000
Enterococcus Monthly Geometric Mean	Monthly	MPN/100mL	10.9	Maximum 35
Flow Through Bioassay				
Acute Toxicity 11 Sample 90th Percentile	Monthly	% survival	100	Minimum 70
Acute Toxicity 11 Sample Median	Monthly	% survival	100	Minimum 90
Metals Analysis				
Copper Daily Limit	Monthly	ug/L	X	Maximum 85
Copper Monthly Average	Monthly	ug/L	X	Maximum 49
Cyanide Daily Limit	Monthly	ug/L	J1.50	Maximum 41
Cyanide Monthly Average	Monthly	ug/L	J1.50	Maximum 21
Mercury Weekly Average	Weekly	ug/L	0.0027	Maximum 0.072
Mercury Monthly Average	Monthly	ug/L	0.0027	Maximum 0.066
Mercury Monthly Loading	Monthly	kg/mo	0.00295	
Mercury Annual Loading (watershed permit)	Jan-Dec	kg/yr	0.00295	Maximum 0.11
Permit Analysis				
Dioxin - Total Equivalent (TEQ) Daily Maximum	1/Permit Cycle	ug/L	*	Maximum 2.8E-08
Dioxin - Total Equivalent (TEQ) Monthly Average	1/Permit Cycle	ug/L	*	Maximum 1.4E-08
Polychlorinated Biphenyls (PCBs) Daily Limit	1/Permit Cycle	ug/L	*	Maximum 0.017
Polychlorinated Biphenyls (PCBs) Monthly Limit	1/Permit Cycle	ug/L	*	Maximum 0.012
Quarterly Analysis				
Oil and Grease Daily Limit	Quarterly	mg/L	X	Maximum 20
Oil and Grease Monthly Average	Quarterly	mg/L	X	Maximum 10
Chronic Bioassay Toxicity	Quarterly	Tuc	X	Maximum 20
Chronic Bioassay Toxicity (3 sample median)	Quarterly	Tuc	X	Maximum 10
Flow Analysis				
	Daily Max	Hourly Max	5 minute Max	Monthly Average
Effluent Flow	38.1	72.8	73.3	13.1
Influent Flow	41.0	76.7	78.4	13.8
# Days Blended				2

* Monitoring Not Required This Month ND = None Detected X = Data not available at report time J = Detected by not Quantified

Glossary of Terms
NPDES Permit Compliance Summary Table

- **Ammonia:** CMSA's NPDES permit requires that we analyze the final effluent for ammonia due to its toxicity to aquatic organisms and potential for providing nutrients for algae in the San Francisco Bay. The permit has a maximum daily limit of 60 mg/L and a monthly average limit of 120 mg/L. The maximum daily limit is the number that cannot be exceeded on any sample and the monthly average applies to all samples collected in any month (although typically we are required to take only one sample).
- **Biochemical Oxygen Demand (BOD):** The amount of dissolved oxygen needed by microorganisms (biomass) to stabilize organic material in the effluent. The permit limits for our effluent require that removal of 85% influent BOD, and meet a weekly average of less than 40 mg/L and a monthly average of less than 25 mg/L BOD.
- **Chlorine Residual:** The secondary effluent is disinfected with hypochlorite (chlorine "bleach"), and then the residual chlorine is neutralized with sodium bisulfite to protect the Bay environment. The final effluent chlorine residual limit is 0.0 mg/l, which is monitored continuously.
- **Bacteria:** Coliform and enterococcus bacteria are the indicator organisms for the determination of the effectiveness of the disinfection process.
- **Dioxin - Total Equivalents:** These are 17 dioxin-like compounds that we analyze for twice per year which have permit limits.
- **Fats, Oils, and Grease:** We are required to monitor our effluent for Fats, Oils, and Grease quarterly.
- **Flow Through Bioassay:** A 96-hour test in which we test the toxicity of our effluent to young rainbow trout (15-30 days old) in a flow-through tank to determine their survivability under continuous exposure to CMSA effluent. The permit requires that we maintain a 90th percentile survival of at least 70% and an 11-sample median survival of at least 90%. In layman's terms, this means that out of the last 11 samples, only one bioassay may fall below 70% survival, and the middle value—when all 11 samples are placed in numerical order—must be at least 90%.
- **Metals Analysis:** Our permit requires that we analyze our effluent for many different metals on a monthly basis. We have permit limits for three of the metals. The limits are stated as a maximum daily limit and a monthly average limit.
- **pH:** pH is a measurement of acidity, with pH 7.0 being neutral and higher pH values being basic and lower pH values being acidic. Our permit effluent pH must stay within the range of 6.0 to 9.0, which we monitor continuously.
- **Total Suspended Solids (TSS):** Measurement of suspended solids in the effluent. Our permit requires that we remove at least 85% of the influent TSS and that the effluent limit is less than 45 mg/L as a weekly average and less than 30 mg/L as a monthly average.

Executive Summary Process Performance Data

January 2018

The removal efficiencies shown are based on the monthly average of the following treatment processes that were in service.

Primary Clarifier Performance

Average Total Suspended Solids (TSS) in:	<u>339.5</u>	mg/l
Average TSS out:	<u>110.4</u>	mg/l
Average Percent Removal Achieved:	<u>57.3</u>	%
Average Total Carbonaceous Biochemical Oxygen Demand (CBOD) in:	<u>235.7</u>	mg/l
Average BOD out:	<u>112.5</u>	mg/l
Average Percent Removal Achieved:	<u>54.3</u>	%
Average Plant Influent Flows:	<u>13.7</u>	MGD

Expected removal efficiencies as outlined in Metcalf & Eddy Wastewater Engineering Manual

Design 50-70% Removal

Design 25-40% Removal

Biotower Performance

Average TSS out:	<u>105.5</u>	mg/l
Average BOD out:	<u>78.5</u>	mg/l
Average Percent BOD Removal Achieved:	<u>57.7</u>	%

Design 25-30% Removal

Aeration Tanks/Activated sludge

Dissolved Oxygen set point:	<u>2.0</u>	mg/l
Average MLSS:	<u>1,563</u>	mg/l
Average MCRT	<u>4.7</u>	Days
Average SVI:	<u>221</u>	

Secondary Clarifiers

Average WAS concentration:	<u>7,199</u>	mg/l
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Final Effluent

Average Effluent TSS for the month was:	<u>6.1</u>	mg/l	(Maximum Limit: 30mg/l)
Week #1 weekly average	<u>5.2</u>		(Maximum Limit: 45mg/l)
Week #2 weekly average	<u>10.8</u>		"
Week #3 weekly average	<u>4.3</u>		"
Week #4 weekly average	<u>5.6</u>		"
Week #5 weekly average	<u>N/A</u>		"
Monthly average TSS removal efficiency through the plant was:	<u>96.8</u>	%	(Minimum Limit: 85%)

Average Effluent CBOD was:	<u>7.4</u>	mg/l	(Maximum Limit: 25mg/l)
Week #1 weekly average	<u>5.6</u>		(Maximum Limit: 40mg/l)
Week #2 weekly average	<u>12.4</u>		"
Week #3 weekly average	<u>5.5</u>		"
Week #4 weekly average	<u>8.9</u>		"
Week #5 weekly average	<u>N/A</u>		"
Monthly average CBOD removal efficiency through the plant was:	<u>94.8</u>	%	(Minimum Limit: 85%)

Disinfection Dosing Rate:	<u>4.9</u>	mg/l	monthly average
Total Coliform Monthly Geometric Mean:	<u>2.2</u>	MPN	(Maximum 240)
The Daily Maximum Total Coliform Count for the month was:	<u>26.9</u>	MPN	(Maximum 10,000)
Enterococcus Monthly Geometric Mean:	<u>10.9</u>	MPN	(Maximum 35 MPN)
Effluent pH for the month was:			(Min 6.0)
Min	<u>6.3</u>		
Max	<u>8.0</u>		(Max 9.0)

Digester Treatment

Average Thickened Waste Concentration from the RDT was:	<u>5.88</u>	%	
Average percent of Volatile Solids destroyed was:	<u>85.0</u>	%	
Cubic feet of biogas produced was:	<u>9,636,850</u>	(Total)	<u>310,866</u> (Daily Average)
Average temperature of the digester was:	<u>102.0</u>	degrees Fahrenheit	

Executive Summary Process Performance Data
January 2018

The removal efficiencies shown are based on the monthly average of the following treatment processes that were in service.

Dewatering

Average Centrifuge Feed concentration was:	<u>2.7</u>	%
Average Biosolids concentration was:	<u>26.5</u>	%
Average TSS of the Centrate was:	<u>244</u>	mg/l
Solids capture of the Centrifuge was:	<u>99.19</u>	%
Polymer use per Dry ton of biosolids was:	<u>16.40</u>	#/dry ton
Average polymer feed rate per run was:	<u>3.98</u>	gpm
Average concentration of the polymer batches was:	<u>0.328</u>	%
Average sludge feed rate per run was:	<u>60.7</u>	gpm

Comments:

The treatment plant has been running well with final effluent being of very good quality.

Graph #1:

Depicts the total influent flow (from all collection agencies) entering the treatment plant. The red graph line represents total influent flows; and the black graph line depicts the CMSA rain gauge recordings for the month.

Graph #2:

Depicts individual collection member agency flows. The Y-axis is in the Dry Weather flow range of 0-20 MGD.

Graph #3:

Depicts the coliform most probable number (MPN) results which are an indication of the disinfection system's performance. The monthly Total Coliform Geometric Mean was 2.2 MPN through January, which is less than our KPI median of 30 MPN and permit limit of 240 MPN.

Graph #4:

Depicts the total suspended solids in the effluent. Our monthly average was 6.1 mg/l versus our KPI of 15 mg/l and permit monthly average limit of 30 mg/l. The higher than normal January 8 value was attributed to the day's rain event.

Graph #5:

Depicts the effluent CBOD which measures the oxygen demand of the wastewater. The January effluent CBOD average was 7.4 mg/l, well below our NPDES limits of 40 mg/l weekly and 25 mg/l for the month. As shown on the graph, the higher than normal January 8 value was attributed to the day's rain event, and the higher than normal January 22 value was due to removing an aeration basin from service.

Graph #6:

Depicts the degree to which the biosolids have been dewatered. Our biosolids % concentration exceeded our KPI of 25% for all samples in January.

Graph #7:

Depicts the amount of Biogas that is produced in the digesters, and then used to produce electricity. Biogas production in January averaged 310,866 cubic feet per day, which exceeded our monthly KPI of 200,000 cubic feet per day.

Graph #8:

This graph depicts the amount of energy produced through cogeneration versus the energy purchased from MCE for Agency operations. The cogeneration engine was online for the entire month of January producing 93.1% of the facility's power needs. The engine was temporarily removed from service as described in the January staff report and as shown on the graph.

Glossary of Terms Process Performance Data Sheet

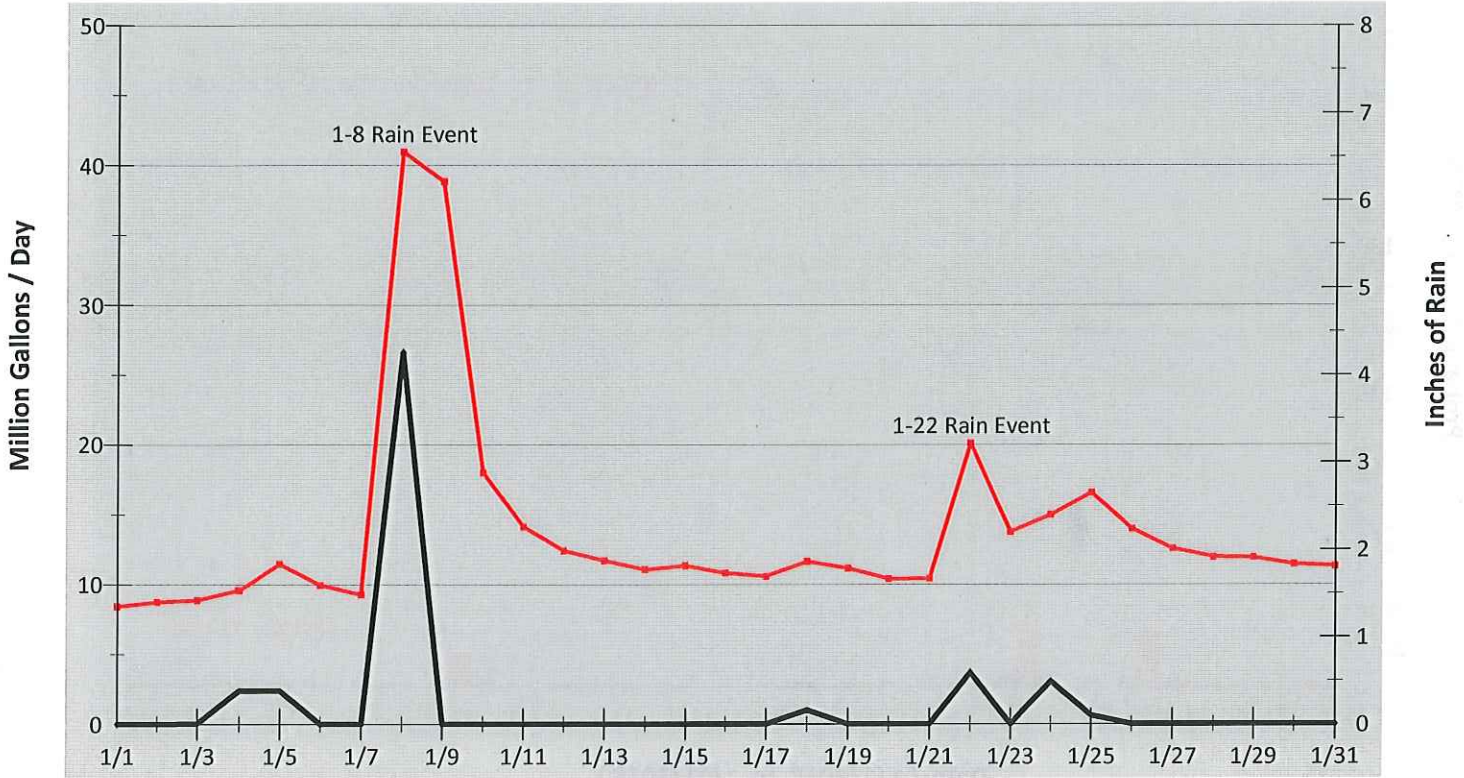
- **Aeration Tanks:** A biological process that takes place after the biotowers, where biomass (microorganisms) is mixed with the wastewater to feed on dissolved and suspended organic material. High speed blowers are used to provide compressed air to mix the tank contents.
- **Anaerobic Digesters:** In the anaerobic digestion process, organic material removed in the primary and secondary clarifiers is digested by anaerobic bacteria. The end products are methane, carbon dioxide, water, stabilized organic matter, and some inorganic material.
- **Biosolids:** Anaerobically digested solids that are removed from the two digesters, dewatered, and then beneficially reused. Beneficial reuse may include landfill alternate daily cover (ADC), land application in the summer as a soil amendment and fertilizer, or converted into a liquid fertilizer for agricultural applications.
- **Biotower:** A biological treatment process, occurring after the primary clarifiers and before the aeration tanks, in which the wastewater trickles over a biomass-covered media. The biomass feeds on the dissolved and suspended solids in the wastewater.
- **Centrifuge:** Process equipment used to dewater biosolids prior to beneficial reuse.
- **Cogeneration System:** A system comprised of a dual-fuel engine coupled to an electric generator that is used to produce energy to power the Agency facilities. Fuels the system uses are methane biogas produced in the anaerobic digesters and, when biogas is not available, purchased natural gas. As well as generating electricity, the system supplies heat for plant processes and building heating.
- **Chlorine Contact Tanks (CCTs):** The final treatment process is disinfection and de-chlorination. The CCTs allow contact time for injected chlorine solution to disinfect the wastewater. Sodium bisulfite, the de-chlorination chemical, is introduced at the end of the CCTs to neutralize any residual chlorine to protect the San Francisco Bay environment.
- **Rotary Drum Thickener (RDT):** Waste activated sludge removed from the secondary clarifiers is thickened in rotary drum thickeners before being transported to the anaerobic digesters. Thickening removes some of the sludge's water content, to decrease hydraulic loading to the digesters.
- **Final Effluent:** After all the treatment processes are completed, the final effluent is discharged into to central San Francisco Bay through a 10,000-foot-long deep-water outfall.
- **Mean Cell Residence Time (MCRT):** An expression of the average time that a microorganism will spend in the secondary treatment system.
- **Mixed Liquor Suspended Solids (MLSS):** The liquid in the aeration tanks is called MLSS and is a combination of water, solids, and microbes. Suspended solids in the MLSS measured in milligrams per liter (mg/l).

- **Most Probable Number (MPN):** Concentrations, or number of colonies, of total coliform bacteria are reported as the “most probable number.” The MPN is not the absolute count of the bacteria but a statistical estimate of their concentration.
- **Polymer:** Polymer is added to digested sludge prior to dewatering to improve solids coagulation and water separation.
- **Primary Clarifier:** A physical (as opposed to biological) treatment process where solids that settle or float are removed and sent to the digesters for further processing.
- **Return Activated Sludge (RAS):** The purpose of returning activated sludge (biomass) to the aeration tanks is to maintain a sufficient concentration of microbes to consume the wastewater’s dissolved solids.
- **Secondary Clarifiers:** Provides settling for the biomass after aeration. Most of the settled biomass is returned to the aeration tank as return activated sludge (RAS) and some is sent to the RDT unit as waste activated sludge.
- **Sludge Volume Index (SVI):** This is a calculation used to indicate the settling ability of the biomass in the secondary clarifiers.
- **Thickened Waste Activated Sludge (TWAS):** Waste activated sludge is thickened in the RDTs, and then the TWAS product is pumped to the digester for processing.
- **Volatile Solids:** Organic content of the wastewater suspended solids.
- **Waste Activated Sludge (WAS):** Biomass that is removed from the secondary clarifiers pumped to the RDTs for thickening.

Units of Measurement

- kg/month (Kilograms per Month): 1 kilogram = 2.205 lbs.
- KPI (Key Performance Indicators): The Agency’s process performance goals.
- Kwh (Kilowatt Hours): A unit of electric power equal to using 1 Kw for 1 hour.
- Milligrams per Liter (mg/L): A measure of the concentration by weight of a substance per unit volume. For practical purposes, one mg/L is equal to one part per million (ppm).
- MPN/100mL (Most Probable Number per 100 milliliters): Statistical estimate of a number per 100 milliliters of a given solution.
- Percent by Mass (% by mass): A measure of the combined mass of a solute + solvent.
- Percent by Volume (% by vol): A measure of the volume of a solution.
- ug/L (Micrograms per Liter of Solution): Mass per unit volume.

Graph #1: CMSA Influent Flow

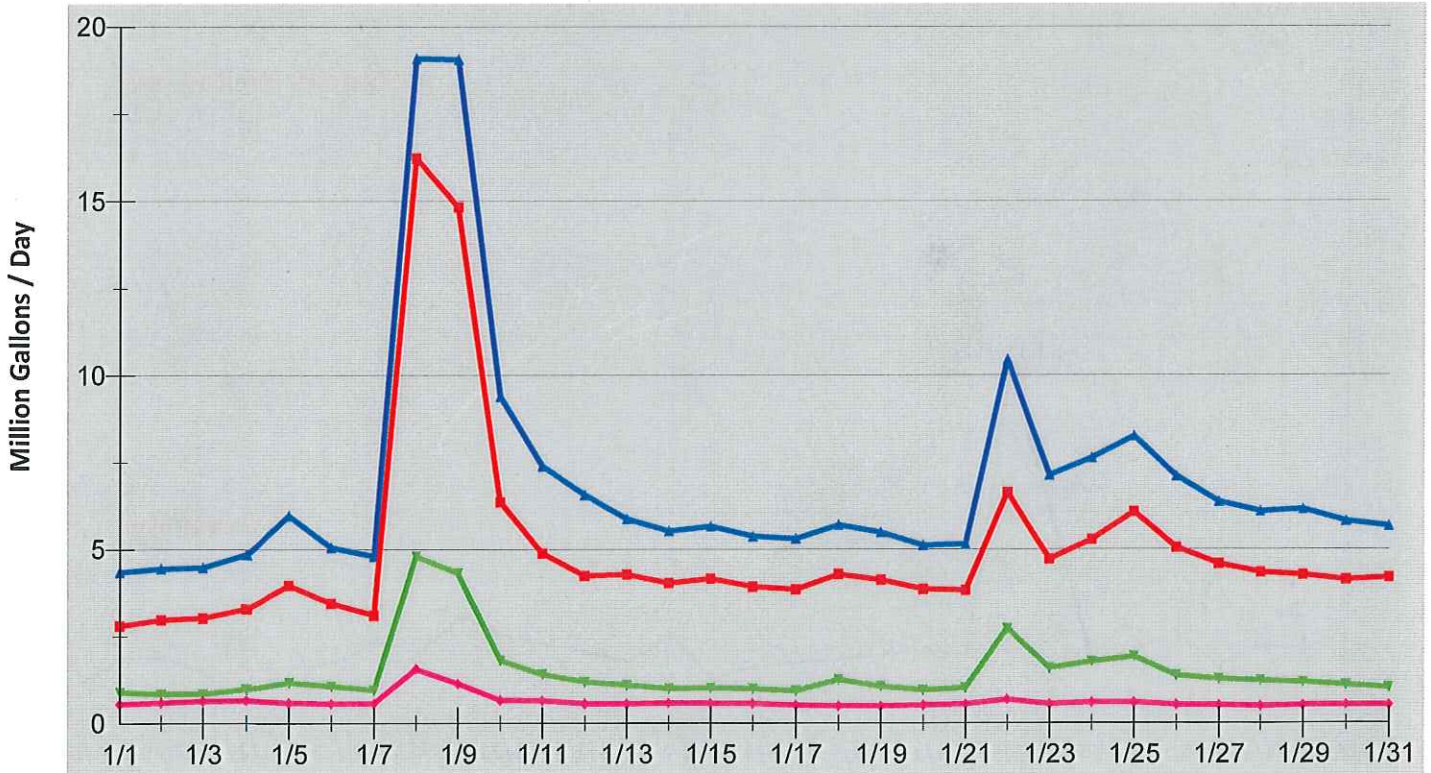


Date (1/1/2018 to 1/31/2018)

■ Flow (Daily Average) • Rainfall (San Rafael)

(#1) CMSA Influent Flow

Graph #2: Collection System Influent Flows

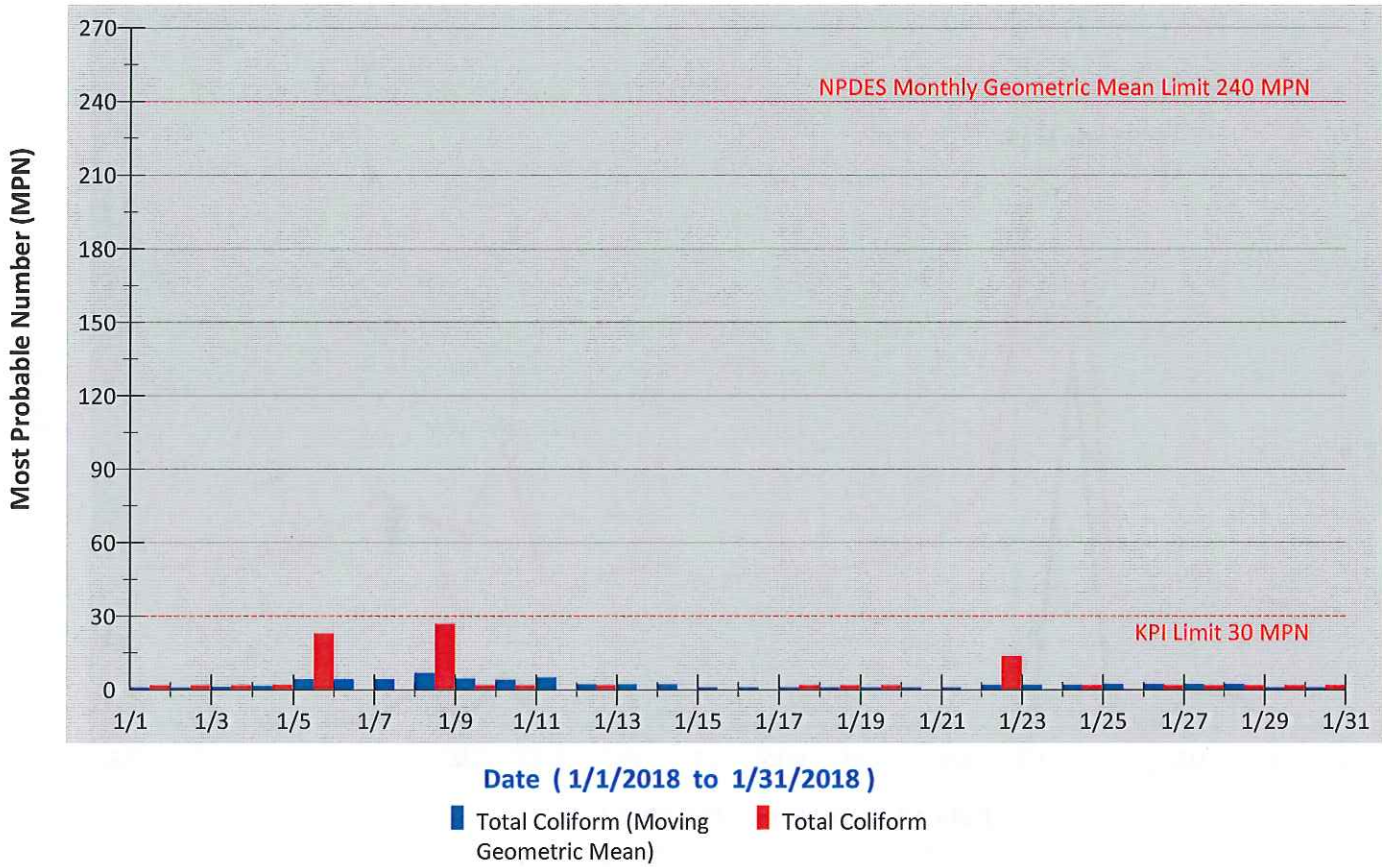


Date (1/1/2018 to 1/31/2018)

▲ RV Flow ■ SR Flow ▼ CM Flow ◆ SQ Flow

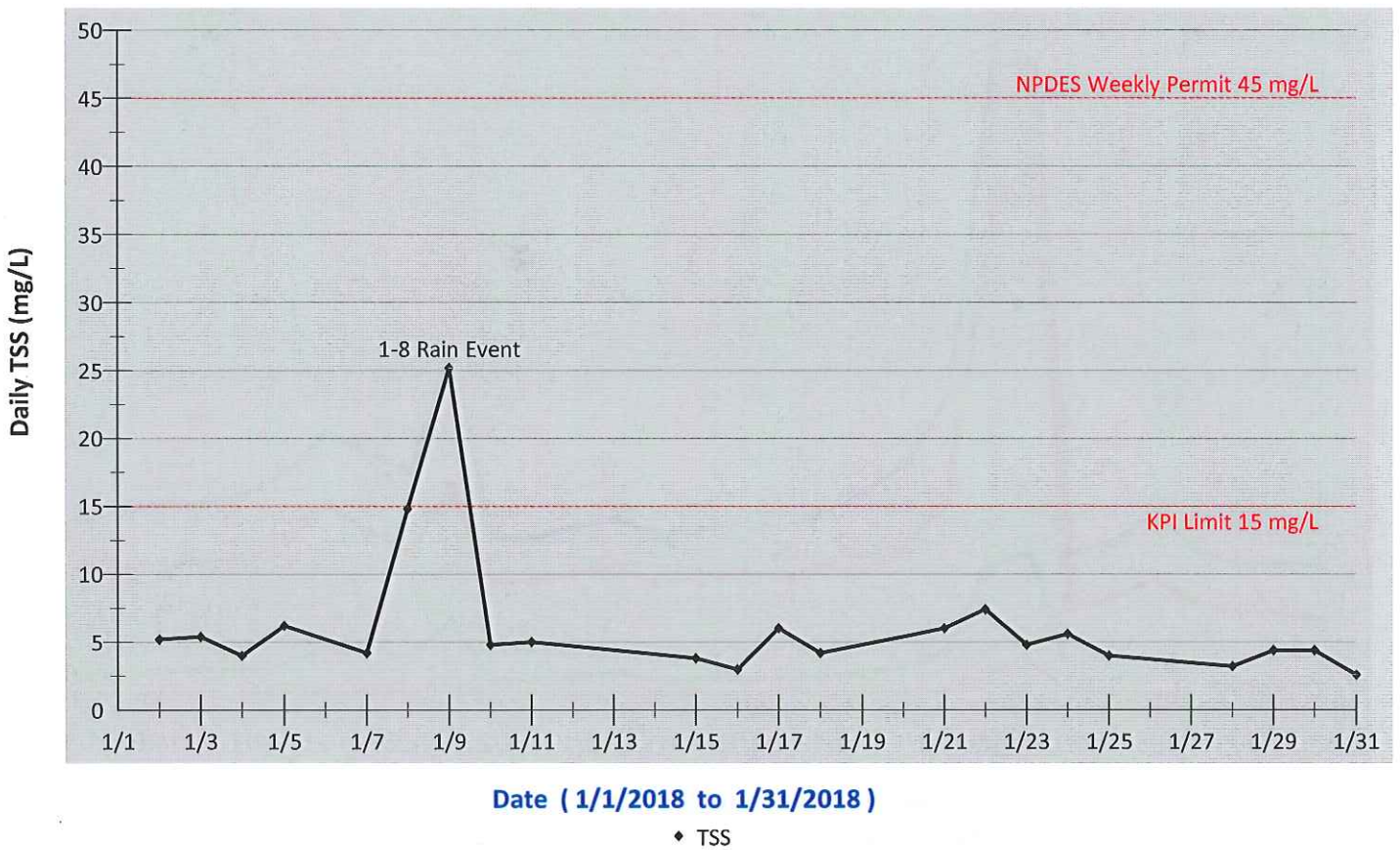
(#2) Collection System Influent Flows

Graph #3: Total Coliform & Monthly Geometric Mean



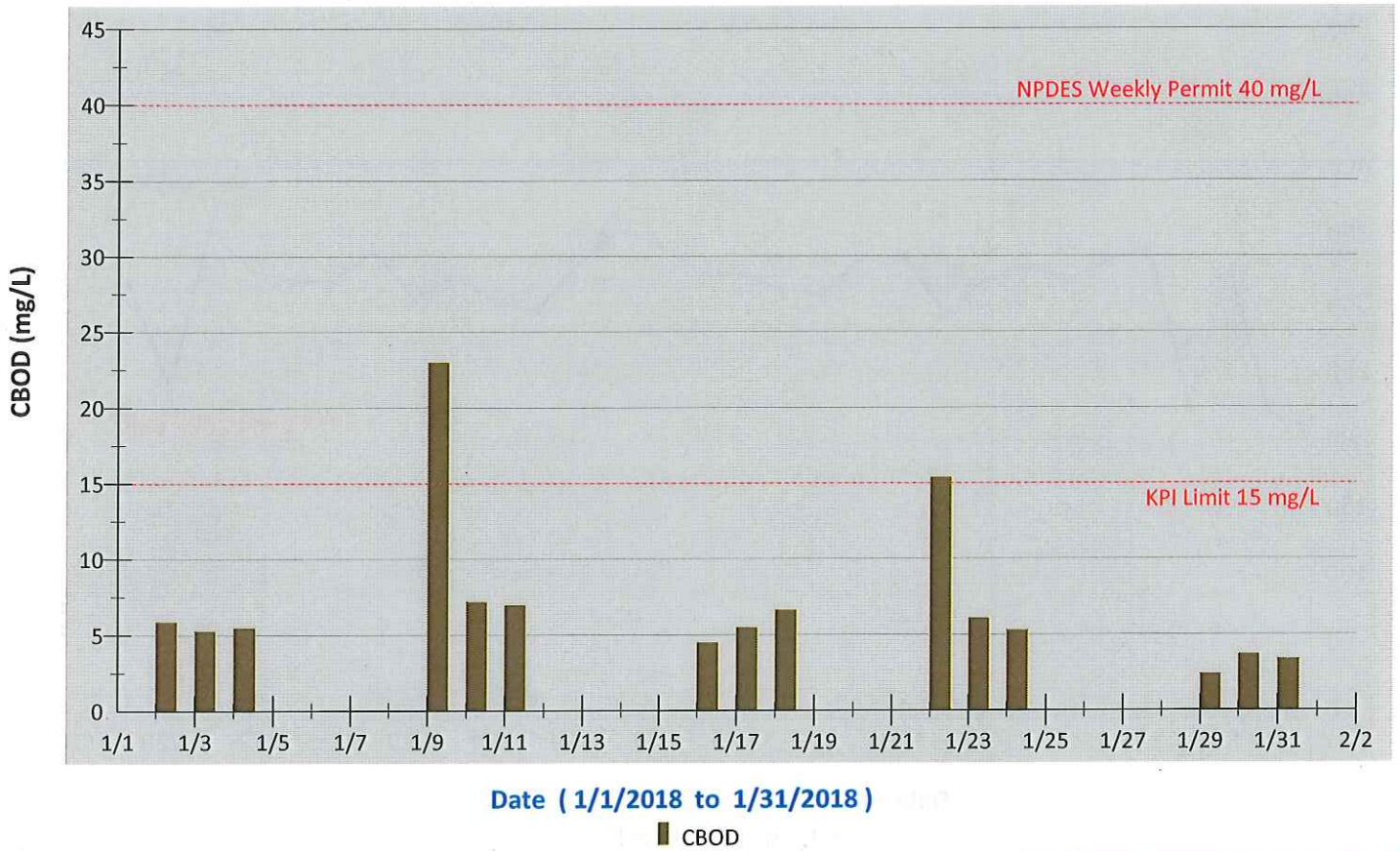
(#3) Total Coliform & Monthly Geometric Mean

Graph #4: Effluent Total Suspended Solids (TSS)



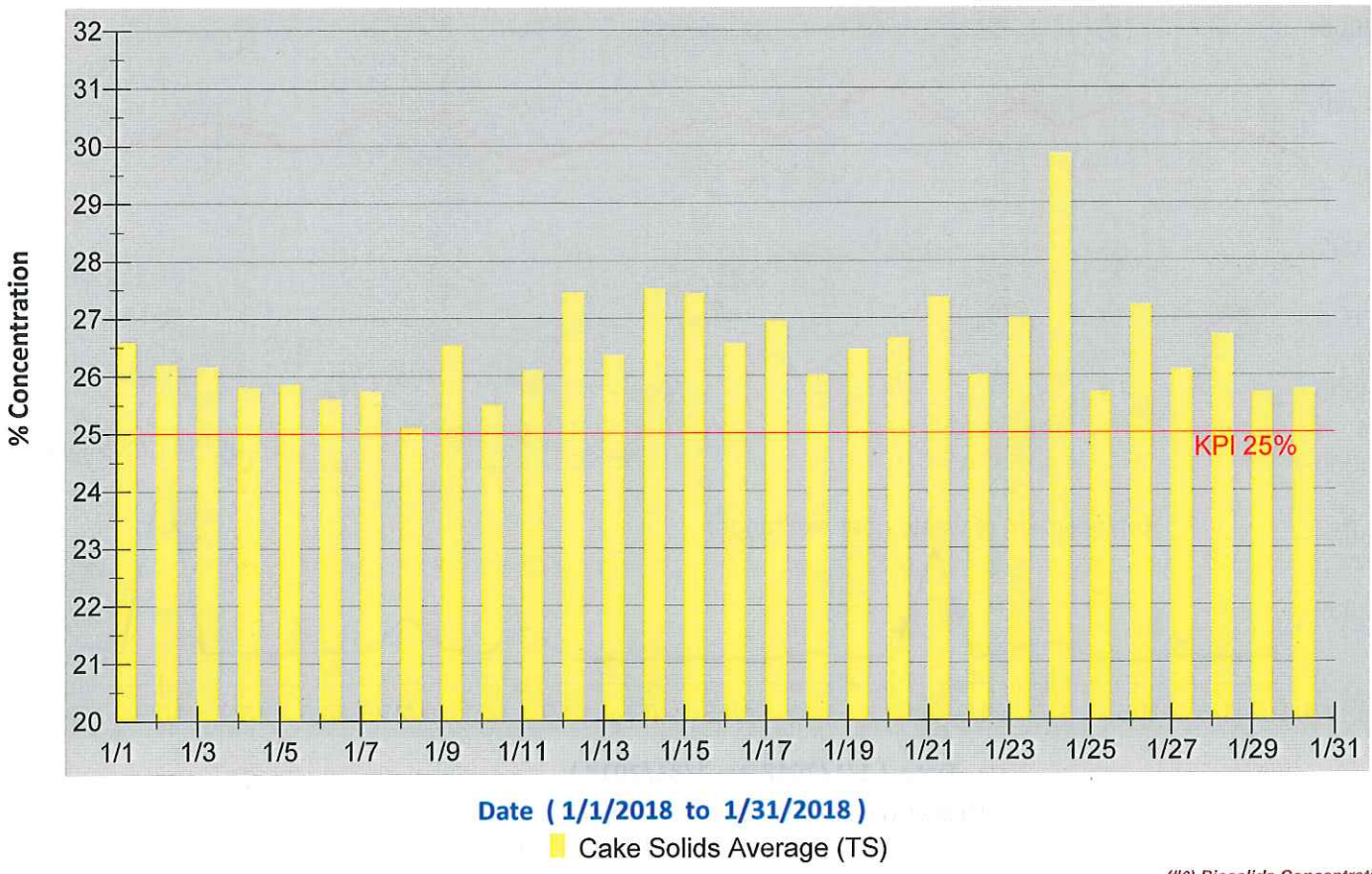
(#4) Effluent Total Suspended Solids (TSS)

Graph #5: Effluent Carbonaceous Biological Oxygen Demand (CBOD)



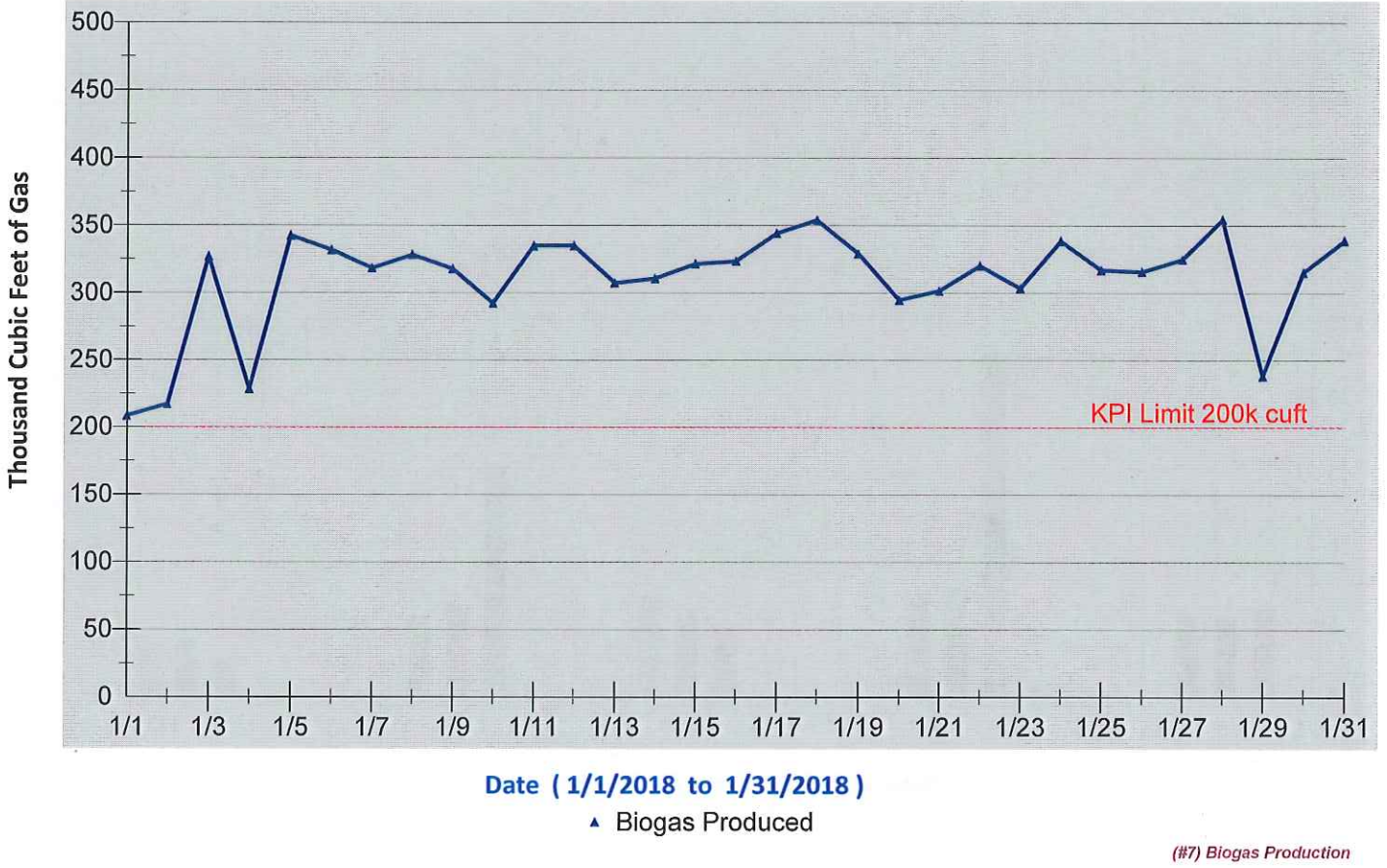
(#5) Effluent Carbonaceous Biological Oxygen Demand (C

Graph #6: Biosolids Concentration

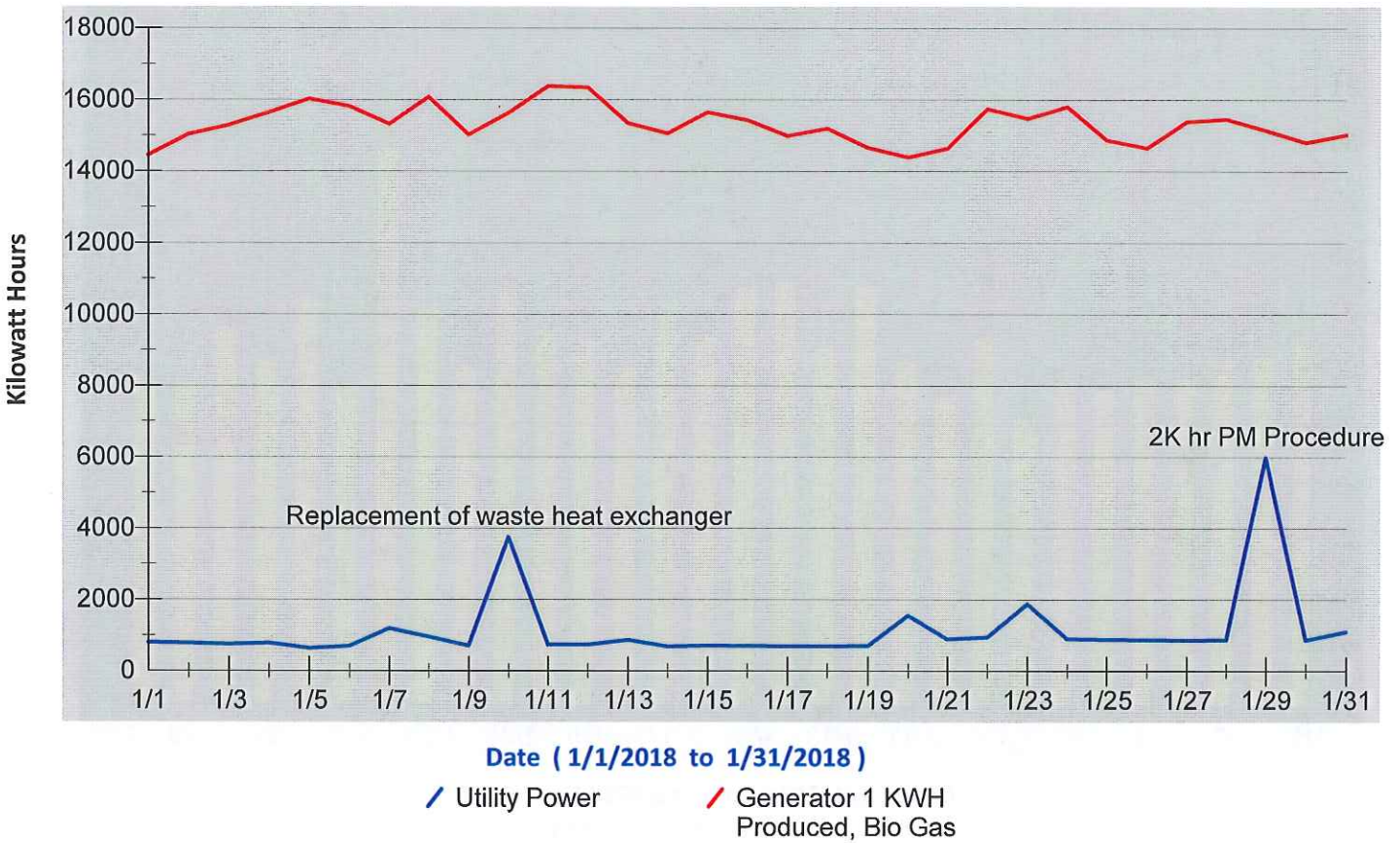


(#6) Biosolids Concentration v3

Graph #7: Biogas Production



Graph #8: Kilowatt Hours Purchased vs. Kilowatts Produced






BOARD MEMORANDUM

February 8, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager 

Subject: Performance Metric Report – January 2018

Recommendation: Accept the January 2018 Performance Metric report.

Performance Summary: The Agency’s performance in operations and maintenance activities, regulatory and environmental compliance, and public education and outreach met or exceeded our metric goals/targets. Noteworthy metrics or variances are described below.

At the beginning of the calendar year, staff reviews the Report’s metrics, definitions, and measurement targets and ranges for accuracy given operational and business changes over the prior year. For 2018, staff has made a few revisions that are shown in red text in the attached Report and briefly explained below.

Table I – Treatment/Process Metrics

January had a few rain events with the largest on January 8 that resulted in a peak influent flow of 80 MGD, and approximately 30 yards of screenings and 30 yards of grit being flushed from the sanitary sewer system, removed at the Headworks, and transported to the Redwood Landfill for disposal. Biogas production was exceptional in January, likely due to organic material being flushed from the sewer lines during the rain events, averaging 310,000 cubic feet/day and over 23 hours/day of cogeneration system runtime.

The only metric revised in this Table is increasing the Biogas Value range in Item 7 (Energy Produced), due to the increased biogas production and the equivalent natural gas procurement savings.

Table II – Employee Metrics

There were no revisions to the metrics in this Table.

Training highlights included proper use of crane/rigging/slides for operations and maintenance staff, fire extinguisher use for all staff; asset management refresher training provided by the vender, NEXGEN; classification specific internal development training; and our Technical Services Managers attended a Public Contracting Requirements and Competitive Bidding seminar.

Table III - Environmental and Regulatory Compliance Metrics

There weren't any NPDES permit exceedances in January, and staff submitted the 2017 Self-Monitoring Report to the Regional Water Board which included a status report on JPA member agency capital projects to reduce I/I and lateral pipeline replacements in each district. Table III changes for 2018 include:

- Retitling the NPDES Analyses (Item 2) metric to Regulatory Analyses, and adding biosolids and stormwater sample analyses to the definition. Staff is determining the number additional analyses for the new and blending events, and the February report will include the expanded range.
- Retitling Item 3 to Process Control Analyses, and this range will be expanded in February.
- Adding a Contract Laboratory Analyses metric (Item 4) to show how many regulatory sample analyses are performed by the Agency's contract laboratory, CalTest
- Removing the Accuracy of QA/QC tests from Quality Control Testing (Item 5)
- Updating the number of regulated businesses and food service establishments in Pollution Prevention Inspections (Item 7) and FOG Program Inspections (Item 8), respectively

Table IV - Public Outreach

There were nine odor alerts posted to the website in January, and the Agency did not receive any public odor complaints. Alerts were posted for taking primary clarifiers in and out of service, draining and cleaning the chlorine contact tanks, and for a change in biotower operations.

Public education events include staff attendance at public outreach events, school classroom and/or juggler show presentations, and Agency tours. Events over the past month are presented below with the event date and number of attendees.

Public Outreach Events

No events.

School Events – Juggler Show Presentation

Date	School	Students
1/12/18	Strawberry Point in Mill Valley	330
1/24/18	Canal Family Support Program in San Rafael	45

CMSA Tours

Date	School	Public
1/17/18	San Dominico	17
1/1/18	Marin Waldorf	16

Attachment:

- January 2018 Performance Metric Report

CMSA CY18 PERFORMANCE METRICS – January 2018

TABLE I - TREATMENT/PROCESS METRICS

Metric	Definition	Measurement	Range/Target/Goal
1) Wastewater Treated	Volume of wastewater influent treated and disposed, in million gallons (Mg)	428.6 Mg	165 – 820 Mg
2) Biosolids Reuse	Alternate Daily Cover (ADC) at the Redwood Landfill, in wet tons (wt) Fertilizer and soil amendment at land application sites, in wet tons (wt) Bio-Fertilizer production at the Lystek facility, in wet tons (wt)	497.7 wt 0 wt 177.5 wt	360 – 665 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Carbonaceous Biological Oxygen Demand (cBOD) a. tons of TSS removed; % TSS removal b. tons of organics removed (cBOD); % cBOD removal	788.2 tons; 96.8% 357 tons; 94.8%	> 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES metals from discharge to the S.F. Bay: a. % Mercury b. % Copper	96.9% Not Available	88 – 99% 84 – 98%
5) Biogas Production	Biogas generated in our anaerobic digesters, in million cubic feet (Mft ³) Natural gas (methane) equivalent of the biogas, in million cubic feet (Mft ³)	9.63 Mft ³ 6.16 Mft ³	6.0 to 9.5 Mft ³ 3.8 to 6.1 Mft ³
6) Energy Produced	Energy produced from cogeneration of generated biogas and purchased natural gas - in kilowatt hours Cogeneration system runtime on biogas, in hours (hrs.); % time during month Biogas value (natural gas cost equivalent)	474,885 kWh 705 hrs; 95.0% \$27,193	380 to 480,000 kWh 540 hrs.; 75% \$15,000 to \$30,000
7) Efficiency	The cost to operate and maintain the treatment plant per million gallons of wastewater treated, in dollars per million gallons Energy used, kilowatt hours, per million gallons treated	\$839 /Mg 1,190 kWh/Mg	\$451-\$1,830/Mg (wet - dry) 670 - 2,400 kWh/Mg

Table II – EMPLOYEE METRICS

Metric	Definition	Measurement	Target/Goal
1) Employee Training	Hours of internal training – safety, web-based, project, vendor, etc. Hours of external training – employment law, technical, regulatory, etc.	Internal = 130.5 External = 48	variable
2) Work Orders	Preventative maintenance (PM) labor hours Planned corrective maintenance (CM) labor hours; % of CM+UCM hrs. Unplanned corrective maintenance (UCM) labor hours; % of CM+PM hrs. Ratio of PM to total corrective maintenance (CM + UCM);	454 hrs 269 hrs (81.0%) 65 hrs (14.0%) 1.36	300 – 500 hrs ≥ 70% total CM hrs ≤ 30% total hours ≥ 0.45
3) Overtime Worked	Monthly hours of OT worked; Year to date hours of OT (YTD) % of normal hours worked; % Year to date (YTD)	241.5 hrs; (241.5) 2.5%; (2.5%)	< 5%

CMSA CY18 PERFORMANCE METRICS – January 2018

Table III - ENVIRONMENTAL AND REGULATORY COMPLIANCE METRICS

Metric	Definition	Measurement	Range/Target/Goal
1) Permit Exceedances	# of NPDES permit exceedances	0	0
2) Regulatory Analyses	# of analyses by the CMSA laboratory for NPDES, Stormwater , and Biosolids regulatory compliance monitoring and reporting	276	150-250
3) Process Control Analyses	# of analyses by the CMSA laboratory for process control reporting and monitoring	825	400-600
4) Contract Laboratory Analyses	# of analyses by contract laboratories for regulatory compliance reporting	37	0-50
5) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes Accuracy of QA/QC tests	148	150-300 >99%
6) Water Quality Sample Analyses	# of ammonia, coliform (total and fecal), enterococcus, and/or sulfide analyses performed for the CMSA member agencies (SSOs, etc.)	5	as-needed
7) Pollution Prevention Inspections	Inspections of industrial and commercial businesses in the Agency's pretreatment and pollution prevention programs and Novato Sanitary District's Mercury Reduction Program – 255 businesses regulated	29	variable
8) FOG Program Inspections	Inspections of food service establishments (FSEs) in the Almonte, TCSD, SD2, RVSD, SRSD, and LGVSD service areas – approx. 309 FSEs are regulated and 58 FSEs have waivers.	15	20 – 50
9) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	1	variable

Table IV- PUBLIC OUTREACH


Metric	Definition	Measurement	Target/Goal
1) Public Education Events	Attendance at public education outreach events; # of booth visitors; (YTD)	0; (0)	3,500/year
2) School Events	Participation or sponsorship in school outreach events; attendees; (YTD)	375; (375)	variable
3) Agency Tours	Tours given to students and the public; # of people, (YTD)	33; (33)	variable
4) Odor Notifications	Number of odor alerts posted to the Agency website	9	1-10
5) Odor Complaints	Number of odor complaints received from the public	0	0



BOARD MEMORANDUM

February 8, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager 

Subject: **Revised Administrative Policies and Procedures**

Recommendation: Approve the revised Administrative Policies - #9, 11, 15, 16, and 17.

Discussion: CMSA has Personnel, Financial, and Administrative Policy Manuals, with each being reviewed on a three year rotating basis. During this fiscal year, staff has prepared a schedule to review the Administrative Policies and Procedures and intend to have them revised by June. Several of these Administrative Policies have been previously approved by the Board, and over the next few months staff will propose changes to those specific policies. Five policies are ready for Board review and consideration of approval, and each policy and its noteworthy revisions are briefly summarized below.

Cost Savings Award Program (#9) – This program is designed to encourage employees to identify potential cost savings activities, and if the savings are determined to be real and are quantified, the employee or employee group will receive 10% of the annual cost savings as a monetary award. It has been in place for several years, and if not utilized over the next few years, staff may recommend its discontinuance. Revisions include reducing the savings threshold to \$2,500, removal of the merit evaluation reference, and various changes to simplify program administration.

Acceptance of Hauled Waste (#11) – CMSA accepts various hauled wastes for treatment and processing that are authorized and described in this policy. The policy also provides the administrative and operational procedures associated with receiving the materials. The only notable change is that Marin Sanitary Service can deliver food waste that it receives from outside Marin County and is processed in its transfer station.

Beneficial Use of Agency Products (#15) – Recycled water, biosolids, and biogas are produced at CMSA and are considered renewable resources. This policy provides staff with a policy statement and high level procedures for the beneficial use of the listed and other identified renewable resources. Revisions are minor.

Use of Board/Conference Room by Outside Organizations (#16) – In 2013, the Board adopted this procedure to establish the criteria and administrative procedures for use of the Board room. Organizations that are affiliated with the water and wastewater industry as well as other

governmental organizations may be eligible to use the Board room after CMSA's regular business hours. Since this procedure's adoption, staff has not received a request to use the Board room. Revisions are minor.

Filming and Photographing on Agency Property (#17) – Prior to the development and adoption of this policy, a local TV production company, Indigo Films, had filmed on CMSA property a few times. Since then, staff has not received any requests for filming or photographing on-site. The policy incorporates the administrative procedures developed during the prior site filming requests, as well as waiver and indemnification forms. Revisions include minor editing and moving the insurance/indemnification section.

Attachments:

- 1) Revised Administrative Policy #9 – Cost Savings Award Program
- 2) Revised Administrative Policy #11 – Acceptance of Hauled Wastes
- 3) Revised Administrative Policy #15 – Beneficial Use of Agency Products
- 4) Revised Administrative Policy #16 – Use of Board/Conference Room by Outside Organizations
- 5) Revised Administrative Policy #17– Filming and Photographing on Agency Property

POLICY/PROCEDURE #:	9
SECTION:	ADMINISTRATIVE – GENERAL
SUBJECT:	Cost Savings Award Program
DATE:	04/30/2014 <u>2/13/2018</u> (Board Approved)

PURPOSE

~~To establish a cost savings award program (the Program) t~~To encourage and support Agency employees' efforts in identifying and implementing ways to continuously improve CMSA operations and business practices. The Agency will support this creativity and innovation by sharing a portion of the proven savings with the ~~staff member~~employees(s) who developed the cost saving proposal.

SCOPE

The costs saving categories are energy reduction, chemical cost reduction, and labor savings. Other categories may be considered on a case-by-case basis, as determined by the employee's Program Administrator and/or department manager. Initially, proposals must have a projected savings of \$5,000-2,500 or greater to be considered for implementation. ~~Proposals in other categories, or that do not meet the \$5,000 threshold, will be considered in the individual employee's merit evaluation.~~

PROCEDURES

- I. Administration
 - A. The review and implementation procedures outlined in this Policy, and the associated forms, may be revised as necessary based on the program's effectiveness.
 - B. This procedure supplements, and is to be used in conjunction with, the following forms:
 - 1) Proposal Application
 - 2) Proposal Evaluation
 - 3) Program InstructionsForms and Instructions can be found on the Agency's shared drive:
HS:\Forms\Administrative\Cost Saving Award Program\Lib-Forms and Templates/Staff Forms
 - C. The ~~Program Administrator (designated by the General Manager)~~department



manager will maintain a file of all proposals with their outcomes, prepare newsletter articles for approved proposals, coordinate evaluating committee meetings, and manage the proposal process from initiation to award distribution.

- D. ~~The voluntary~~An evaluating committee/team will evaluate and recommend, as appropriate, proposals which have been screened by the employee's departmental supervisor and manager. The committee will be ~~composed of members representing Environmental Services, Operations & Maintenance, and Administration or Engineering, an existing standing Agency committee/team that has purview over the cost savings activity.~~
- E. ~~The committee will meet as determined by the Program Administrator. Each committee member will have an alternate, and department managers will serve on the committee as primary or alternate until the positions are filled, or as needed. Committee members must recuse themselves if they are on a proposal team. The initial term of committee membership is two years.~~
- F. ~~Individual~~Department managers will perform the formal screening review of proposals after the pre-screening by the proposer(s).

II. Eligibility

- A. All Agency employees except senior managers are eligible to participate in the program.

III. Proposals

- A. Individuals or teams may propose cost savings measures; teams are encouraged since the analysis, implementation, and measurement of proposals and outcomes may involve multiple departments.
- B. Proposers are responsible for performing a pre-screening of ideas, completing the application form, developing the implementation plan, and gathering data for measuring and analyzing outcomes.

IV. Evaluation Process

- A. The following are the levels of proposal review:
 - 1) Each proposing individual or group will complete the information on Section I of the Application form and submit it to the appropriate supervisor and/or department manager.
 - 2) Supervisor and/or department manager will perform the formal screening within two weeks of receiving the form.



- 3) For proposals that pass the screening process, the proposer(s) will complete Section II and submit it to the **Program Administrator**~~department manager~~, who will coordinate the Evaluating Committee's review and meeting schedule.
- 4) The **Evaluating**-Committee will review completed proposal application forms and recommend whether or not to proceed to implementation.
- 5) The Committee may request a presentation by the proposer(s) for complex proposals.
- 6) The Committee will communicate the results of its review within two weeks of its completion; **Program Administrator will schedule appropriate meetings.**
- 7) **The Engineering and Finance Departments**Technical Services and Finance staff may assist with technical aspects of this review, as needed.
- 8) If a majority of the Evaluation Committee (three or more members) recommends the proposal for implementation, the **Program Manager**~~department manager~~ will submit a completed Evaluation Form to the General Manager for final determination.

V. Implementation Process

- A. Once a proposal has been reviewed and authorized by the General Manger, the proposer(s) will coordinate with the appropriate department manager(s) to implement the proposal on a trial basis.
- B. In general, the proposing staff member(s) will make up the implementation team; if help from additional staff members is needed, that will be coordinated by the department manager(s).
- C. Proposers will gather, or coordinate gathering of, all pertinent data to evaluate the proposal's practicability and to verify cost savings.

VI. Determination of Cost Savings

- A. Savings will be calculated according to the following steps:
 - 1) **Project**Department Manager~~manager~~(s) will submit a final report to the Evaluation Committee 30 days after the end of the pilot test.~~The Project Manager(s)and~~ may be requested to present the findings to the Evaluation Committee.
 - 2) Final Report will include what measure(s) were used to calculate baseline costs and cost savings.
 - 3) If savings will accrue over time, the appropriate time period for



determining savings will be included with the proposal.

- 4) ~~Project Team~~The proposer(s) will coordinate the data gathering to support the cost savings calculations.
- 5) ~~Finance Department and/or the Engineering Department~~Appropriate staff will review the proposed cost savings calculations for accuracy.
- 6) Evaluation Committee will review the final report and make the following recommendations to the General Manager:
 - a. Amount of cost-savings award ~~to Project Team~~
 - b. Full implementation of proposal by Agency

VII. Award Amounts

- A. Awards for successful proposals will be based on the verified cost savings calculated as described above.
- B. Award will be received as monetary award.
- C. Monetary awards will be made by the Agency as a single, one-time payment for each successful proposal.
- D. Monetary award will be ten percent (10%) of the fixed amount of savings, up to \$12,000 for individuals or \$25,000 for team efforts.
- E. For team proposals, the team will determine award allocation amongst team members as part of the original proposal.



POLICY/PROCEDURE #:	11
SECTION:	Administrative – General
SUBJECT:	Acceptance of Hauled Wastes
DATE:	05/10/201602/13/2018 (Board Approved)

Purpose

The purpose of this Policy is to identify the types of hauled wastes that the Agency accepts for treatment and processing, and to establish the procedures for receiving the waste materials.

General Procedures

I. Types of Wastes Accepted

Portable Toilet: Wastes from portable toilets and similar facilities that are generated and collected in Marin County are accepted at the Agency’s septage receiving facility.

Septic Tank: Wastes from septic tanks and similar facilities that are generated and collected in Marin County are accepted at the Agency’s septage receiving facility.

Recreational Vehicles: Waste from recreational vehicle (RV and motorhome) toilets, sinks, and showers are accepted at the Agency’s septage receiving facility.

Grease Removal Device Waste: Fats, Oils, and Grease (FOG) from food service establishments that is transported through Marin County is accepted at the Agency’s ~~Food Waste/FOG~~Organic Waste Receiving receiving facility (OWRF).

Food Waste: Commercial food waste collected from restaurants, schools, and other similar type businesses ~~within Marin County~~, and transported to CMSA by Marin Sanitary Service are accepted at the Agency’s ~~FOG/Food Waste receiving facility~~OWRF.

Liquid Organic Wastes: Liquid wastes from food and beverage manufacturing and/or production facilities are accepted at the Agency’s ~~FOG/Food Waste~~OWRF receiving facility.

Vacuum truck (Vector) Loads: Debris and material removed from a sanitary sewer collection system by a vacuum truck or similar equipment are accepted at the Agency’s vacuum truck receiving facility. See Section VIII below. The other Sections of this document do not apply to vacuum truck loads

No hauled industrial wastes are accepted at CMSA. This specifically includes, but is not limited to, wastes from auto washing or repair oil/water separators, and portable toilet loads contaminated with industrial waste. Wastes from septic tanks serving commercial or industrial facilities are accepted only with prior written approval from the General



Manager or designee

II. Fees and Charges

All fees and charges, except for the food waste tipping fee, are specified in the CMSA Fee Ordinance. Specific charges are adjusted annually based on the current regional EDU service charge rate ~~as outlined in the Ordinance~~.

A monitoring fee ~~of \$15.00~~ is assessed for each septage waste load discharged at the wastewater treatment plant. This "per load" fee recovers the Agency's expenses for collecting and analyzing random samples and for other monitoring activities.

The food waste tipping fee is specified in the Food Waste Processing and Disposal Agreement between CMSA and Marin Sanitary Service.

III. Marin County Permit / CMSA Authorized Waste Hauler List

Any truck used to deliver and discharge portable toilet and septic tank hauled wastes at CMSA must have a current permit from Marin County Environmental Health Services.

Each hauler must be on the CMSA Authorized Waste Hauler List prior to discharge of any loads. A hauler will be placed on the list upon request, contingent on verification of Marin County permit(s). A hauler will be removed from the list for serious or repeated violations of CMSA policies, or if their Marin County permit(s) expires.

CMSA shall not receive food waste, FOG, or liquid wastes transported to the Agency in a septage or industrial waste hauling vehicle, unless it can be shown, to the Agency's satisfaction, that the vehicle's storage tank has been properly cleaned to remove all septage and/or similar materials.

IV. Receiving Facilities Hours of Operation

Hauled waste loads are accepted Monday through Friday, during regular business hours, CMSA holidays excluded. ~~CMSA holidays are New Year's Day, Martin Luther King Day, Presidents Day, Memorial Day, Independence Day (July 4), Labor Day, Veterans Day (November 11), Thanksgiving Day and the day after Thanksgiving, and Christmas Day.~~ Waste receiving at any other time is only by advance arrangement.

During rainy weather, haulers should contact CMSA in advance to determine if waste loads are being accepted at the septage receiving facilities. Hauled waste loads are generally not accepted at the septage receiving station during rain events that cause wastewater blending.



V. Delivery Documentation

Hauled waste vehicle drivers must complete a Trucked Waste Record form for each load delivered to CMSA, including the load volume, in gallons. Completed forms shall be left in the administration office before they are granted access to the waste receiving facilities. Each month haulers will be invoiced for disposal fees, based on the information in their completed load forms.

FOG and liquid waste delivery volumes ~~will be verified~~ are measured by volumetric or flow measuring instruments at the receiving station. If there is a discrepancy between the measured volume and the volume stated on the Trucked Waste Record form, facility measurements will be used for invoicing.

VI. Discharge to Manholes Prohibited

Hauled wastes may be discharged only at the CMSA wastewater treatment plant site. Discharge to sanitary sewer manholes in the CMSA service area is prohibited without prior written approval from the specific sanitary district--Ross Valley Sanitary District, San Rafael Sanitation District, or Sanitary District #2.

VII. Discharge procedures

Haulers shall follow the procedures below for discharging each waste load.

- A. All trucks must stop at the designated location on the Agency entrance road, enter the CMSA Administration Building, and complete a Trucked Waste Record form. CMSA office staff will open the facility security gate once the form has been submitted, to allow trucks to proceed through the facility security gate, and follow the yellow road striping to the septage receiving station or the white road striping to the FOG/Food Waste receiving facility.
- B. The delivery vehicle's discharge hose must be able to connect to the 4" diameter female cam lock fitting at either receiving station. Drivers must connect their discharge hose to the fitting.
- C. The hauler shall clean up the receiving station prior to leaving CMSA. At either receiving station, a hose is provided to wash down and clean up the station. Drivers should notify CMSA Operations or Administrative staff prior to leaving the Agency if the receiving station is excessively dirty upon their arrival or if there are other problems experienced during the disposal and clean-up activities.
- D. CMSA staff will collect random samples from waste loads, or if there is an indication of possible contamination with industrial waste. Sample collection is at the sole



discretion of CMSA staff. The hauler shall assist CMSA staff in obtaining a representative sample of the waste load.

VIII. Vacuum Truck Loads

CMSA shall only accept vacuum truck loads that are generated by our member agencies that own and operate the wastewater collection systems in central Marin, or by private haulers working directly for CMSA. The JPA member agencies are:

- San Rafael Sanitation District (SRSD)
- Sanitary District #2 of Marin County (SD#2)
- Ross Valley Sanitary District (RVSD)

Private contractors working on behalf of a JPA member agency will be granted access to the CMSA facilities to dispose of their loads, after CMSA has received notification from the member agency contracting for their services.

CMSA will not accept vacuum loads from outside its service area, or loads from privately owned sewer lines within the service area. This is due to the nature of the load contents, potential downstream treatment process impacts, and the labor associated with cleaning the vacuum truck receiving facility after each load.



POLICY/PROCEDURE #:	15
SECTION:	ADMINISTRATIVE – GENERAL
SUBJECT:	Beneficial Use of Agency Products
DATE:	10/08/201302/13/2018 (Board approved)

POLICY

CMSA is committed to pursuing the beneficial use of Agency products by identifying resources that generate value for the Agency and its customers, improve environmental quality, and contribute to the local economy.

PROCEDURE

1. CMSA will pursue beneficial use options for key Agency products such as reclaimed water, biosolids, and biogas.
2. The Agency recognizes that as technology advances there may be opportunities to improve the quality of existing products, and recover additional products from the wastewater treatment process for beneficial uses. CMSA will evaluate appropriate new and emerging technologies.
3. CMSA will ~~make a concerted effort to~~ highlight ~~potential~~ benefits of Agency product reuse through public education and outreach.
4. When feasible, the Agency will seek out partnerships with local ~~governments~~ agencies and/or private entities on the distribution and beneficial reuse of Agency products.



POLICY #:	16
SECTION:	ADMINISTRATIVE - GENERAL
SUBJECT:	Use of Board/Conference Room by Outside Organizations
DATE:	09/10/1302/13/2018 (Board approved)

PURPOSE

This procedure is to outline the criteria and process for extending the use of the CMSA Board/Conference Room during non-business hours to outside organizations who are affiliated with the water or wastewater industry.

PROCEDURE

1. Public or non-profit organizations eligible for consideration need to be associated with the water and wastewater industry. These may include organizations where the Agency is a member or a sponsor. Other governmental entities may also be eligible to use the Agency Boardroom.
2. Requests from outside organizations for use of the Board/Conference Room are referred by Staff to the Administrative Assistant (AA). The AA then contacts the group and gathers the necessary information:
 - a. Group name
 - b. Coordinator's name and complete contact information
 - c. Description of the meeting topic, projected attendance, and any special needs or requirements
 - d. Desired date(s) and time(s)
 - e. ~~Insurance (to be defined)~~
3. The AA enters the above information in a spreadsheet in the Management Shared file:Agency network H:\Management Shared\Board Room Outside Meetings\BROutsideMeetings.xls
4. The AA determines if the group meets the general use criteria, and if the days and times are compatible with the Agency schedule, then reviews the request with the GM General Manager (GM).
5. If approved by the GM, the AA then:
 - a. Contacts the group coordinator to confirm the meeting details
 - b. Sends a confirmation email or letter to the group coordinator
 - c. Enters the meeting dates on the Agency google-calendar



- d. Notifies OPS-operations staff of the meeting schedule, including the hours the Administrative building lights need to be kept on, and the lobby door and Andersen Drive access gate kept open.
 - e. Reminds OPS-operations staff the day of the meeting, at the start of the shift during which time the meeting is to be held.
6. If the GM determines that the group does not qualify for room use, and if granting of the approval is in question, the GM shall bring the request to the Board Chair for his/her advice.
7. If the group's request is denied, the AA will contact the group coordinator with an explanation of why the meeting was not determined as appropriate for CMSA Board/Conference Room use.



POLICY #:	17
SECTION:	ADMINISTRATIVE - GENERAL
SUBJECT:	Filming and Photographing on Agency Property
DATE:	11/10/2015 02/13/2018 (Board approved)

POLICY

The Agency will allow the use of Agency facilities and grounds for the filming or photographing ~~(production)~~ for appropriate projects, at the discretion of the General Manager or designee. The production activities must be performed in a safe manner, and not disrupt Agency work, operations, or other related activities.

~~The CMSA waiver and indemnification forms, along with insurance documents, must be submitted and approved prior to the production company being allowed on site. Private entities must provide an approved San Rafael Film Business License, and prepay anticipated Agency expenses associated with on-site production activities.~~

PROCEDURE

I. Filming and Photographing Request

- A. Requests from outside organizations for use of the Agency facility or grounds are referred by staff to the Administrative Assistant (AA). The AA then contacts the requestor and gathers the basic information below:
 1. Production company, entity, agency, or firm name
 2. Coordinator's name and complete contact information
 3. Description of the project, number of people anticipated to be on site, and any special needs or requirements
 4. Desired date(s) and time(s); and duration of the project
- B. The AA verifies the company/firm identity, then forwards the request with the above information to the General Manager (GM) or designee for consideration.
- C. If the project is not approved by the GM, the AA will contact the requestor with a brief description of the reason.

II. Indemnification and Insurance

~~The CMSA waiver and indemnification forms, along with insurance documents, must be submitted and approved prior to the production company being allowed on site. Private entities must provide an approved San Rafael Film Business License, and prepay any anticipated Agency expenses associated with on-site production activities.~~



II.III. Prior to Production Day(s)

If the project has been approved by the GM, the AA will perform the following tasks:

1. Contact the project representative to discuss, and request a written confirmation, of the production details (dates, times, number of people, contact information, etc.).
2. Notify the Executive Team of the upcoming production schedule, who will ~~decide if staff administrative activities and/or supervision are required during the production activity. If required, the prepayment amount is determined~~determine appropriate administrative activities, required supervision, and prepayment amount.
3. Send a confirmation email or letter to the contact person, including an invoice if payment is required, requesting the following documents be supplied:
 - a. City of San Rafael Film Business License
 - b. Signed waiver form
 - c. Signed indemnification form
 - d. Insurance documentation (General Liability, Automobile Liability, and Worker's Compensation)
 - e. ~~Staff~~CMSA staff supervision payment ~~(if required)~~
4. Ensure that the above documents are received and approved prior to the production date.
5. Enter the production date(s) on the Agency calendar.
6. Forward the fee payment to ~~the Finance Department~~, and file the submitted documents.

III.IV. On-site Coordination and Supervision

- A. The Treatment Plant Manager or designee will perform a general safety awareness training for film/photography personnel before on-site production activities begin.
- B. A designated staff member will monitor production activities, if required.
- C. Any problems or conflicts that arise out of the production activities will be brought to the attention of the General Manger.

IV. Fee Waiver



The General Manager may waive the administrative and/or staff supervisory fees for public agencies if their production activities are for educational purposes, benefits the water/wastewater industry, or is for another worthwhile cause.

Attachments

- CMSA Waiver form
- CMSA Indemnification form





BOARD MEMORANDUM

February 8, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager 

Subject: 2018 National Pollutant Discharge Elimination System Permit Presentation

Recommendation: Informational; provide direction the General Manager, as appropriate.

Summary: The San Francisco Bay Regional Water Quality Control Board (RWB) approved reissuing the Agency's National Pollutant Discharge Elimination System (NPDES) permit at its January 10, 2018 meeting. The permit becomes effective on March 1, 2018, and has a five-year term. Ms. Monica Oakley, the Agency's regulatory consultant, will attend the February 13 Board meeting and give an informational presentation on the NPDES permit reissuance process, and the new and changed provisions in the reissued permit. Ms. Oakley's presentation is attached.

Details: Staff and Ms. Oakley believe the new permit is reasonable and that the Agency can comply with its various sampling, monitoring, and reporting requirements. An important provision in the permit is that the treatment plant is authorized to continue wastewater blending during wet weather events for this permit term, without a requirement to perform planning, design, or construction of new treatment infrastructure to reduce the frequency and/or volume of blending events.

The RWB authorized blending by making a determination that the only feasible alternative to reduce blending is to require CMSA's JPA member agencies to implement sanitary sewer system infiltration/inflow (I/I) reduction activities over the permit term. Each JPA agency that owns and operates a wastewater collection system is listed as a co-permittee and has individual I/I project requirements. Ross Valley Sanitary District and San Rafael Sanitation District have decided to appeal the permit to the State Water Resources Control Board, and within 90 days of their appeal submittal we will learn if the State Board will either hear or dismiss it.

CMSA is required to perform a few tasks to reduce blending as shown in the attached compliance table from the permit. These involve replacing influent flow meters to improve flow monitoring, reporting on the installation work in the Agency's annual Self-Monitoring Report, and continuing to report blending events on the Agency's website.

Attachments:

- 1) Table 6 – CMSA Tasks to Reduce Blending
- 2) 2018 NPDES Permit Renewal Presentation

- b. CMSA Tasks to Reduce Blending.** CMSA shall implement the following tasks to minimize wet weather bypasses and reduce blending in accordance with the following time schedule:

Table 6. Central Marin Sanitation Agency Tasks to Reduce Blending

Task	Compliance Date
1. Replace Collection System Flow Meter at San Quentin Prison CMSA shall replace the 12-inch magnetic flow meter that measures flow from San Quentin Prison and the San Quentin Village Sewer Maintenance District to obtain more accurate inflow/infiltration flows from these tributary agencies.	June 30, 2018
2. Coordinate with Collection System Agencies in the Replacement of Flow Meter for Sanitary District No. 2 of Marin County CMSA shall purchase a new 12-inch flow meter and coordinate with Sanitary District No.1 of Marin County and Sanitary District No. 2 of Marin County in the installation of the new meter to more accurately measure inflow/infiltration flows from Sanitary District No.2 of Marin County.	December 1, 2019
3. Replace Collection System Flow Meter for the San Rafael Sanitation District CMSA shall replace the ultrasonic flow meter in the 45-inch interceptor that measures flow from the San Rafael Sanitation District collection system to obtain more accurate inflow/infiltration flows from this tributary agency.	June 30, 2018
4. Report Progress on Flow Meter Installations CMSA shall report on the progress of each of the flow meter installations described above in tasks 1, 2, and 3, and describe the status and schedule.	Annually, with Annual Self-Monitoring Report due February 1
5. Summarize Effect of New Flow Meters After data have been collected from the new meters to measure inflow/infiltration flows from the tributary agencies, CMSA shall analyze the data and describe how the new meters are improving CMSA's understanding of inflow/infiltration flows from the tributary agencies.	With Report of Waste Discharge due March 1, 2022
6. Implement Public Notification Protocol CMSA shall continue to implement its August 30, 2012, <i>Public Notification Protocol</i> , as updated, to alert the public of blending events.	January 1, 2018
7. Prepare Utility Analysis If seeking to continue bypassing peak wet weather flows around the secondary treatment units based on 40 C.F.R. 122.41(m)(4)(i)(A)-(C), CMSA shall complete a utility analysis that contains all elements described in part 1 of the No Feasible Alternatives Analysis Process in U.S. EPA's proposed peak wet weather policy (<i>National Pollutant Discharge Elimination System Permit Requirements for Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems</i> , Fed. Reg. Vol. 70, No. 245, pages 76013-76018, December 22, 2005) and demonstrate that CMSA has met the requirements for Regional Water Board approval pursuant to Attachment D section I.G.3. The submittal shall list and describe all feasible actions CMSA could implement during the next permit term. It shall also list and describe all feasible actions the collection system agencies could implement as determined and provided by the collection system agencies.	With Report of Waste Discharge due March 1, 2022

- c. Copper Action Plan.** CMSA shall implement pretreatment, source control, and pollution prevention for copper in accordance with the following tasks and time schedule:

Table 7. Copper Action Plan

Task	Compliance Date
1. Implement Copper Control Program Continue implementing the existing program described in CMSA's Pollution Prevention Report dated February 24, 2017, to reduce identified copper sources, including, as applicable, taking the following actions:	Implementation shall be ongoing



NPDES Permit Renewal

Summary of Renewal Process and New Requirements

Monica Oakley

February 13, 2018

NPDES Permit System

- NPDES = National Pollutant Discharge Elimination System
- Federal and State permit
- Issued by the Regional Water Quality Control Board (a state agency)
- Federal authority is delegated to the state by the U.S. Environmental Protection Agency
- NPDES Permit lasts for five years

Permit Dates

1. Renewal Application Submitted January 31, 2017
2. Tentative Order (Public Review) September 22, 2017
3. Adopted January 10, 2018
4. Effective March 1, 2018
5. Expires February 28, 2023



Numeric Effluent Limits

- Two types of numeric effluent limits
- First, conventional pollutants:
 - Biochemical oxygen demand (BOD)
 - Total suspended solids (TSS)
 - Oil & grease
 - pH
 - Chlorine residual
 - Bacteria indicators
- These limits are the same as the last permit
- Compliance is expected



Numeric Effluent Limits, continued

- Second type of effluent limits are for toxic pollutants:
 - Copper
 - Cyanide
 - Dioxin TEQ
 - Total ammonia
- Same constituents as last permit
- Numeric limits are slightly different
- Compliance is expected



Federal Blending Policy

- Prior to 2005, blending was commonplace in US and had no special status
- December 2005 – USEPA issued official *draft* blending policy based on negotiated approach
- Final rule never promulgated
- USEPA Region 9 and Regional Water Board still using draft blending policy to write permits
- Blending is now being classified as a “bypass”
- “Bypasses” trigger special requirements



Blending Requirements in Permit: Collection System Agencies

- Collection system agencies added as co-permittees in NPDES permit – this is NEW
 - Sanitary District No. 1 (RSVD)
 - San Rafael Sanitation District (SRSD)
 - Sanitary District No. 2 (Corte Madera)
- San Quentin agencies deemed too small to include
- Significant requirements for rehabilitation and replacement of sewer lines, plus other new liabilities
- Private sewer lateral programs (SRSD and SD#2)



Blending Requirements in Permit: CMSA

- Replace collection system flow meters and report progress
- Summarize effect of new flow meters
- Continue public notification of blending events
- Prepare No-Feasible Alternatives Analysis (Utility Analysis)
 - According to *draft* USEPA blending policy
 - Include list of future feasible actions for collection agencies
 - Submit with renewal application (in 4 years)



Other Notable Changes to Permit

- Cyanide influent concentration monitoring was added
- Monthly wastewater effluent standard observations were removed
- Total suspended solids sampling was reduced from 3 times per week to twice per week
- Oil and Grease sampling was reduced from 4 times per year to 2 times per year

Regional Water Board Hearing Jan 10

- Regional Water Board staff gave presentation on permit
- Lots of engagement between Board members and staff (6 out of 9 Board members present)
- Several commenters:
 - CMSA
 - SRSD
 - RVSD
 - USEPA
- Board members acknowledged additional liability for collection agencies but only granted two changes to permit:
 - Consolidated collection agency requirements so only annual deadlines
 - Allowed alternative geography for pipe repair or replacement, if same length overall



Next Steps

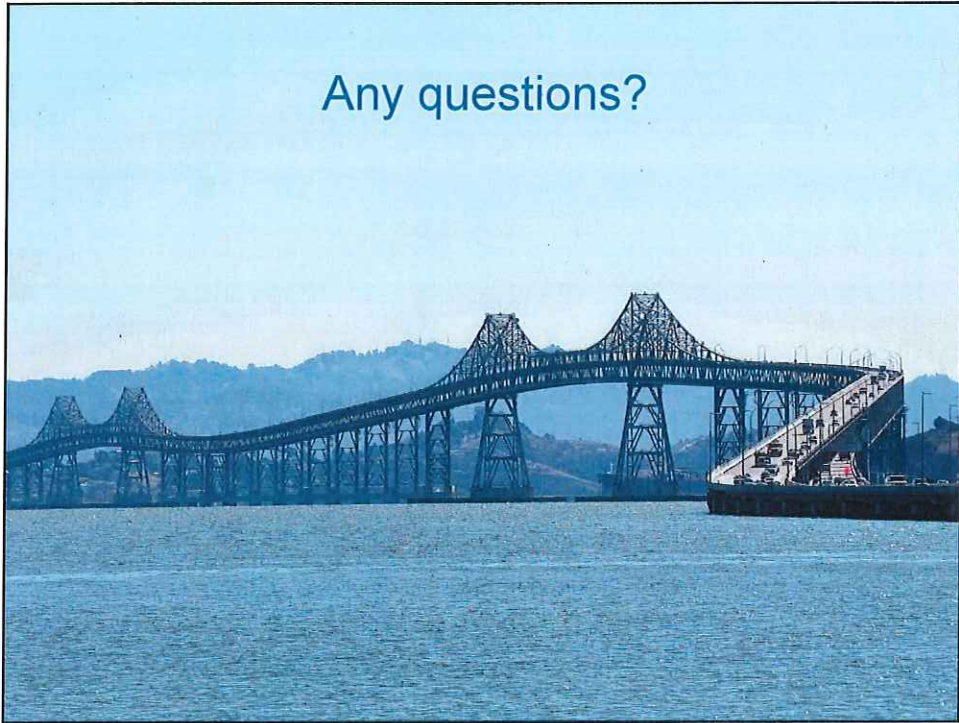
- Get ready for implementation of new permit
- Track next steps of collection agency permit appeal process
- Continue good relationship with Regional Water Board staff during term of permit

The NPDES Permit Renewal Was a Team Effort

- Jason Dow
- Chris Finton
- Mark Koekemoer
- Monica Oakley



Any questions?





BOARD MEMORANDUM

February 8, 2018

To: CMSA Commissioners and Alternates

From: CMSA Finance Committee
Jason Dow, General Manager JD

Subject: Proposed 5-Year Revenue Plan

Recommendation: Discuss the proposed 5-year revenue plan, and provide direction to staff and the Finance Committee.

Discussion: At the January 9, 2018 meeting, the Board’s Finance Committee and staff reported on their constructive work since October 2017 in drafting guiding principles for the Agency’s next 5-year revenue plan and evaluating operating and capital funding alternatives, and presented the preliminary plan for the Board’s review, discussion, and feedback. In the following table is the preliminary plan that assumed a \$15.3 million debt issuance in FY 20, a 30-year debt issuance term, with an interest rate of 3.6%.

	Adopted FY18 Budget	FY19	FY20	FY21	FY22	FY23
Average EDU Rate	\$331	\$344	\$356	\$370	\$384	\$397
Increase From Prior Year		3.7%	3.7%	3.8%	3.9%	3.3%

After discussing the preliminary plan, the Board accepted the proposed guiding principles and provided direction to construct a revenue plan alternative with a level annual funding increase and a 20- or 25-year debt issuance term. On January 29, the Committee met to review several additional revenue plan alternatives, select an alternative that met the Board’s revenue plan criteria, and prepare a recommendation for presentation at the February 13 meeting. The Committee proposes:

- 1) Approve the following revisions to the revenue plan guiding principles. Revisions are shown in red text.
 - Use a 5-year revenue planning period based on a 10-year rolling financial forecast
 - Balance the operating budget over the planning period
 - Maintain the operating reserve at 25% of the annual operating expenses

- Ensure adequate funding for the capital improvement program during the planning period
- Keep the JPA managers briefed on the Finance Committee’s work
- Issue debt to fund the larger CIP projects during the planning period
- Target a CMSA average EDU rate increase of less than 4% per year
- Utilize pay-go funding for the non-debt funded portion of the CIP, **to the reasonable extent possible**
- Maintain a CIP reserve at an amount equal to the approximate annual average value of the 10-year CIP

2) Incorporate the revenue plan guiding principles into Agency Financial Policy #553 – Financial Planning: Debt Financing and Management

3) Approve the proposed 5-year revenue plan shown in the table below. The plan is based on issuing debt in FY 20 and FY 23, totaling about \$19 million, for a 20-year term.

	Adopted FY18 Budget	FY19	FY20	FY21	FY22	FY23
Average EDU Rate	\$331	\$342.6	\$354.6	\$367.0	\$379.9	\$393.1
Increase From Prior Year		3.5%	3.5%	3.5%	3.5%	3.5%
Revenue increase		555,000	574,000	594,000	615,000	637,000

Plan revenues will be used to balance the annual operating budget, maintain the operating reserve at 25% of the annual operating expense, fund the pay-go component of the CIP, and pay the new debt service. Most of the revenue increase will be used for debt service.

It is important to note that CMSA invoices the JPA agencies quarterly for its regional sewer service charge which is allocated to each agency using a 3-year average flow/strength calculation (cost of service principle) which varies each year. Additionally, CMSA invoices the JPA agencies twice per year for debt service and coverage that is allocated using a set percentage to each agency per an amendment to the Payment for Treatment Services Agreement. For the above reasons, each fiscal year, a JPA agency’s total expense for CMSA may be lower or greater than 3.5% average EDU figure.



BOARD MEMORANDUM

February 8, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: Administrative Policy #68 - Employee Compensation and Benefit Approval Process

Recommendation: Approve Administrative Policy #68 - *Employee Compensation and Benefit Approval Process*, and provide direction to the General Manager, as appropriate.

Summary: At the January 2018 meeting, the Board considered its Finance committee's recommendation to use a multi-step approval process for Agency employee compensation and/or benefit adjustments. Direction was provided to staff to integrate the process discussed at the meeting into existing Personnel Policies or a new Administrative Policy. After reviewing the Agency's Personnel Policies associated with compensation administration and employee benefits, staff determined drafting a new Administrative Policy was appropriate as the process would be in a stand-alone policy instead of several policies. The new Administrative Policy #68 is attached for Board review, discussion, and consideration of approval.

Background: Board consideration of employee compensation and benefit adjustments can take a few different forms. Adjustments are usually associated with infrequent labor relations negotiations with the Agency's represented and unrepresented employee groups, periodic personnel policy updates to comply with changes in state employment laws, and occasionally increasing an unrepresented job classification's salary range before a recruitment commences. Labor relations adjustments are negotiated with the employee groups, discussed and deliberated in closed session meetings, and the accepted adjustments are approved during a regular Board meeting. All other adjustments are brought to the Board at a regular meeting for presentation, discussion, and direction.

Late last year, the Board concluded labor relations negotiations with SEIU Local 1021 that resulted in a Board proposal being accepted by the SEIU membership and a Letter of Understanding to the Agency's Collective Bargaining Agreement being approved by the Board. During a review of the Letter of Understanding agenda item with Chair Diane Furst, she asked if the Board had ever considered a two-step review and approval process for employee compensation and benefit adjustments, similar to a practice used by the Town of Corte Madera to enhance the transparency of the process. I explained the above mentioned process used historically by the Board, and said I would include the two-step process to an upcoming Finance Committee meeting agenda.

At its November 21, 2017 meeting, the Finance Committee discussed the two-step process idea, concluded it would be a good practice for the Agency, and decided to recommend the Board consider adopting it. At its January 9 meeting, the Board discussed and accepted the Finance Committee's recommendation and staff's idea to incorporate it into an Agency policy.

Attachment:

- Administrative Policy #68 - *Employee Compensation and Benefit Approval Process*

POLICY/PROCEDURE#	68
SECTION:	HUMAN RESOURCES
SUBJECT:	Employee Compensation and Benefit Approval Process
DATE:	02/13/2018

POLICY

To enhance transparency and the opportunity for public engagement, the CMSA Board of Commissioners will utilize a multi-step process when considering Agency employee compensation and benefits adjustments.

PROCEDURE

- I. Any adjustments to employee compensation or benefits shall be approved by the CMSA Board of Commissioners (Board) at a public meeting, in open session in accordance with the Ralph M. Brown Act.
- II. When considering compensation and benefit adjustments for a job classification(s), an employee, or for an employee group, the Board will use the following process:
 - a. Staff will present the adjustment at a regular Board meeting, for Board review and discussion, public comment, and Board direction.
 - b. At a subsequent Board meeting, after Board comments and direction from the prior meeting have been addressed by staff, the Board will consider approving the adjustment.
- III. For cases where the adjustment is minor, non-substantive, or a housekeeping matter, as determined by the General Manager and approved by the Board Chair, the Board will consider the adjustment at a regular Board meeting and take action, as appropriate.
- IV. Generally, adjustments will not be considered by the Board at special or emergency meetings due to the reduced public notification period associated with each type of meeting.





BOARD MEMORANDUM

February 8, 2018

To: CMSA Commissioners and Alternates
From: Jason Dow, General Manager
Subject: San Francisco Bay Nutrient Watershed Permit - Status Report

Recommendation: Approve the Agency participating through BACWA on the second San Francisco Bay Nutrient Watershed Permit.

Discussion: The San Francisco Regional Water Board (RWB) adopted the first 5-year Mercury Watershed Permit (Permit) for the San Francisco Bay region in April 2014, and is collaboratively working with the Bay Area Clean Water Agencies (BACWA) to develop a scope for the second Permit that is anticipated to be adopted in Spring 2019. On behalf of the S.F. Bay region's thirty seven wastewater dischargers, BACWA has administered and managed the first Permit's studies and evaluations, and by July 1, 2108, BACWA will submit the final reports on the Potential Nutrient Discharge Reduction by Treatment Optimization, Side-stream Treatment, and Treatment Upgrades.

During implementation of the Permit's Nutrient Management Strategy, comprised of receiving water studies and evaluations, the RWB and BACWA learned that additional scientific investigations are needed to better understand nutrient loading and its potential impacts to the S.F. Bay as a whole and its five sub-embayments. The focus of the second Permit, as detailed in the attached letter from RWB Executive Officer Bruce Wolfe, will be continued treatment plant nutrient monitoring and reporting, additional funding for the receiving water studies and evaluations, and studies to assess the feasibility of reducing nutrients through other methods such as wetland enhancement and recycled water irrigation. The RWB anticipates the third Permit, in 2024, may include nutrient discharge limits for some treatment facilities based on the results of a Nutrient Management Strategy.

BACWA's members have funded the first Permit's requirements through a Nutrient Surcharge on their respective annual BACWA membership invoices. CMSA's surcharge for our contribution has been \$15,505, much less than if we were to perform our own independent studies to comply with the Permit requirements. Staff recommends that CMSA continue to be represented by BACWA for the second Permit, and increase our annual Nutrient Surcharge contribution to meet the requirements in the second Permit, currently estimated to be \$32,948 per year.

Potential Nutrient Reduction at CMSA: BACWA hired HDR Engineering to prepare a Nutrient Reduction Study for each of its member agencies, to evaluate nutrient reduction through treatment plant optimization, sidestream treatment, and treatment plant upgrades. Draft reports for each agency were submitted for review and comment throughout 2017, and the final draft reports are either completed and near completion, all of which will be incorporated into a final report for the RWB. CMSA has not yet received its final draft report.

There are numerous wastewater treatment technologies and processes that remove nitrogen and phosphorus compounds. HDR's assessment of CMSA facilities, based on the information we provided, their site visit, and subsequent correspondence with staff, is that the methods to remove nutrients at CMSA is limited due to the extreme influent flow ranges caused by wet weather flows, physical limitations of the existing infrastructure, and limited site availability for new facilities.

After completion of the second Permit, CMSA will learn if the central San Francisco Bay is impaired or approaching impairment by nutrients. In either case, CMSA may receive a final effluent limit for nitrogen and/or phosphorus. Phosphorus removal could be achieved by dry weather chemically enhanced primary treatment and sidestream treatment of the biosolids dewatering system's process water. Nitrogen compounds could be removed by constructing a new membrane bioreactor treatment facility in the corporation yard. Depending on the nutrient effluent limits, if any, conceptual capital cost ranges for modifying existing facilities to constructing new facilities are approximately \$5 million to \$210 million, respectively. This cost information is from the draft CMSA Nutrient Reduction Study report, and may be different in the final report.

A task in the Agency's 2017 Master Plan is to peer review the final draft CMSA Nutrient Reduction Study report, perform planning level evaluations to locate the proposed treatment processes and systems considering constructability and site constraints, and prepare planning level construction and operating cost estimates.

Attachments:

- 1) BACWA update on second Watershed Permit, sent via email on 5/5/17
- 2) Estimated Second Watershed Permit Nutrient Surcharges
- 3) RWB letter, dated 10/9/17, on the Key Tenets of the Second Watershed Permit
- 4) CMSA Board report on the first Watershed Permit, dated 1/7/16

INTRODUCTION

The first Nutrient Watershed Permit was a regional permit issue in 2014 by the San Francisco Regional Water Quality Control Board (Water Board). All 37 POTWs that discharge to the Bay, including your agency, is covered by the permit. BACWA is playing a key role in meeting the terms of the Permit on behalf of its members. The 2nd Nutrient Watershed Permit will be issued in 2019. A team, consisting of a cross-section section of POTW representative, has been working to negotiate with the Water Board a permit that will be acceptable to the BACWA membership. The purpose of this email is to ask if your agency would support the key terms for the 2nd Permit that have been discussed with the Water Board and appear to have their concurrence. BACWA is now checking with each BACWA member to get a preliminary indication as to how many of the 37 POTWs would chose to enter into the 2nd Permit.

1ST NUTRIENT WATERSHED PERMIT TERMS AND STATUS

It took approximately 18 months to negotiate the terms of the 1st Watershed (WS) Permit. When finalized, all 37 POTWs that discharge to San Francisco Bay elected to be covered by the 1st WS Permit versus negotiating their own separate permit with the Water Board. There are costs associated with meeting the requirements of the 1st WS Permit but, due to economies of scale, these costs were significantly less under a regional WS permit than if each agency had negotiated their own permit with the Water Board.

The key terms of the 1st WS Permit were as follows:

1. Individual POTW monitoring for nutrients (responsibility of each plant)
2. Group Annual Trend Report (prepared by BACWA)
3. Annual Progress Reports on meeting the terms of the Permit (prepared by BACWA)
4. Optimization/Upgrade Study for each plant (prepared by BACWA)
5. Funding the Nutrient Management Strategy Science Program at \$880,000/yr. (funds, referred to as the Nutrient Surcharge, collected from each agency by BACWA based on their total nitrogen loading to the Bay)

All requirements of the WS Permit are being met. There will be a BACWA membership meeting on June 7th to update the membership on the progress of the Optimization/Upgrade studies.

2ND WATERSHED PERMIT DISCUSSIONS

Recognizing that there will be a 2nd WS Permit issued in 2019, the Water Board has stated their intent of what would be included in the 2nd Permit. They have stated that provision #1, #2, and #3 listed above will be in the 2nd Permit. The Science Program being managed by a group of very talented PhD's at the San Francisco Estuary Institute is progressing but it is significantly underfunded and therefore it is anticipated that the Water Board would want to see, as a requirement in the 2nd WS Permit, at least the same level of science funding from the BACWA membership but probably more. The Water Board also stated their intent to include "load caps" in the 2nd WS Permit. The "load caps" would limit future

increases in nutrient loadings from POTWs and therefore would require reductions in current loading if any growth was projected in a POTW's service area.

The intent to include a "load cap" provision in the 2nd WS Permit caused considerable concern amongst the BACWA membership as plants envisioned having to undergo significant costs to begin reducing nutrients. As an alternative to "load caps" the BACWA negotiating team suggested that since the Science Program was underfunded and since the science should drive any nutrient regulations, didn't it make more sense that, in lieu of "load caps", more funds should be applied to the Science Program to better understand if the Bay is heading towards impairment due to nutrients. The Water Board considered this alternative to the "load caps" provision and agreed that with substantially more funding for the science, which would serve to answer questions regarding impairment earlier, that they would be willing to not include "load caps" in the 2nd WS Permit. But as a caveat they also indicated that they would like to see BACWA make some voluntary increases in the science funding for the last two remaining years in the 1st WS Permit (i.e. FY 18 and FY 19), plus further the understanding of what non-grey scape (i.e. concrete structures) options there were for future reductions in nutrient loadings to the Bay such as use of recycling or wetlands that could have other benefits besides just reducing nutrient loadings.

2nd WATERSHED PERMIT PROPOSAL

After many meetings and discussions with the Water Board, a proposal for the key terms of the 2nd WS Permit has been developed. The key proposed terms for the 2nd WS Permit are as follows:

1. Same as above
2. Same as above
3. Same as above
4. Conduct a regional study on non-grey scape alternative for nutrient reductions (prepared by BACWA)
5. Funding the Nutrient Management Strategy Science Program starting in 2020 at 2.5 x \$880,000/yr. (funds, referred to as the Nutrient Surcharge, collected from each agency by BACWA based on their total nitrogen loading to the Bay)
6. Voluntarily increase funding for the Science Program by \$200,000 in each of FY18 and FY19 (paid by BACWA).

COSTS TO INDIVIDUAL AGENCIES

Funds to pay for all of the requirements in the 1st WS Permit were assessed to individual BACWA members via a Nutrient Surcharge line item that was listed on each member's annual dues invoice. The Nutrient Surcharge supplemented the long standing Clean Bay Collaborative (CBC) fee that has been assessed to the BACWA members for many years and is used to undertake scientific and regulatory investigations of interest to the BACWA members such as the development of rational TMDLs. In order to pay for all of the six items listed above for the 2nd WS Permit, the Nutrient Surcharge would need to be increased (note: the CBC fee has been flat for many years and will remain flat). Attachment A shows

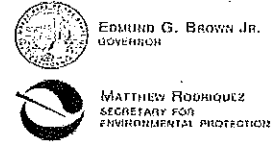
the BACWA member's Nutrient Surcharge for the current FY (i.e. FY 17) plus what the Nutrient Surcharge for your agency would be in FY 18, 19 and FY 20-24 (the 5 yr. term of the 2nd WS Permit).

If you chose not to be a party to the 2nd WS Permit, the Water Board indicated they would negotiate separately with your agency and utilize their authority under the California Water Code section 13267 which gives the Water Board the authority to require individual agencies to investigate the quality of any waters of the state within its region.

A few agencies have indicated an interest in undertaking early actions to reduce nutrients. To the extent an agency wants to get recognition in the 2nd WS Permit for any early action the issues associated with commitment to the implementation of the early action, specified reduction of nutrients, continuation of the activity for years to come, etc. would need to be worked out on a case -by -case basis with the Water Board.

BACWA Agency	1ST WATERSHED PERMIT					2ND WATERSHED PERMIT*				
	Current Nutrient Surcharge FY 17	FY 18 Nutrient Surcharge	FY 19 Nutrient Surcharge	FY 20 Nutrient Surcharge	FY 21 Nutrient Surcharge	FY 22 Nutrient Surcharge	FY 23 Nutrient Surcharge	FY 24 Nutrient Surcharge		
CCCSO	\$106,667	\$106,667	\$106,667	\$226,667	\$226,667	\$226,667	\$226,667	\$226,667		
EBDA	\$106,667	\$106,667	\$106,667	\$226,667	\$226,667	\$226,667	\$226,667	\$226,667		
EBMUD	\$106,667	\$106,667	\$106,667	\$226,667	\$226,667	\$226,667	\$226,667	\$226,667		
San Jose	\$106,667	\$106,667	\$106,667	\$226,667	\$226,667	\$226,667	\$226,667	\$226,667		
SFPUC Southeast	\$106,667	\$106,667	\$106,667	\$226,667	\$226,667	\$226,667	\$226,667	\$226,667		
American Canyon	\$1,155	\$1,155	\$1,155	\$2,455	\$2,455	\$2,455	\$2,455	\$2,455		
Benicia	\$3,677	\$3,677	\$3,677	\$7,813	\$7,813	\$7,813	\$7,813	\$7,813		
Burlingame	\$7,262	\$7,262	\$7,262	\$15,431	\$15,431	\$15,431	\$15,431	\$15,431		
CMSA	\$15,505	\$15,505	\$15,505	\$32,948	\$32,948	\$32,948	\$32,948	\$32,948		
Crockett (Port Costa)	\$26	\$26	\$26	\$55	\$55	\$55	\$55	\$55		
Delta Diablo	\$25,565	\$25,565	\$25,565	\$54,325	\$54,325	\$54,325	\$54,325	\$54,325		
FSSD	\$20,787	\$20,787	\$20,787	\$44,172	\$44,172	\$44,172	\$44,172	\$44,172		
Las Gallinas ^(b)	\$1,952	\$1,952	\$1,952	\$4,149	\$4,149	\$4,149	\$4,149	\$4,149		
MSD 5 (Tiburon & Paradise Cove)	\$1,074	\$1,074	\$1,074	\$2,282	\$2,282	\$2,282	\$2,282	\$2,282		
Millbrae	\$4,339	\$4,339	\$4,339	\$9,219	\$9,219	\$9,219	\$9,219	\$9,219		
Mt. View	\$2,055	\$2,055	\$2,055	\$4,368	\$4,368	\$4,368	\$4,368	\$4,368		
Napa SD	\$3,433	\$3,433	\$3,433	\$7,295	\$7,295	\$7,295	\$7,295	\$7,295		
Novato SD	\$2,636	\$2,636	\$2,636	\$5,601	\$5,601	\$5,601	\$5,601	\$5,601		
Palo Alto	\$36,802	\$36,802	\$36,802	\$78,203	\$78,203	\$78,203	\$78,203	\$78,203		
Petaluma	\$683	\$683	\$683	\$1,452	\$1,452	\$1,452	\$1,452	\$1,452		
Pinole	\$5,320	\$5,320	\$5,320	\$11,305	\$11,305	\$11,305	\$11,305	\$11,305		
Rodeo SD	\$607	\$607	\$607	\$1,291	\$1,291	\$1,291	\$1,291	\$1,291		
SFO Airport	\$3,384	\$3,384	\$3,384	\$7,191	\$7,191	\$7,191	\$7,191	\$7,191		
San Mateo	\$25,657	\$25,657	\$25,657	\$54,521	\$54,521	\$54,521	\$54,521	\$54,521		
Sausalito-Marín City SD	\$2,283	\$2,283	\$2,283	\$4,852	\$4,852	\$4,852	\$4,852	\$4,852		
Sewerage Agency of SM	\$3,634	\$3,634	\$3,634	\$7,721	\$7,721	\$7,721	\$7,721	\$7,721		
Sonoma Co Water Ag	\$390	\$390	\$390	\$830	\$830	\$830	\$830	\$830		
SVCW	\$35,104	\$35,104	\$35,104	\$74,596	\$74,596	\$74,596	\$74,596	\$74,596		
South SF	\$18,650	\$18,650	\$18,650	\$39,632	\$39,632	\$39,632	\$39,632	\$39,632		
Sunnyvale	\$14,545	\$14,545	\$14,545	\$30,908	\$30,908	\$30,908	\$30,908	\$30,908		
Treasure Island	\$249	\$249	\$249	\$530	\$530	\$530	\$530	\$530		
Vallejo Sanitation & FCD	\$15,760	\$15,760	\$15,760	\$33,489	\$33,489	\$33,489	\$33,489	\$33,489		
West County Agency	\$14,133	\$14,133	\$14,133	\$30,032	\$30,032	\$30,032	\$30,032	\$30,032		

* Note: Since the Nutrient Surcharge is based on the average of the three most recent years of discharge of total nitrogen, your agency's Surcharge may change slightly over time.



San Francisco Bay Regional Water Quality Control Board

October 9, 2017

Mr. David R. Williams
 Executive Director
 Bay Area Clean Water Agencies

Subject: Water Board Staff's Intention on the Key Tenets of the Second Watershed Permit

Dear Mr. Williams:

The purpose of this letter is to set forth the Water Board staff's intention on the key tenets that will be included in the proposed second Nutrient Watershed Permit that will be presented to the Water Board for adoption in 2019. As you know, the Water Board and BACWA have been working collaboratively over the last several years in support of the Water Board's Nutrient Management Strategy that seeks, through scientific investigations, to better understand the impact of nutrient loads on the beneficial uses of San Francisco Bay and to establish a basis for appropriate nutrient load management and regulatory actions. The Nutrient Watershed Permit provides and serves as the regulatory mechanism to recognize this collaboration.

The first Nutrient Watershed Permit, adopted by the Water Board in 2014, included requirements to monitor and report trends in nutrient loads to the Bay, evaluate the feasibility and costs of treatment alternatives to reduce nutrient loads to the Bay, and to provide funding for scientific investigations as part of a multi-year Science Plan. We are now into the fourth year of the five-year permit term, and, with an eye towards subsequent Nutrient Watershed Permits, we need to ensure that key data and information are available and analyses completed to support taking appropriate regulatory actions in the future.

To adequately inform nutrient load management decisions in the third Nutrient Watershed Permit, we see need to enhance and accelerate progress being made under the first Watershed Permit. To that end, we envision that the key tenets in the second Nutrient Watershed Permit would include the following:

1. Individual treatment plant nutrient monitoring and reporting;
 2. Group Annual Reporting of nutrient loads to the Bay;
 3. Funding for Nutrient Management Strategy's scientific investigations;
 4. A regional assessment of the feasibility and cost for reducing nutrients through means other than treatment and discharge at POTWs;
 5. Establishing a baseline for POTWs that undertake early actions to reduce nutrients;
- and

DR. TERRY F. YOUNG, CHAIR | BRUCE H. WOLFE, EXECUTIVE OFFICER

1515 Clay St., Suite 1400, Oakland, CA 94612 | www.waterboards.ca.gov/sanfranciscobay


6. Funding for Monitoring and Modeling at the end of the second Nutrient Watershed Permit

Further delineation and explanation of these key tenets is included in Attachment A. We understand that the BACWA membership has reviewed these tenets and concurs that if these are the main tenets around which the requirements of the second Nutrient Watershed Permit will be developed, the desire is for each member of BACWA to be named in the second Nutrient Watershed Permit. BACWA will also voluntarily contribute \$200k in FY 2017-18 and FY 2018-19 to help address the funding gap that exists in the Science Plan.

Water Board staff feels continued collaboration with the Bay Area POTWs on this important issue is very valuable and provides a model for working together on difficult regulatory issues. We look forward to continuing this effort to the benefit of the Bay environment and the residents of the Bay Area.

Should have questions, please contact me at 510-622-2314 / bwolfe@waterboards.ca.gov or Tom Mumley at 510-622-2395 / tmumley@waterboards.ca.gov.

Sincerely,



Digitally signed
by Bruce H. Wolfe
Date: 2017.10.09
18:45:50 -07'00'

Bruce H. Wolfe
Executive Officer

Attachment A: Key Tenets of Second Nutrient Watershed Permit

Cc (w/att):

SF Bay Water Board Members

David Smith, USEPA Region IX

Ian Wren, SF BayKeeper

Attachment A

Key Tenets of Second Nutrient Watershed Permit

1. Individual treatment plant nutrient monitoring and reporting

The second Nutrient Watershed Permit will continue individual treatment plant monitoring and reporting requirements for nutrients using the same constituents and monitoring frequency as described in the first Permit.

2. Group Annual Reporting of nutrient loads to the Bay

The permit will continue the requirement to produce an annual report showing nutrient loads and trends to the various subembayments, as described in the first Permit and with similar reporting content as has been provided by BACWA to date. The Group Annual Report will also track any load reductions due to early actions undertaken by individual agencies.

3. Funding for the Nutrient Management Strategy's scientific investigations

The increase in science funding is nominally set at 2.5 times the amount in the first Permit, or \$2.2M/year for five years. The actual annual commitment will be based on the number of POTWs participating as of the start of FY 2019-2020. If all POTWs continue participation, the funding commitment in the second Permit will be set at \$2.2M/year. If one or more POTWs decide not to participate, the amount designated in the second Permit will be reduced by their Nutrient Surcharge as of FY 2018-19, as shown in the attached schedule of the projected Nutrient Surcharges. Thus, individual POTWs will have certainty as to their Nutrient Surcharge since it will be independent of which other municipal dischargers participate in the second Permit.

4. A regional assessment of feasibility and cost for reducing nutrients through means other than treatment and discharge at POTWs

The second Nutrient Watershed Permit will require the completion of a study that will look at regional opportunities for non-grey scape approaches (e.g., wetland enhancement, irrigation recycling) to reduce nutrients, possibly limited to just nitrogen. The study approach will be similar to that utilized with the Optimization/Upgrade Study required by the first Permit. BACWA will issue a Request for Proposals and select a consultant and will prepare a Scoping and Evaluation Plan for Water Board review and approval. BACWA will periodically brief Water Board staff on study progress.

5. Establishing a baseline for POTWs that undertake early actions to reduce nutrients

The second Nutrient Watershed Permit will recognize that some POTWs may independently undertake early actions to reduce nutrients. In recognition of early actions, the Permit will contain language that establishes a total nitrogen baseline load for any POTW that achieves reductions in advance of a regulatory limit. The baseline load will be the total nitrogen load from the POTW, prior to the time nutrient reduction efforts are initiated, projected forward to the time when a regulatory limit may be imposed assuming there have been no reductions through early actions. The annual difference between the baseline projected load or regulatory load cap and the actual nitrogen load can be banked for credit by the POTW.

If anticipated load caps are subsequently implemented in a future permit, agencies that have implemented early actions and accumulated a credit bank will be able to use the credits to (1) provide for future growth within their service area, (2) participate in trading to allow other

dischargers to meet a regulatory limit, and/or (3) secure relief on other permit issues (e.g., mixing zones, toxicity, other limits) as appropriate.

The Water Board will continue to recognize that improvements to achieve greater nutrient reduction requires decades of capital improvement program planning and construction. The working life of wastewater treatment infrastructure spans 50 years or more. Long-term planning and integration of nutrient removal actions may require regulatory accounting and recognition of agencies that take early actions that achieve significant load reductions. Credit banking and nitrogen load trading are just two examples of possible means of incentivizing agencies to make significant investments ahead of regulatory requirements. To the extent possible, based on continued monitoring and modeling, those POTWs achieving early nitrogen load reductions will not face further load reductions over the life of the plant upgrades.

6. Funding for Monitoring and Modeling at the end of the second Nutrient Watershed Permit

Given that the intent was to complete the Science Plan by 2024, it is expected that the second Nutrient Watershed Permit would require the \$2.2M/year level of funding (or less depending on POTW participation, per Tenet 3) for five years only. Monitoring and modeling beyond those five years may be carried out through the RMP program with some funding support from the POTWs at an adjusted (presumably lower) level.



BOARD MEMORANDUM

January 7, 2016

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: San Francisco Bay Nutrient Watershed Permit

Recommendation: Informational, provide comments or direction to the General Manager, as appropriate.

Summary: The San Francisco Bay Regional Water Quality Control Board (RWB) adopted a Nutrient Watershed Permit (Permit) in April 2014 that is applicable to all San Francisco Bay wastewater dischargers. This permit requires each wastewater discharger to evaluate treatment optimization of their existing facilities and treatment plant upgrades to reduce nutrient loading to the Bay, and perform nutrient monitoring and sampling of Bay waters. Using a collaborative approach, all wastewater dischargers are complying with the Permit requirements through studies and evaluations administered and managed by the Bay Area Clean Water Agency (BACWA). Staff has provided the CMSA Board with brief periodic updates on the status of the Permit activities, and the intent of this staff report and meeting discussion is to provide an overview of the Permit requirements, report on activities currently underway, and present the initial assessment of feasible methods for CMSA's to reduce nutrient loading to the Bay.

A Potential Problem - Nutrients in the S.F. Bay: The San Francisco Bay has long been recognized as nutrient enriched, meaning the Bay waters have above normal concentrations of nitrogen and phosphorus compounds. Normally, nutrient rich aquatic environments have excessive populations of algae and phytoplankton that cause a reduction in the dissolved oxygen concentration and overall degradation of the water body. In the S.F. Bay, the phytoplankton population is lower than expected, likely due to strong tidal mixing, clam filtration, and limited light penetration into the water due to its high turbidity. Recent studies have shown a decrease in the water turbidity and clam population in certain parts of the Bay, both of which can contribute to an increase in the phytoplankton population resulting in potential impacts to the Bay's designated beneficial uses, such as fish spawning, wildlife habitat, shellfish harvesting, recreation, navigation, etc.

The RWB has been monitoring these studies and related state and national developments, and in response has taken several actions. The first being issuance of a regulatory letter, known as a

Water Code Section 13267 letter, in March 2012, to all wastewater dischargers requiring each to perform nutrient sampling of their treated wastewater. Since that time, CMSA and the other Bay dischargers have been collecting and reporting bi-weekly nutrient discharge data for total nitrogen and total phosphorus. This data showed that 99% of the nutrient loading to the central S.F. Bay, where CMSA discharges, is from wastewater facilities, while 63% of nutrient loading to the entire Bay is from wastewater dischargers.

According to the data analysis presented in the Permit, CMSA's treated wastewater effluent contributes 1.65% of the total nitrogen and 2.13% of the total phosphorus to the Bay's nutrient loading.

Nutrient Watershed Permit: During the Permit's development, BACWA and the RWB discussed several methods to better understand and address the nutrient loading impacts to the Bay. These included additional studies and monitoring of the Bay environment and its sub-embayments to quantify the nutrient loading and its potential impacts, rationale and value of developing wastewater discharge nutrient permit limits now or in the future, utilizing an individual discharger or watershed based permitting approach, allowing BACWA to represent interested dischargers to comply with permit requirements, as well as other related topics.

The RWB understood that determination of the appropriate level of nutrient control will take several years through multiple permit cycles. In April 2014, the first Permit was adopted and is applicable to all Bay wastewater dischargers; it does not contain nutrient effluent limits for individual dischargers, and allows BACWA to submit annual reports on behalf of groups of dischargers. A brief description of the Permit's special studies and evaluations are below.

1) Evaluation of Potential Nutrient Discharge Reduction by Treatment Optimization and Sidestream Treatment

All wastewater dischargers are required to evaluate if and how existing treatment systems and processes can be utilized to reduce effluent nutrient levels and estimate those reductions. For sidestream treatment evaluation, dischargers must identify opportunities to add treatment equipment to reduce nutrient loading from internal facility sidestreams, such as from biosolids dewatering (centrate). Each evaluated optimization and sidestream options must include a planning level cost estimate and any ancillary impacts such as additional energy usage and greenhouse gas emissions.

2) Evaluation of Potential Nutrient Discharge Reduction by Treatment Upgrades

Dischargers must identify feasible treatment facility upgrades or new treatment facilities to reduce nutrient discharges. For each evaluated option, cost estimate and ancillary impact analysis are required.

3) Monitoring, Modeling, and Embayment Studies

Discharger must conduct studies to address potential adverse impacts on nutrients on the Bay; perform expanded nutrient, dissolved oxygen, and phytoplankton monitoring in the Bay, and develop a Science Plan of studies to implement a Nutrient Management Strategy.

Another key requirement of the Permit is the annual reporting and analysis of each Bay discharger's effluent nutrient monitoring data, and concentration and loading trends. Status reports on the two evaluation plans are due in July 2016 and 2017, and the final report is due July 2018.

BACWA Activities: After adoption of the Permit, BACWA engaged its membership to determine which agencies would be interested in participating in group evaluations and assessments to comply with the Permit requirements. BACWA regularly represents its S.F. Bay area members on regulatory matters before or being considered by the State and Regional Water Boards. The benefit of this approach is it shows strong discharger collaboration and working relationships, common positions on regulatory matters of interest or concern, and takes advantage of the economies of scale to jointly fund special regulatory mandated studies and/or evaluations. In response to the BACWA solicitation, there was overwhelming support by the dischargers to participate in a group program, versus individual, and for BACWA to manage it. All Bay dischargers are now represented by BACWA for the Permit evaluations, studies, and reporting. BACWA is including a surcharge on its members' annual invoices for the Permit evaluations and additional nutrient monitoring studies. CMSA's share of the Permit work expenses in FY15 was \$5,230 and in FY16 was \$10,460, much less than if the Agency decided to independently comply with the Permit requirements.

Using a Request for Proposal based evaluation process, BACWA selected the consulting team of Brown and Caldwell and HDR Engineering (HDR) to prepare the treatment optimization and upgrade evaluations. In late 2014, HDR prepared and submitted a Scoping and Evaluation Plan for Nutrient Reduction, a Permit requirement, to the RWB that was accepted. By the spring of 2015, each discharger had provided HDR with their respective treatment plant design data, effluent monitoring results, standard process operating procedures, and other requested information needed to plan the individual site assessments. CMSA's site visit was in June 2015 where staff discussed the provided Agency information, gave HDR a tour of the treatment facilities, discussed operational modes in the dry and wet weather seasons, and responded to questions about the treatment optimization concepts, sidestream treatment opportunities, and the feasibility of nutrient removal treatment systems given CMSA's significant wet weather flows and site space constraints.

Potential Nutrient Reduction at CMSA: There are several wastewater treatment technologies and processes that can be used to remove nitrogen and phosphorus compounds. HDR's initial assessment of CMSA facilities, given the information we provided and based on their site visit, is that the methods to remove the nutrients is limited due to the extreme influent flow ranges, physical limitations of the existing infrastructure, and the above mentioned limited site availability for new facilities. Phosphorus removal could be achieved by dry weather chemically enhanced primary treatment and sidestream treatment of the dewatering centrate. Nitrogen compounds could be removed by constructing a new membrane bioreactor treatment facility in the corporation yard. Cost information, ancillary impacts, as well as other conceptual design level consideration for these removal systems will be developed by HDR before the final report is due to the RWB in 2018.