BACWA EXECUTIVE BOARD MEETING
Thursday, January 3, 2013, 9:00 a.m. – 12:00 p.m.

HANDOUTS

Handout Packet is available on the BACWA website (www.BACWA.org).

Executive Board Meeting Agenda

Thursday, January 3, 2013, 9:00 a.m. – 12:00 p.m.
EBMUD Lab Library, 2020 Wake Ave., Oakland, CA

ROLL CALL AND INTRODUCTIONS (9:00 a.m. – 9:05 a.m.)

PUBLIC COMMENT (9:05 a.m. – 9:10 a.m.)

CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER (9:10 a.m. – 9:15 a.m.)

CONSENT CALENDAR (9:15 a.m. – 9:20 a.m.)

1. November 29, 2012 BACWA Executive Board Meeting Minutes
2. October 2012 Treasurer's Report
3. Amendment 3 to Prop 84 legal support agreement with Day Carter Murphy to extend contract termination date to June 30, 2013; File 12,490
4. Amendment 2 to Recycled Water Committee support agreement with EPC Consultants, Inc to extend the contract termination date to June 30, 3013; File 12,381

REPORTS (9:20 a.m. – 10:20 a.m.)

5. Committee Reports
6. Executive Board Reports
7. Executive Director Report
8. Regulatory Program Manager Report
9. Chair & Executive Director Authorized Actions
    a. Vice Chair authorization of agreement with Hanson Bridgett for ED recruitment support, not to exceed $9,999.00 in FY 2012-13; File 12,855
    b. Executive Director authorization of agreement with International Contact for BAPPG Cu Algaecide outreach assistance, not to exceed $313.00 in FY 2012-13; File 12,872.

OTHER BUSINESS (10:20 a.m. – 12:00 p.m.)

10. Authorization: Approval of contract with Solano County Community College for WOT program (Bay Area Consortium for Water & Wastewater Education), not to exceed $104,500 for Spring 2013 semester; File 12,876.
11. Authorization: Approval of SFEI Technical Memo, *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities, April 24, 2012.*
12. Authorization: Renewal of annual membership for Stanford ERC ReNUWIt, not to exceed $10,000, FY 2012-13.

13. Authorization: Approve revised scope for SFEI Nutrients Strategy Development contract to redirect up to $25,000 of the current funds to support initial efforts toward assessing nutrient exchange through the Golden Gate.
14. Discussion: Nutrients
    a. SFEI Nutrients Strategy Development update (Dave Senn)
        i. Decision Tree draft
        ii. Development of Strawman Science Plan for Suisun Bay proposal
    b. Nutrient Governance Development update (Ben)
    c. Nutrient Permit Concept update (Tom Grovhoug/Denise Conners)
15. Discussion: CEC's and Pulse Article (Lorien)
16. Discussion: Whole Effluent Toxicity Policy update (Jim Ervin) - current approach and opportunities for additional information.
17. Discussion: NPDES Permit Petition Dismissal update (Jim Kelly).
18. Discussion: FOG White Paper update (Bhavani)
19. Discussion: Joint RWQCB/BACWA Meeting January 11th
20. Discussion: BACWA Annual Member Meeting, January 24th, 2013 at California Endowment Conference Center, 1111 Broadway, Oakland
21. Discussion: Fiscal Year 2013-14 Budget Process/Planning

NEXT MEETING

The next regular monthly meeting of the Board is tentatively scheduled for Thursday, February 28, 2013 at the EBMUD Treatment Plant Lab Library, 9:00 a.m. – 12 p.m.

ADJOURNMENT (12:00 p.m.)

Executive Board Meeting Minutes

Thursday, November 29, 2012, 9:00 a.m. – 12:00 p.m.
EBMUD Treatment Plant Lab Library
2020 Wake Avenue, Oakland, CA

ROLL CALL AND INTRODUCTIONS
Executive Board Representatives: Ben Horenstein, Chair (East Bay Municipal Utility District); Laura Pagano, Vice Chair (San Francisco Public Utilities Commission); Ann Farrell (Central Contra Costa Sanitary District); Mike Connor (East Bay Dischargers Authority); Jim Ervin (City of San Jose).

Other Attendees: Dave Williams(East Bay Municipal Utility District); Amanda Roa (Delta Diablo Sanitation District); Bhavani Yerrapotu (Sunnyvale); Tom Hall (Sunnyvale/EOA); David Senn (San Francisco Estuary Institute); Monica Oakley (RMC); Denise Conners (Larry Walker Associates); Holly Kennedy (HDR); Paul Causey (Causey Consulting); Lorien Fono (Patricia McGovern Engineers); Jim Kelly (BACWA); Alexandra Gunnell (BACWA).

PUBLIC COMMENT
There were no public comments.

CONSIDERATION TO TAKE AGENDA ITEMS OUT OF ORDER
The Board requested that Other Business items be moved to the beginning of the meeting and discussed before all other agenda items.

OTHER BUSINESS
Under **agenda item 8**, the Board appointed Dave Williams and Laura Pagano to serve as **BACWA representatives to the Aquatic Science Center Board**. Kirsten Struve and Jim Ervin will serve as alternates. *The motion was made by Mike Connor, seconded by Ben Horenstein and approved unanimously.* It was noted that Kirsten will attend the upcoming meeting and this action will take effect thereafter. It was also stipulated that representatives serve for a one year term, and that the BACWA Board appoint representatives at the beginning of each calendar year, beginning in January 2014.

For **agenda item 9**, the Board approved use of the existing As Needed agreement with **Larry Walker Associates for Nutrient Framework Development support, not to exceed $15,000**. *The motion was made by Mike Connor, seconded by Laura Pagano, and passed unanimously.* It was noted that obtaining feedback from member agencies was not included in the scope of work, though LWA will identify related issues. A suggestion was made that the Annual Meeting may provide a forum to communicate potential nutrient regulatory frameworks to BACWA members.

The Board authorized a **revised scope for the existing SFEI Nutrients Strategy Development agreement** under **agenda item 10**. In addition to the proposed reallocation of $15,000 to address Task 1 in the revised scope, the Board authorized reallocation of $12,000 to move forward with Task 2a. *The motion, made by Mike Connor and seconded by Jim Ervin, was approved unanimously.* The Executive Director (ED) informed the Board that Naomi Feger has reviewed the scope revision and is amenable to the reallocation, though she expressed concerns that this shift could detract from current efforts, could reduce support for the modeling effort, could move focus from

determining how to fund long-term projects, and funding Suisun Bay monitoring could be of greater benefit. Dave Senn also clarified that his drafting of the straw man Suisun Science Plan, as discussed at the last Suisun work group meeting, can be funded from the original portion of the BACWA scope (Feb 9 2012, Task 2), not funds allocated to this revised portion of the scope, though the Board agrees this could be tied into Task item 1c.

Paul Causey provided an update to the **Board on the Sewer Rate Survey** for **agenda item 11.** He noted the following corrections to the handouts included in the meeting packet: BACWA has been providing administration of the survey since August *2010* (not 2011); the State Water Board is no longer administering an annual survey. Paul reviewed options for increased administration and management of the survey, as well as possibilities for acquiring more comprehensive information. He compared BACWA's current survey to what is published by NACWA. The Board requested that Paul work with the ED to develop an analysis of the BACWA survey to present at the Annual Meeting and obtain member feedback. Based on member response, Paul could draft a scope of work for proposed services in 2013-14. The Board recommended competitive bids should be reviewed for this contract.

Under **agenda item 12,** the ED requested an update from any agency that had staff attend the **TAG November 8th Meeting.** Though there were individuals from EBDA and SFPUC that were interested in attending they were not able to due to scheduling conflicts. The Board requests that they be notified of future opportunities to attend meetings.

For **agenda item 13, Pardee Follow-up**, the Board reviewed various items that were discussed at the Technical Seminar on November 5 – 7**.** No further discussion was necessary for the **Nutrient Permit Concept Framework** since it had already been covered under agenda item 9.

Nutrient Governance Development status was reviewed by Ben Horenstein. As a result of his meeting with Naomi, the schematic developed at Pardee was edited with the addition of a Management Committee that could consist of the State Water Board staff, Regional Water Quality Control Board staff (RWQCB) and others. The Management Committee would meet less frequently than the Steering Committee (possibly annually for the Management and quarterly for the Steering Committee). The current Science Advisory Group (SAG) might evolve into the Steering Committee, which could provide a more formal structure for determining priorities and funding. Ben agreed to draft a document providing a more detailed description of the proposed Management and Steering committees to facilitate further discussions. He will also follow up with Naomi for more information about resources that may be needed.

The Regulatory Program Manager, Lorien Fono, updated the Board about **CEC's and the Pulse article.** As a follow up to discussions she has had with Tom Mumley and Karin North, she will draft a proposal for consideration at the next Board meeting (1/3/2013) outlining how she could support completion of the article.

The Board decided to forego further investigation into the development of a **BACWA Opportunities Subcommittee** until ED recruitment efforts have concluded, at which time a broader discussion about BACWA priorities could take place and provide better background for consideration of this proposal. The ED also distributed recommendations from Tom Hall for improved communication among BACWA members via the website. Paul Causey noted concerns about the current distribution process for the Sewer Survey. The ED and Assistant Executive Director will work with BACWA's web consultants on possible changes to the website and communication methods.

The ED will work to schedule the next **Joint meeting** between January 3, 2013 and January 24, 2013.

The ED informed the Board that he requested feedback from BACWA members on the proposed phased approach for **Toxicity** testing. Of the twelve responses he received, only three opposed phasing. Concerns were raised about cost increases that may result from monthly testing requirements, especially for small and mid-sized agencies. The State Board will not adopt the policy until February. The Board suggests that the ED continue to work with CASA and add this item to the next Board meeting agenda (January 3rd) for discussion in preparation for the next Joint meeting.

For **agenda item 14**, **NPDES Permit Petition Dismissal**, the ED proposed that the Principals dismiss their outstanding petitions, and then he will follow up with the remaining affected agencies. SFPUC and San Jose Board representatives give their permission to dismiss their petitions.

Attendees discussed the **BACWA Annual Member Meeting** scheduled for **January 24, 2013,** under **agenda item 15.** It was mentioned that the Collection Systems Committee would like to hold their meeting afterward, if time allows, otherwise the ED recommended holding the Collection Systems meeting separately. In addition to Paul Causey, many others were suggested as possible speakers or panel members. Amanda Roa agreed to provide a presentation to introduce members to nutrients issues. Mike Connor and Ann Farrell offered to assist her. A recommendation was made to include regional issues in this presentation. Felicia Marcus or Steve Moore were suggested as potential speakers to provide perspective on State Board priorities and could be scheduled with Bruce Wolfe's presentation on RWQCB priorities. Speakers or panel members to address nutrients strategy, framework, potential impact, and costs could also include Tom Grovhoug, Tom Mumley, and Tom Hall. It was noted that Dave Senn may be able to contribute some slides about the decision tree and that Ben or Ann could serve as a panel facilitator. The ED or Chair could also provide an introduction that would include a review of BACWA efforts over the past year, including WDR SSO MRP and Hg TMDL work. Monica Oakley offered to provide the ED with a write up on the MRP. The Chair will follow up with the suggestion to include a speaker from Baykeeper, by contacting Deb Self. Terry Flemming was suggested to provide EPA perspective. Other potential topics included BAPPG and other BACWA committee activities, CARB implementation, and BACWA member fees. CECs were noted but may also be considered for 2014 instead. Jim Ervin could provide a presentation on Toxicity (WET). ED and AED will work to secure speakers and draft an agenda to circulate for Board feedback.

CONSENT CALENDAR

Agenda items 1 and 2 *were approved in a motion made by Ben Horenstein and seconded by Ann Farrell. The motion carried unanimously.*

1. October 25, 2012 BACWA Executive Board Meeting Minutes
2. September 2012 Treasurer's Report

REPORTS

Committee Reports were reviewed under **agenda item 3.**

Is indicated in the **AIR Committee** report included in the handout packet, a BAAQMD representative will be attending the next AIR meeting, and it was noted that this may be of interest to other BACWA members. The Board inquired about the committee's financial concerns that were brought up during Pardee and requested that the AIR committee draft a proposal for increased funding. Included as an attachment to the AIR report was a presentation on CAMBI. A suggestion was made to include a CAMBI presentation at the Annual Meeting or that it could be included along with other pilot studies of removal technologies at a BACWA-sponsored workshop. Laura Pagano will

investigate scheduling a speaker from SFPUC for a CAMBI presentation at the Annual Meeting. The ED will follow up on the suggestion to include pilot technologies on the Annual Meeting agenda by contacting Don Gray to speak on behalf of WERF.

Of note in the **Collection Systems** committee report, included in the handout packet, was the notification from RWQCB that submission of SSO Annual Reports will no longer be required.

The **Permits** committee report in the handout packet provided a brief update on the Mercury PCB Watershed Permit and the Regulatory Program Manager (RPM) noted that some member agencies have expressed interest in the Permits and Lab committees work on an inter-laboratory comparison. The Board would like to review the results of Palo Alto and Delta Diablo's investigation, along with Mary Lou Esparza's analysis of reporting and then determine next steps, as recommended by the Lab Committee.

Executive Board Reports were covered under **agenda item 4.**

Ben Horenstein of **EBMUD** reported that he attended a wastewater managers meeting where he presented information on their FOG program. Attendees remarked that a white paper on analyzing potential cost and benefits of FOG programs could be beneficial for member agencies considering implementation. Bhavani Yerrapotu will investigate utilizing engineering and pollution prevention staff that could work on this paper, with possible assistance from DDSD staff, BAPPG, and the Engineering Info Share Group members. A scope of work for consultant support could be brought back to the Board for approval.

Laura Pagano reported that **SFPUC** is continuing investigations and clean up of a sewage discharge from a manhole cover at the intersection of the Great Highway and Balboa.

Ann Farrell provided an update on implementation of California Public Pension Reform Legislation (AB 197) affecting **CCCSD** employees. The Deputy Sheriff's Association and International Association of Firefighters have filed suit to prevent implementation of AB 197 and the Central Contra Costa County Superior Court has issued a stay order. This court order is in effect until 60 days after the court enters judgment in this case and determines whether or how AB 197 should be implemented. Ann also reported that Paul Causey is a new member of the CCCSD Board and that Barbara Hockett is no longer on the Board.

Representatives from **EBDA** and **San Jose** declined to report out.

The **Executive Director Report** for **agenda item 5** was included in the handout packet and reviewed by the ED. The ED informed the Board that BACWA has been contacted by Fred Andes regarding continued participation in the Federal Water Quality Coalition (FWQC). The Board recommended that the Chair use his authority to pay the outstanding 2012 membership dues. The Board also requested that they be included on the FWQC e-mail distribution list.

The **Regulatory Program Manager Report** for **agenda item 6** was also included in the handout packet. Most issues were already covered under other agenda items.

The next regular BACWA Board meeting is scheduled for, January 3rd, 2013 at the EBMUD Treatment Plant Lab Library from 9 a.m. – 2 p.m. and includes a holiday lunch.

The meeting adjourned at 12:00 p.m.

Bay Area Clean Water Agencies
A Joint Powers Public Agency
Leading the Way to Protect our Bay

December 20, 2012

MEMO TO: Bay Area Clean Water Agencies Executive Board
MEMO FROM: D. Scott Klein, Controller, East Bay Municipal Utility District
SUBJECT: Four Month Treasurer's Report

As required by section eight of the Joint Powers Agreement establishing the Bay Area Clean Water Agencies (BACWA) and California Government Code Sections 6500 et seq., attached is the BACWA Treasurer's Report for the period covering **July 1, 2012 through October 31, 2012** (four months of Fiscal Year 2012-2013). This report covers expenditures, cash receipts, and cash transfers for the following BACWA funds:

- Bay Area Clean Water Agencies (BACWA),
- BACWA Training Fund (Trng Fnd),
- Air Issues and Regulation Group (AIR),
- Bay Area Pollution Prevention Group (BAPPG),
- BACWA Legal Reserve Fund (Legal Rsrv),
- Water Quality Attainment Strategy (WQA CBC),
- BACWA Operating Reserve Fund (BACWAOpRes),
- Regional Water Recycling (RWR),
- BACWA Reserve (Reserve),
- Water/Wastewater Operator Training (WOT),
- Prop84 Bay Area Integrated Regional Water Mgmt (PRP84),
- WQA Emergency Reserve Fund (WQA Emerg),
- WQA Tech Action Fund (TechAction),
- CBC Operating Reserve Fund (CBC OpRsrv), and
- Prop50 Bay Area Integrated Regional Water Mgmt (PRP50)

Fund Balances as of month end 10/31/12

DESCRIPTION	BEGINNING FUND BALANCE 7/1/12	TOTAL RECEIPTS	TOTAL DISBURSEMENTS	ENDING FUND BALANCE 10/31/12	OUTSTANDING ENCUMBRANCES	UNOBLIGATED FUND BALANCE 10/31/12
BACWA	597,182	498,232	89,467	1,005,947	337,207	668,741
TRNG FND	247,407	420	-	247,827	-	247,827
AIR	3,372	72,392	-	75,764	79,556	(3,792)
BAPPG	41,498	28,437	17,389	52,546	13,983	38,564
LEGAL RSRV	302,900	514	-	303,413	-	303,413
WQA CBC	214,406	329,023	65,066	478,363	103,428	374,935
BACWAOPRES	152,408	258	-	152,666	-	152,666
RWR	16,676	28	-	16,704	-	16,704
RESERVE	120,000	-	-	120,000	-	120,000
WOT	67,662	140,677	77,500	130,839	-	130,839
PRP84	39,116	872,396	783,040	128,472	8,372	120,101
WQA EMERG	403,866	685	-	404,551	-	404,551
TECHACTION	252,416	428	-	252,844	-	252,844
CBC OPRSRV	163,566	277	-	163,843	-	163,843
PRP50	167,638	289	113	167,814	38,184	129,630
	2,790,112	1,944,056	1,032,574	3,701,594	580,728	3,120,866

BACWA Revenue Report for October 2012

DEPARTMENT	REVENUE TYPE	AMENDED BUDGET	CURRENT PERIOD			YEAR TO DATE				UNOBLIGATED
			DIRECT	INVOICED	JVS	DIRECT	INVOICED	JVS	ACTUAL	
Bay Area Clean Water Agencies	Administrative & General	-	-	-	-	7,341	-	-	7,341	(7,341)
Bay Area Clean Water Agencies	BDO Member Contributions	420,000	-	-	-	-	330,000	-	330,000	90,000
Bay Area Clean Water Agencies	BDO Fund Transfers	10,277	-	-	-	-	-	1,942	1,942	8,335
Bay Area Clean Water Agencies	BDO Interest Income	5,000	-	-	740	-	-	1,449	1,449	3,551
Bay Area Clean Water Agencies	BDO Assoc.&Affiliate Contr	159,000	-	12,000	-	-	157,500	-	157,500	1,500
BACWA TOTAL		**594,277**	**-**	**12,000**	**740**	**7,341**	**487,500**	**3,391**	**498,232**	**96,045**
BACWA Training Fund	BDO Interest Income	-	-	-	197	-	-	420	420	(420)
TRNG FND TOTAL		**-**	**-**	**-**	**197**	**-**	**-**	**420**	**420**	**(420)**
AIR-Air Issues&Regulation Grp	BDO Member Contributions	78,354	-	6,000	-	-	72,354	-	72,354	6,000
AIR-Air Issues&Regulation Grp	BDO Interest Income	-	-	-	28	-	-	38	38	(38)
AIR TOTAL		**78,354**	**-**	**6,000**	**28**	**-**	**72,354**	**38**	**72,392**	**5,962**
BAPPG-BayAreaPollutnPreventGrp	BDO Member Contributions	79,505	-	2,747	-	-	28,355	-	28,355	51,150
BAPPG-BayAreaPollutnPreventGrp	BDO Interest Income	3,079	-	-	40	-	-	82	82	2,997
BAPPG TOTAL		**82,584**	**-**	**2,747**	**40**	**-**	**28,355**	**82**	**28,437**	**54,147**
BACWA Legal Reserve Fnd	BDO Interest Income	-	-	-	241	-	-	514	514	(514)
LEGAL RSRV TOTAL		**-**	**-**	**-**	**241**	**-**	**-**	**514**	**514**	**(514)**
WQA-WtrQualityAttainmntStratgy	BDO Member Contributions	450,000	-	22,573	-	-	328,500	-	328,500	121,500
WQA-WtrQualityAttainmntStratgy	BDO Other Receipts	-	-	-	-	-	-	-	-	-
WQA-WtrQualityAttainmntStratgy	BDO Interest Income	1,600	-	-	280	-	-	523	523	1,077
WQA CBC TOTAL		**451,600**	**-**	**22,573**	**280**	**-**	**328,500**	**523**	**329,023**	**122,577**
BACWA OperatingRsrve Fnd	BDO Interest Income	-	-	-	121	-	-	258	258	(258)
BACWAOPRES TOTAL		**-**	**-**	**-**	**121**	**-**	**-**	**258**	**258**	**(258)**

BACWA Revenue Report for October 2012

DEPARTMENT	REVENUE TYPE	AMENDED BUDGET	CURRENT PERIOD			YEAR TO DATE				UNOBLIGATED
			DIRECT	INVOICED	JVS	DIRECT	INVOICED	JVS	ACTUAL	
Regional Water Recycling	BDO Interest Income	-	-	-	13	-	-	28	28	(28)
RWR TOTAL		-	-	-	**13**	-	-	**28**	**28**	**(28)**
WOT - Wtr/Wwtr Operat Training	BDO Member Contributions	150,000	-	6,000	-	-	140,500	-	140,500	9,500
WOT - Wtr/Wwtr Operat Training	BDO Interest Income	-	-	-	117	-	-	177	177	(177)
WOT TOTAL		**150,000**	-	**6,000**	**117**	-	**140,500**	**177**	**140,677**	**9,323**
Prop84BayAreaIntegRegnlWtrMgmt	BDO Interest Income	-	-	-	60	-	-	82	82	(82)
Prop84BayAreaIntegRegnlWtrMgmt	Administrative Support	-	-	-	-	-	71,569	-	71,569	(71,569)
Prop84BayAreaIntegRegnlWtrMgmt	Novato North Area Proj.	-	-	-	-	-	593,750	-	593,750	(593,750)
Prop84BayAreaIntegRegnlWtrMgmt	Sears Point Wtlnd & Wtrshd Res	-	-	-	-	-	6,667	-	6,667	(6,667)
Prop84BayAreaIntegRegnlWtrMgmt	Bair Island Restoration	-	-	-	-	-	6,667	-	6,667	(6,667)
Prop84BayAreaIntegRegnlWtrMgmt	South Bay Salt Pond Habitat Re	-	-	-	-	-	6,667	-	6,667	(6,667)
Prop84BayAreaIntegRegnlWtrMgmt	Regional Green Infrastructure	-	-	-	-	-	24,041	-	24,041	(24,041)
Prop84BayAreaIntegRegnlWtrMgmt	Watershed Partnership Technica	-	-	-	-	-	11,417	-	11,417	(11,417)
Prop84BayAreaIntegRegnlWtrMgmt	Stream Restoration w/Schools i	-	-	-	-	-	149,491	-	149,491	(149,491)
Prop84BayAreaIntegRegnlWtrMgmt	Flood Infrastructure Mapping	-	-	-	-	-	2,047	-	2,047	(2,047)
PRP84 TOTAL		-	-	-	**60**	-	**872,315**	**82**	**872,396**	**(872,396)**
WQA Emergency Resrve Fnd	BDO Interest Income	-	-	-	321	-	-	685	685	(685)
WQA EMERG TOTAL		-	-	-	**321**	-	-	**685**	**685**	**(685)**
WQA Tech Action Fund	BDO Interest Income	-	-	-	200	-	-	428	428	(428)
TECHACTION TOTAL		-	-	-	**200**	-	-	**428**	**428**	**(428)**
CBC Operating Resrve Fnd	BDO Interest Income	-	-	-	130	-	-	277	277	(277)
CBC OPRSRV TOTAL		-	-	-	**130**	-	-	**277**	**277**	**(277)**
Prop50BayAreaIntegRegnlWtrMgmt	BDO Interest Income	-	-	-	133	-	-	289	289	(289)
PRP50 TOTAL		-	-	-	**133**	-	-	**289**	**289**	**(289)**

BACWA Expense Report for October 2012

DEPARTMENT	EXPENSE TYPE	AMENDED BUDGET	CURRENT PERIOD				YEAR TO DATE				OBLIGATED	UNOBLIGATED
			ENC	PV	DA	JV	ENC	PV	DA	JV		
Bay Area Clean Water Agencies	BC-Collections System	25,000	(2,198)	2,198	-	-	19,562	5,438	-	-	25,000	-
Bay Area Clean Water Agencies	BC-Permit Committee	-	-	-	-	-	-	-	-	-	-	-
Bay Area Clean Water Agencies	BC-Water Recycling Committee	13,359	-	-	-	-	13,269	-	-	-	13,269	90
Bay Area Clean Water Agencies	BC-Biosolids Committee	6,515	-	-	-	-	570	945	-	-	1,515	5,000
Bay Area Clean Water Agencies	BC-InfoShare Groups	25,000	-	-	-	-	22,965	2,035	-	-	25,000	-
Bay Area Clean Water Agencies	BC-Laboratory Committee	7,000	-	-	-	-	-	-	-	-	-	7,000
Bay Area Clean Water Agencies	BC-Miscellaneous Committee Sup	140,000	-	-	-	-	122,358	22,293	-	(349)	144,302	(4,302)
Bay Area Clean Water Agencies	LS-Regulatory Support	2,000	-	-	-	-	1,693	307	-	-	2,000	-
Bay Area Clean Water Agencies	LS-Executive Board Support	2,000	(530)	530	-	-	1,470	530	-	-	2,000	-
Bay Area Clean Water Agencies	CAS-CWAA	1,000	-	-	-	-	-	-	-	-	-	1,000
Bay Area Clean Water Agencies	CAS-PSSEP	20,000	-	-	-	-	-	-	-	-	-	20,000
Bay Area Clean Water Agencies	CAS-CPSC	5,000	-	-	-	-	-	-	5,000	-	5,000	-
Bay Area Clean Water Agencies	CAS-PSI	500	-	-	-	-	-	-	-	-	-	500
Bay Area Clean Water Agencies	CAR-BACWA Annual Report	15,000	-	-	-	-	15,433	-	-	-	15,433	(433)
Bay Area Clean Water Agencies	CAR-BACWA Website Development/	10,720	-	-	-	-	11,694	815	600	(2,285)	10,824	(104)
Bay Area Clean Water Agencies	AS-BACWA Admin Expense	3,000	-	-	-	-	-	-	984	-	984	2,016
Bay Area Clean Water Agencies	CAR-Other Communications	5,000	-	-	-	-	2,000	-	-	-	2,000	3,000
Bay Area Clean Water Agencies	SP-BAPPG Contribution	50,000	-	-	-	-	-	-	-	-	-	50,000
Bay Area Clean Water Agencies	GBS-Contingency	30,000	-	-	-	-	21,000	4,000	10,478	(4,478)	31,000	(1,000)
Bay Area Clean Water Agencies	GBS- Meeting Support	13,000	-	-	-	-	800	200	347	-	1,347	11,653
Bay Area Clean Water Agencies	AS-Executive Director	160,000	-	-	-	-	11,649	23,290	-	-	34,939	125,061
Bay Area Clean Water Agencies	AS-Assistant Executive Directo	70,000	(4,815)	4,815	-	-	52,743	15,457	-	-	68,200	1,800
Bay Area Clean Water Agencies	AS-EBMUD Administrative Servic	40,000	-	-	-	-	40,000	-	-	-	40,000	-
Bay Area Clean Water Agencies	AS-Insurance	4,000	-	-	-	-	-	-	3,860	-	3,860	140
Bay Area Clean Water Agencies	BDO-CAS-Stanford ERC	10,000	-	-	-	-	-	-	-	-	-	10,000
BACWA TOTAL		**658,094**	**(7,543)**	**7,543**	**-**	**-**	**337,207**	**75,310**	**21,269**	**(7,112)**	**426,673**	**231,421**
AIR-Air Issues&Regulation Grp	Administrative Support	3,977	-	-	-	-	-	-	-	-	-	3,977
AIR-Air Issues&Regulation Grp	BDO Contract Expenses	79,556	-	-	-	-	79,556	-	-	-	79,556	-
AIR TOTAL		**83,533**	**-**	**-**	**-**	**-**	**79,556**	**-**	**-**	**-**	**79,556**	**3,977**
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Fog	14,000	-	-	-	-	-	-	-	-	-	14,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Mercury	-	-	-	-	-	-	-	-	-	-	-
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Pesticides	10,000	-	-	-	-	-	-	-	-	-	10,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Copper	5,000	-	-	-	-	-	-	4,833	-	4,833	167
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Pharmaceutical	7,499	(6,094)	6,094	-	-	-	6,499	-	-	6,499	1,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-General P2	-	-	-	-	-	-	-	-	-	-	-
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Emerging Issues	8,000	-	-	-	-	-	-	-	-	-	8,000
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Other	16,539	-	-	-	-	279	3,760	-	-	4,039	12,500
BAPPG-BayAreaPollutnPreventGrp	Administrative Support	3,800	-	-	-	-	-	-	-	-	-	3,800
BAPPG-BayAreaPollutnPreventGrp	BAPPG-CE-Multi-Pollutant	19,000	-	-	-	-	13,704	2,297	-	-	16,000	3,000
BAPPG TOTAL		**83,838**	**(6,094)**	**6,094**	**-**	**-**	**13,983**	**12,556**	**4,833**	**-**	**31,371**	**52,467**

BACWA Expense Report for October 2012

DEPARTMENT	EXPENSE TYPE	AMENDED BUDGET	CURRENT PERIOD				YEAR TO DATE				OBLIGATED	UNOBLIGATED
			ENC	PV	DA	JV	ENC	PV	DA	JV		
WQA-WtrQualityAttainmntStratgy	WQA-CE-Technical Support	525,838	(799)	799	-	-	65,651	49,931	-	(4,644)	110,938	414,900
WQA-WtrQualityAttainmntStratgy	WQA-CE-Collaborations & Sponso	65,000	-	-	-	-	-	-	15,000	-	15,000	50,000
WQA-WtrQualityAttainmntStratgy	WQA-CE-Commun. & Reporting	26,000	-	-	-	-	6,000	-	-	-	6,000	20,000
WQA-WtrQualityAttainmntStratgy	WQA-CE-Other	45,000	(4,778)	4,778	-	-	31,777	4,778	-	-	36,555	8,445
WQA CBC TOTAL		**661,838**	**(5,577)**	**5,577**	**-**	**-**	**103,428**	**54,709**	**15,000**	**(4,644)**	**168,493**	**493,345**
WOT - Wtr/Wwtr Operat Training	Administrative Support	2,500	-	-	-	-	-	-	-	-	-	2,500
WOT - Wtr/Wwtr Operat Training	BDO Contract Expenses	158,000	-	-	77,500	-	-	-	77,500	-	77,500	80,500
WOT TOTAL		**160,500**	**-**	**-**	**77,500**	**-**	**-**	**-**	**77,500**	**-**	**77,500**	**83,000**
Prop84BayAreaIntegRegnlWtrMgmt	Administrative Support	-	(120)	120	-	-	8,372	352	-	1,942	10,666	(10,666)
Prop84BayAreaIntegRegnlWtrMgmt	Novato North Area Proj.	-	-	-	-	-	-	-	593,750	-	593,750	(593,750)
Prop84BayAreaIntegRegnlWtrMgmt	Regional Green Infrastructure	-	-	-	-	-	-	-	24,041	-	24,041	(24,041)
Prop84BayAreaIntegRegnlWtrMgmt	Weather Based Irrigation Contr	-	-	-	-	-	-	-	162,955	-	162,955	(162,955)
PRP84 TOTAL		**-**	**(120)**	**120**	**-**	**-**	**8,372**	**352**	**780,746**	**1,942**	**791,411**	**(791,411)**
Prop50BayAreaIntegRegnlWtrMgmt	Administrative Support	-	-	-	-	-	887	113	-	-	1,000	(1,000)
Prop50BayAreaIntegRegnlWtrMgmt	BDO Contract Expenses	-	-	-	-	-	37,297	1,608	-	(1,608)	37,297	(37,297)
PRP50 TOTAL		**-**	**-**	**-**	**-**	**-**	**38,184**	**1,721**	**-**	**(1,608)**	**38,297**	**(38,297)**

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 3
FILE NO.: 12,490
MEETING DATE: January 3, 2013

TITLE: Amendment to DCM Proposition 84 Legal Support

☒ **MOTION** ☐ **RESOLUTION** ☐ **DISCUSSION**

RECOMMENDED ACTION

Amend an existing agreement with Day, Carter, Murphy to enable continued legal support in negotiating Proposition 84 agreements and approvals with the California Department of Water Resources (DWR) and Local Projects Sponsors (LPS), by extending the contract termination date to June 30, 2013.

SUMMARY

Amendment 3 to this current agreement with Day, Carter, Murphy (DCM) will extend the termination date of the contract allowing them to continue to provide legal counsel regarding Prop 84 grant administration.

Contract Background
DCM was BACWA's legal counsel in the negotiations with DWR and LPSs regarding the Proposition 50 grant currently administered by BACWA. Based on this experience and the recognition that similar legal issues would arise in the Proposition 84 negotiations, BACWA retained DCM to assist with the Proposition 84 negotiations.

In August 2011, BACWA entered into a contract with DCM for a total of $30,000 for Proposition 84 assistance. In March 2012 the Board approved contract Amendment 1 which increased the total contract value to $50,000 and authorized revised DCM billing rates for April 1, 2012 – June 30, 2013. Amendment 2, approved in June 2012, increased the contract amount to $55,000 and extended the termination date from June 30, 2012 to December 2012.

FISCAL IMPACT

This is a no-cost time extension amendment and has no direct impact the total value of this contract.

ALTERNATIVES

N/A

Attachments:

1. Contract Amendment 3

AMENDMENT NO. 3
TO
AGREEMENT BETWEEN
BAY AREA CLEAN WATER AGENCIES
AND
DAY CARTER, MURPHY
FOR
Prop 84 LegalSupport

This Amendment No. 3 is made this 3rd day of January, 2013, in the City of Oakland, County of Alameda, State of California, to that certain agreement dated August 1, 2011, File 12,490, Amendment 1 dated March 22, 2012, and Amendment 2, dated June 28, 2102 by and between Day, Carter, Murphy ("DCM") and Bay Area Clean Water Agencies, (BACWA) (the "Agreement") in consideration of the covenants hereinafter set forth.

The Agreement is hereby amended as follows:

1. BACWA and DCM agree to extend the termination date of the contract to June 30, 2013.

3. Except as herein expressly modified, the Agreement, Amendment 1, and Amendment 2 remain in full force and effect.

BAY AREA CLEAN WATER AGENCIES

By _____ Dated _____
Ben Horenstein, Chair Executive Board

DAY, CARTER, MURPHY

By _____ Dated _____
James Day, Partner

BACWA EIN: 94-3389334

{00916918.2}

EXECUTIVE BOARD AUTHORIZATION REQUEST

AGENDA NO.: 4
FILE NO.: 12,381
MEETING DATE: January 3, 2013

TITLE: BACWA Executive Board Approval to Amend Agreement with EPC

☒ **MOTION**_____ ☐ **RESOLUTION**_____

RECOMMENDED ACTION

Authorize Amendment 2 to the EPC Consultants, Inc. (EPC) agreement for Recycled Water Committee support to extend the termination date to June 30, 2013.

SUMMARY

This amendment will allow additional time for EPC to complete all work necessary to prepare the final report on BACWA agencies recycled water use and uses. The report is currently in draft form. Amendment 1, executed in July 2012 extended the original contract termination date to December 2012.

FISCAL IMPACT

There is no fiscal impact since this amendment is only authorizing a time extension to the current contract.

ALTERNATIVES

No other alternatives were considered as the terms of this contract are consistent with BACWA contracting policies.

Attachments:
1. EPC Amendment 2

AMENDMENT NO. 2
TO
AGREEMENT BETWEEN
BAY AREA CLEAN WATER AGENCIES
AND
EPC Consultants, Inc.
FOR
Recycled Water Committee Support

This Amendment No. 2 is made this 3rd day of January, 2013, in the City of Oakland, County of Alameda, State of California, to that certain agreement File 12,381 of March 24th , 2011 and Amendment 1 dated June 28, 2012 by and between EPC Consultants, Inc (EPC) and Bay Area Clean Water Agencies, (BACWA) (the "Agreement") in consideration of the covenants hereinafter set forth.

1. BACWA and EPC agree to extend the contract termination date to June 30, 2013.

2. Except as herein expressly modified, the Agreement and Amendment 1 remain in full force and effect.

BAY AREA CLEAN WATER AGENCIES

By _____ Dated _____
Ben Horenstein, Chair Executive Board

EPC CONSULTANTS, INC.

By _____ Dated _____

BACWA EIN: 94-3389334

Meeting Date: January 3, 2013
Prepared By: Catherine L. Allin, City of Millbrae
BAPPG Committee Chair

Committee Request for Board Action

- Acknowledge the following retiring BAPPG members who received Certificates of Appreciation under the BAPPG Recognition Program:
  - Cassie Prudhel, City of South San Francisco
  - Stephen Friday, City of Richmond
  - Charlie Freas, San Francisco International Airport

Successes

- *2012 Our Water Our World*

  Ten IPM Advocates completed the program in June. More than 250 retail employees have been trained through the program, with more to come. In the fall, the Greener Pesticides for Cleaner Waterways program furthered the advocates' work in 14 stores over the next two years. Annie Joseph will conduct additional training with the advocates. Orchard Supply Hardware and Home Depot increased their engagement with OWOW through increased display of less toxic products and 69% of the stores have had outreach events as well. We hope to create a partnership with Lowe's in the future. OWOW reps met with StopWaste.org staff to discuss coordination of related efforts, and are planning a similar one with BayFriendly Landscaping staff. Revision, translation, and reprinting of program materials are ongoing. Developing a bed bug fact sheet. Looking into doing a Spanish translation for the "10 most wanted."

- *FOG Holiday Outreach Program-Spanish*

  Univision aired paid advertisements and PSAs from November 19-22 (Thanksgiving), on radio stations KSOL (98.9 FM), KBRG (98.9-99.1 FM), and Univision's online stations (120 paid ads with not less than 90 free PSAs along with a banner) started December 18. Univision ran advertisements and PSAs again between December 21-31.

- *Presentations at December 5, 2012 General Meeting*

  Healthy Nail Salon Program—Swati Sharma, SF Dept of the Environment
  Regional Campaign—Athena Honore, SFEP/ABAG

- *Copper*

  Results of Consultant meeting with the Peninsula Chapter of the International Code Council (www.iccpeninsula.org). There was regional representation and an engineer from the Underwriters Laboratory (UL) who sits on the tech committee for the National Plumbing Code. Consultant provided the BAPPG copper plumbing presentation. Discussed finding non-compliant fluxes at the hardware/plumbing stores and some stores ONLY selling the non-compliant flux. Discovered non-compliant flux is legal for NON-POTABLE uses (i.e., cooling towers or industrial equipment). Issue: Difficult for Building Inspectors to enforce flux use because even if they see the non-compliant flux in the truck/job site, the plumber can say that is for some non-potable installations. Solution: Code change would be very helpful. Alternatives presented and under consideration:

1. Work with the local representative of the Copper Development Association (CDA) and two of the ICC members (from foster city and UL) to propose a code change to the National Plumbing Code to include NON-POTABLE uses for the required use of the ASTM water flushable flux. Submittals for change due Jan 3, 2013 for consideration for the national 2015 plumbing code edits. (3-year cycle, next opportunity 2016 for 2018 code edits)
2. Outreach to wholesalers and distributors.

3. Continue reaching out to Bay Area building inspectors.
4. Consider recommending an alteration in current ASTM standard.

Discussions and Action Items

BAPPG Steering Meeting on December 5, 2012 (8 attendees)

- Regional Board Update—Mercury/PCB regulations to be approved 12/12/12 including requirements to continue dtnal programs and be alert for and report PCB sources if found or NOT. Continuing work on P2 Guidelines for Reporting (NOT Guidance Document).
- Regional Campaign—Got Ants is putting up a website and ads which include guidance.
- Mercury in Hospitals—Karin and Robert are working on a Long Term care/Medical brochure based on CCCSD's brochure that was sent to medical offices in their service area. Robert to work on contract aspect. Karin will post Brochure on yahoo group. Hope to print brochure for all agencies who want them. Agencies can develop a contact list for Long Term care and medical offices for distribution (check with AMA and business license office). Will take $1500 from Hospital Audit Contract to print.
- Copper—Consultant to develop training for building inspector education regarding copper.
- General Outreach: Regional Poster for bayshore locations - Sharon from San Jose shared an opportunity to put Baywise contact on a regional poster that is posted at various locations on the bayshore. Approved budgeting amount of $860 to have Baywise printed on the sign to be posted in 60 locations.

BAPPG General Committee Meeting on December 5, 2012 (22 attendees)

- Members shared their recent EPA audit experiences.
- Requested members submit contact information for baywise and internal use.
- Requested members determine if their agencies would allow access to cloud file storage services such as dropbox.
- Green Chemistry Update–-Melody LaBella
  - The safer consumer products effort received a comment letter from the water industry
  - Kelly Moran anticipates another version of the regs in December with a 30 to 45 day comment period
  - 303d list for POCs was added back
  - DTSC will choose a handful of products likely that impact health more than H2O quality, Water is hoping for a least one product that is a water contaminant.
  - Any recommendations should come with documented benefits for govt agencies including compliance and cost savings.
  - Dylan is looking at 303dlist for potential priority products.
- February Presentations on Brominated Fire Retardants (DR. Petreus) and Green Chemistry (DTSC).
- Outreach Piece—Toilet cut out with the dirty dozen were discussed and people were interested in ordering for their agencies and as a group. Robert Cole is working on graphics and pricing with the company that did his dirty dozen brochure.

Next BAPPG General Meeting

February 6, 2013 10am – 12 pm
Elihu Harris State Building
1515 Clay Street, 2nd Floor, Room 12
Oakland, CA

Collection Systems Committee Report to BACWA Board

December 20, 2012
From: Dan Stevenson, Committee Chair
Prepared By: Andy Eggleston

Committee Request for Board Action: None

Highlights of New Items Discussed and Action Items

Tech-Topic: Trenchless Rehabilitation and Replacement

Jen Glynn, P.E., a Senior Project Manager with RMC Water and Environment and Board Member of the North American Society for Trenchless Technology (NASTT) gave a presentation on an overview of trenchless sewer rehabilitation and replacement techniques at our December 13 Collection Systems Committee meeting. Her presentation focused on pipes 15" in diameter and smaller. Trenchless techniques are an alternative to the more common open-cut methods, and are often preferable because they can be less disruptive, faster, and less expensive. Rather than digging a trench along the length of the pipeline to be repaired or replaced, trenchless techniques generally utilize two access pits, one at each end of the repair. Selecting a trenchless repair or replacement method depends on number of factors, including the condition of the existing pipe (for example, some methods rely on the existing pipe for at least some structural support). The presentation provided information on several available trenchless replacement techniques, including pipe reaming and pipe bursting or splitting. With these methods, the old pipe is basically cut or broken up in the ground and new pipe is pulled in along the original alignment. A number of trenchless rehabilitation methods were also discussed, including slip lining, cured-in-place pipe (CIPP), spiral wound liners, fold and form pipe, and lateral chemical grouting.

Jose Rodrigues of Union Sanitary District followed with a brief presentation on Pipe Patch, a small localized pipe lining product. District staff has been using this product for spot repairs (2' or 4' in length), on 6" to 21" diameter pipes within their service area, and have been honing their application techniques as they gain experience. For example, staff has outfitted an old CCTV truck specifically for use in these repairs, which is now fully equipped with supplies for these projects. The District has found the product to significantly reduce cost and time spent on repairs (compared to open-trench methods).

Emergency Bypass Success

Dante Marchetti of Central Contra Costa Sanitary District gave a brief presentation at the December 13 Committee meeting on an impressive emergency by-pass that District staff set up in response to a sink-hole that occurred in their service area during the recent storms.

Changes to SSS WDR Monitoring and Reporting Program Update

BACWA leadership has confirmed that State Water Board staff is still working on a "surgical" markup of the Monitoring and Reporting Program (MRP) of the Sanitary Sewer System (SSS) Waste Discharge Requirements (WDR). As of December 17, State Water Board Executive Director Tom Howard reported that he had received the latest version of the markup from his staff, and indicated that the document would be made available to stakeholders following his review and revisions. State Water Board staff hopes to have the document signed in January with a March effective date (to accompany some anticipated updates to the California Integrated Water Quality System (CIWQS)).

Upcoming Conferences and Meetings

NASTT's 2013 National No-Dig Conference will be held in Sacramento from March 3 - 7. Scholarships are available for municipal employees to attend the conference. More information is available online at www.nodigshow.com.

Next Collection System Committee Meeting

Our next meeting will be held on Thursday, January 24, 2013 from 1:30 – 3:00 PM at the California Endowment Conference Facility in Oakland, following the BACWA Annual Meeting.

Permits Committee – Report to BACWA Board

Reporting Date: 12/20/12
Executive Board Meeting Date: 1/3/13
Committee Chair: Jim Ervin

Committee Request for Board Action: None.

Adoption of Permits/Permit Amendments –

Dec – Mercury and PCBs Watershed Permit.

Recent EPA inspections: San Jose, Sunnyvale and EBDA were inspected during the week of 26 November. No significant discrepancies were reported. Permits and Lab committees discussed basic inspection preparation procedures and experiences.

Water Board staff updates: Lila Tang, Bill Johnson, and Robert Schlipf attended the Joint Permits and Lab Committee Luncheon. Lila reported that Water Board staff is essentially at the full staff level – no significant changes.

Mercury & PCBs Watershed Permit: This permit was adopted on 12 December:

1. Dischargers no longer sample effluent for methlymercury.
2. Quarterly PCBs monitoring by method 1668C now only has to evaluate 66 congeners vice the 209 previously required (– see footnote (8) on page E-4 and table F-14.)
3. Dischargers no longer participate in a separate BACWA group mercury annual report.
4. Mercury and PCBs source control and risk reduction requirements – see bottom of page 16 to page 17.
5. Read the compliance summary on pages F-11 thru F-12. Wastewater dischargers are well below allocations.

Palo Alto and Delta Diablo are performing their own interlaboratory comparisons of PCBs analyses in 2013. Frontier Analytical has announced that it is now offering PCBs method 1668C analyses.

Tim Potter commented that EPA is still evaluating the Federal Dental Amalgam Rule which could impose requirements regarding regulation and inspection of dental offices.

Nutrients 13267: Richard Looker from Water Board staff reported that many agencies are not transmitting Nutrient 13267 data correctly. Most agencies are modifying the spreadsheet or not also sending corresponding MS-DOS.csv files.

Jim Ervin provided the list of affected agencies at the meeting and via email and also resent the most recent reporting excel spreadsheet. Each agency will make corrections prior to the next 13267 submission in January. A new Excel summary of all agency results was also sent out (37 agencies summarized.)

Toxicity Policy: The State Board is now intending to adopt this policy as a "Plan" so that it can be amended into the SIP. Public review of the "Plan" has now been delayed until late Spring. Adoption may occur in summer 2013. CASA continues to urge phasing of implementation.

- Jim Kelly and Lorien will continue discussion with Region 2 staff to resolve toxicity "Plan" regarding Reasonable Potential for Acute testing and application of instream waste concentration.

Training Announcement: Tim Potter announced that with the P3S the Annual P3S Conference will be held on 25-27 February in Napa. The conference provides good training opportunity for pretreatment personnel. http://www.cwea.org/et_attendees_conferences.shtml

Next BACWA Permits Committee Meeting: Tuesday, December 11th, 2012, at EBMUD Plant Library.

Nutrient 13267 - 1st Quarter - Influent (mg/l)

	Flow	TKN	NO3	NO2	Total NH3	TP	DRP	TSS	
San Jose	104.9	47	0.2	0.090	31	7.7	4.5	317	
EBMUD	58.0	49	0.08	0.086	30	10	4.6	340	
SFPUC	59.4	49	4.7	0.070	38	6.4	11.4	249	
CCCSD	35.5	46	0.5	0.300	31	6.0	2.7	262	
EBDA USD	24.6	47	0	0.053	31	5.9	3.1	260	
EBDA Hayward	11.3	57	0	0.000	34	7.5	1.6	270	
EBDA Ora Loma	12.1	39	0.67	0.310	19	4.7	4.1	356	
EBDA San Leandro	5.2	50	0	0.000	25	6.4	4.8	352	
Palo Alto	21.0	45	0.1	0.012	35	6.4	4.0	291	
SBSA	11.3	60	0.3	0.300	42	6.2	10.0	290	
Vallejo	9.0	46	0.1	0.000	30	4.4	3.2	251	
Sunnyvale	13.4	43	0.5	0.180	34	5.8	3.7	323	
Dub-San Ramon	10.4	49	0.08	0.021	33	5.1	3.5	168	
DDSD	12.9	46	0.039	0.018	32	7.5	3.4	316	
Fairfield-Suisun	12.2	54	0.1	[redacted]	35	8.1	6.2	332	
South SF - San Bruno	8.7	53	0.035	0.036	35	8.1	5.6	368	
CMSA	8.2	62	0.85	0.000	41	8.7	4.3	396	
Livermore	6.7	55	0.1	0.020	41	6.0	5.7	190	
Petaluma	5.8	52	0	0.000	35	7.8	7	230	
West County	5.8	59	0.069	[redacted]	42	6.4	5.1	514	
Novato	4.2	45	0.4	[redacted]	36	5.7	5.3	387	
Sonoma Valley	3.9	37	0.2	0.200	20	6.1	3.1		Low NH3 - High organic N from wineries
Burlingame WWTF	3.0	52	0.04	0.020	35	5.8	3.8	370	
Pinole	2.6	45	11.8	7.700	30	5.2	4.7	291	
Benicia	2.4	47	0.08	[redacted]	36	5.1	4.1	313	
Las Gallinas	2.1	46	ND	0.100	36	6.4	6.7	196	
SASM	2.0	41	0.74	[redacted]	26	3	4	279	
Mount View	1.6	45	0.05	[redacted]	32	6.1	3.5	204	
Millbrae	1.4	52	0.31	[redacted]	34	5.5	3.5	468	
Sausalito-Marin	1.4	45	0.12	0.4	29	4.1	3.2	290	
SF Airport	1.0								
Rodeo	0.6	41	1.0	1.000	29	4.5	3.4	278	
St Helena	0.4	56	0.1	0.1	38	9.8		313	
Yountville	0.4	40	0.1	0.03	27	5.5	3.2	159	
Calistoga - single sample - c	0.3	34	0.1	0.100	27	4.7	3.5	170	
TI	0.3	30	7.9	0.040	23	3.6	5.9	135	
American Canyon	0.2	23	28	2.9	17	11	8.3	94	
Mean	12.5	48	0.9	0.399	32	6.2	4.7	292	
Max	104.9	62	28.0	7.700	42	11.0	11.4	514	
Min	0.2	23	0.0	0.000	17	3.0	1.6	94	

Nutrient 13267 Data - combined 1st quarter
Influent

Nutrient 13267 - 1st Quarter - Effluent (mg/l)

		Flow	TDN	TKN	SKN	NO3	NO2	Total NH3	Urea**	TP	TDP	DRP	TSS	Total N % removal	Total P % removal	
Advanced Secondary	San Jose	85.1	12.8	1.2	1.0	11.7	0.093	0.48	0.070	0.32	0.28	0.22	1.6	0.73	0.96	
	Palo Alto	21.9	27.7	0.8	0.7	26.9	0.129	0.04		4.5	4.5	4.3	1.1	0.37	0.29	
	Sunnyvale	7.7	24.2	3.1	2.4	21.7	0.100	0.70		8.0	7.7	7.6	8.7			
	Fairfield Suisun	11.7	30.0	0.7	0.2	29.5	0.010	0.03		4.9	4.8	4.6	0.1	0.45	0.47	
	Mount View	1.3	16.0	0.7	0.4	23.3	0.016	0.23		3.9	3.7	3.5	3.0			
	American Canyon	1.3	9.8	1.2	1.3	8.5	0.035	0.25		5.5	5.4	5.0	ND	0.44		
	Mean	25.5	22.2	1.3	0.9	22.6	0.070	0.30	0.070	4.3	4.2	4.1	2.9			
Secondary	EBMUD	52	47.9	44.2	41.3	5.0	1.46	38.1	0.32	4.9	4.1	2.8	20	0.0	0.52	
	SFPUC	53.3	41.7	40.3	39.6	1.7	0.37	38.9	0.39	0.8	0.2	1.6	15.9	0.21	0.88	
	EBDA	56.2	34.8	32.0	31.1	2.2	1.60	28.0	...	2.4	2.1	22.9	10.8	0.24	0.60	
	CCCSD	33.0	29.5	28.7	28.4	0.5	0.60	26.2	0.20	1.1	0.9	0.6	7.9			
	SBSA	12.9	40.5	41.3	39.8	0.4	0.40	38.5		3.5	3.2	4.6	4.6	0.31	0.43	
	Vallejo	9.1	21.4	14.2	12.3	8.2	0.83	10.6		3.9	3.5	3.2	11.8	0.49	0.16	
	South SF - San Bruno	8.7	33.5	31.2	30.8	0.9	1.80	29.8		3.9	4.8	3.6	7.5	0.40	0.50	
	Dub-San Ramon	8.0		30.0		0.3	0.60	29.0		0.7		0.7	23.0	0.37	0.87	
	West County	7.0	26.2	25.7	25.0	1.5	0.22	23.7		2.0	2.0	1.6	12.5	0.54	0.70	
	DDSD	5.7	64.6	29.2	29.7	30.2	4.80	29.2		1.5	1.4	0.8	13.5	-0.39	0.81	Recycled blowdown
	CMSA	5.8	41.9	39.5	38.5	2.7	0.72	38.3		4.2	4.4	3.7	5.3	0.0	0.50	
	Livermore	3.5	0.3	47.0	...	0.0	0.25	44.0		0.8	...	0.6	6.0	0.1	0.86	
	Pinole	2.8	39.6	32.3	31.3	6.6	1.67	29.7		3.9	3.7	3.7	13.0			
	Burlingame WWTF	2.7	27.3	24.0	23.3	3.4	0.62	21.4		5.3	3.7	1.6	7.1			
	Benicia	2.0	26.8	22.7	21.7	2.1	3.00	25.7		3.9	3.4	3.2	5.3			
	Millbrae	1.3	43.9	44.7	43.7	0.1	0.16	41.3		3.7	3.2	3.2	10.0			
	Sausalto-Marin	1.3	24.9	12.3	11.3	12.1	1.44	10.7		5.2	5.0	4.6	15.0	0.38		
	SF Airport	1.0	55.7	54.7	51.3	3.6	0.87	41.1		4.2	4.0	2.2	10.4	0.40	0.61	
	Mean	14.8	35.3	33.0	31.2	4.5	1.19	30.2	0.3	3.1	3.1	3.6	11.1			
Secondary + ??	Petaluma	5.8	2.8	3.1	2.8	0.0	0.0	1.3		1.9	1.9	1.7	1.6	0.94	0.76	
	Novato	4.2	13.8	1.8	1.5	12.0	0.30	0.53		0.3	0.2	0.0	2.5	0.31	0.96	
	Sonoma Valley	3.2	24.9	0.9	0.7	24.0	0.20	0.25		3.7	3.3	3.8	1.7	0.33	0.39	
	Las Gallinas	2.1	26.6	3.1	2.5	24.0	0.08	1.6		5.7	4.4	4.4	1.6	0.18	0.70	
	SASM	2.0	19.1	5.4	4.3	14.3	0.50	2.8		5.2	5.0	4.7	19.3			
	Mean	3.5	17.4	2.9	2.4	14.9	0.2	1.3		3.4	3.0	2.9	5.3	0.4	0.7	
Tiny Plants	St Helena	0.9	11.1	19.0	11.0	0.1	0.03	8.3		9.8	9.3	3.1	50.0			
	Calistoga - single sample - o	0.7	19.6	0.7	0.5	19.0	0.1	0.1		4.0	3.2	3.8	3.0	14.9		
	Rodeo	0.6	10.0	4.9	4.5	11.8	0.3	3.8		4.3	4.1	3.8	3.3			
	Yountville	0.4	29.0	7.6	7.8	21.0	0.2	8.2		4.1	3.9	4.0	0.0	0.28	0.25	
	TI	0.3	9.1	3.6	2.6	6.4	0.0	0.1		2.0	0.5	3.4	11.3	0.74	0.44	
	Mean	0.6	15.7	7.1	5.3	11.7	0.1	4.1		4.8	4.2	3.6	13.5			

Nutrient 13267 Data - combined 1st quarter
Effluent Conc

Nutrient 13267 - 1st Quarter - Effluent (Kg/d)

		Flow MGD	TDN	TKN	SKN	NO3	NO2	Total NH3	Urea**	TP	TDP	DRP	TSS	Total N % removal	Total P % removal	
Advanced Secondary	San Jose	85.1	4137	386	333	3774	29.9	155.7	11.6	102	91	96	523	0.78	0.97	
	Palo Alto	21.9	2291	69	58	2220	10.5	3.2		374	370	473	88	0.35	0.27	
	Sunnyvale	8.8	709	91	70	635	4.2	22.4		233	226	219	261			
	Fairfield Suisun	11.7	1327	29	11	1305	0.5	1.4		216	213	330	0	0.48	0.50	
	Mount View	1.3	76	3	2	119	0.04	0.9		20	19	31	8			
	American Canyon	1.3	47	6	6	41	0.2	1.2		26	26	28	ND			
	Mean	31.9	1708	115	95	1610	11.3	45.7	11.6	189	184	230	176			
Secondary	EBMUD	52	8492	8712	8105	998	293.3	7508.7	30.8	969	678	756	3927	0.07	0.56	
	SFPUC	53.3	8401	8127	7989	340	71.4	7839.2	39.8	152	29	455	3216	0.29	0.89	
	EBDA	56.2	7413	6803	6613	459	340.3	5954.5		505	447		2301			
	CCCSD	33	3674	3566	3530	64	80	3258.2	24.7	133	106	76	975			
	SBSA	12.9	1977	2014	1942	17	18.2	1848.3		172	157	289	221	0.21	0.39	
	Vallejo	9.1	736	487	424	284	28.4	363.2		134	120	109	408	0.49	0.02	
	South SF - San Bruno	8.7	1102	1025	1014	29	59.2	980.1		129	156	202	148	0.40	0.50	
	Dub-San Ramon	8.0	28	908		10	18.2	878.1		20		34	696	0.51	0.90	
	West County	7.0	695	680	662	30	5.0	626.6		52	53	50	335	0.59	0.78	
	DDSD	5.7	1356	635	644	600	111.7	632.5		32	31	34	284	0.40	0.91	Recycled blowdown
	CMSA	5.8	916	862	842	58	15.8	837.4		92	95	124	115	0.51954	0.65	
	Livermore	3.5	3	626	…	0	3.3	583.6		11	…	9	80			
	Pinole	2.8														
	Burlingame WWTF	2.7	261	213	199	54	7.2	166.9		52	40	40	69			
	Benicia	2.0	207	175	167	16	23.5	197.9		30	26	53	41			
	Millbrae	1.3	219	223	217	1	0.9	207.6		19	16	16	53	0.58		
	Sausalto-Marin	1.3	118	59	54	58	6.9	50.6		25	24	46	73	0.48		
	SF Airport	1.0	219	215	202	14	3.2	158.0		16	14	9	41	0.40	0.61	
	Mean	14.8	2107	2078	2174	178	63.9	1887.7	31.8	150	133	144	764	0.39	0.62	
Secondary + ??	Petaluma	5.8	54	59	54	0	0.0	24.9		36	36	47	31	0.94	0.74	
	Novato	4.2	220	29	24	192	4.5	8.5		4	3	1	40	0.69	0.96	
	Sonoma Valley	3.2	299	11	8	289	2.4	3.0		45	40	46	20	0.45	0.51	
	Las Gallinas	2.1	207	24	19	18	0.6	12.5		44	34	61	13			
	SASM	2.0	143	40	32	107	3.5	21.3		39	33	65	145	0.53		
	Mean	3.5	184.5	32.6	27.4	121.1	2.2	14.0		33.6	29.1	43.9	49.7	0.7	0.7	
Tiny Plants	St Helena	0.93	39.25	67.01	38.8	0.35	0.106	29.3		34.6	32.8	10.9	176			
	Calistoga - single sample - ol	0.7	52	2	1	51	0.3	0.4		11	9	11	8			
	Rodeo	0.6	35	10	10	25	0.6	8.1		9	9	19	7			
	Yountville	0.4	41	11	11	30	0.3	11.6		6	6	6	0	0.28	0.25	
	TI	0.3	10	4	3	7	0.0	0.1		2	1	4	13	0.75	0.47	
	Mean	0.5	35	7	6	28	0.3	5.0		7	6	10	7			
	Totals	*416*	*45503*	*36168*	*33284*	*11844*	*1144*	*32396*	*107*	*3742*	*3136*	*3750*	*14315*			

Nutrient 13267 Data - combined 1st quarter
Effluent Loads

Recycled Water Committee Report to BACWA Board

December 20, 2012

Prepared By: Cheryl Muñoz
Committee Chair

Committee Requests for Board Action:

None.

Business Discussed and Action Items:

Business	Discussion
BAIRWMP and Prop 84 Updates	Prop 84/BAIRWMP Updates • Update on BAIRWMP Activities o Chapter Updates – Resource Management Strategies, Financing, and Stakeholder Engagement chapters are in draft form and are being reviewed by the Project Update Team. o Project Review – Projects that were submitted by the September 7, 2012 deadline for inclusion in the BAIRWMP, were scored and ranked based on the Project Scoring and Ranking Methodology that was developed (incorporates the BAIRWMP Goals & Objectives and scoring metrics). o Public Workshops – Next public workshop is scheduled for January 28, 2013 from 4-6 pm at StopWaste.org. • Update on Prop 84 Activities o Round 2 Project Submission - 67 projects were submitted for requesting $110M ($20M available to Bay Area in Round 2) o As the Recycled Water Wastewater Functional Area leads, the BACWA Recycled Water Committee evaluated all of the recycled water/wastewater projects submitted, and selected five projects totaling $5M. The list of projects was forwarded to the Project Screening Committee for further evaluation with projects from the other three Functional Areas. o Options for Composition of Suite of Round 2 Projects –The Project Screening Committee is developing a number of options for projects that would be submitted for Round 2 funding. The options included suites of projects with the emphasis on the most integrated (DWR criteria and factors), Functional Area, sub-regional, climate change Project Ranking. The options will be forwarded to the Coordinating Committee in December 2012 for consideration. • Information on the BAIRWMP/Prop 84 status can be found at http://bairwmp.org/

Legislative/Regulatory Updates	AB 2398 (Water Recycling Act of 2012) Update • Work continues to revise the language of the bill. The current language focuses primarily on revising regulations for potable reuse projects, but may be changing to include language on non-potable reuse projects as well. Title XVI Update- Bay Area Recycled Water Coalition • The Coalition is continuing to solicit new membership. Some agencies/cities in the Central Valley are interested in joining the Coalition which would expand the group's purview from the Bay Area. • The Coalition is working with Congress on the development of a water infrastructure low-interest loan program. CA Medical Association • The CMA adopted Resolution No. 118A-12 encouraging efforts to establish and expand non-potable and potable reuse in California.
Projects	Recycled Water Survey • EPC Consultants are finalizing the survey report. It will be available in early 2013.
Agency Projects and Announcements	North Bay Water Users Association • The Phase 2 Project Definition Scoping Study was completed and available online at http://www.nbwra.org/docs/index.html. The purpose of the Phase 2 studies is to explore options for recycled water use and, as feasible, to develop a program expanding recycled water use within the North San Pablo Bay region beyond the projects currently being constructed as Phase 1 of the NBWRP. SFPUC • A project dedication breakfast was held on 12/ /12 for the Harding Park Recycled Water Project. The project is a partnership between the SFPUC, Daly City and the CA Department of Water Resources (Prop 84 funding). On-line Site Supervisor Training Program • The WateReuse Association CA Section is working on developing an on-line Recycled Water Site Supervisor Training Program that will be available to its membership. Irvine Ranch Water District is preparing a Request for Proposals for consultant services to implement the computer-based training.
Next RW Committee Meeting	January 9, 2012, from 10:00 am to 12:00 pm EBMUD Headquarters, 6th Floor Conference Rooms A & B.

Director's Report to the Board

November 21-December 29, 2012
Prepared for the January 3, 2013 Executive Board Meeting

NUTRIENTs:

13267 Letter: Following up on data and how to transfer to RWQCB.

REGULATORY FRAMEWORK/PERMITING STRATEGY: Met with Regional Board to further define what might be required in a watershed permit for LWA to develop a comparison "pro/Con" document for a follow up discussion between BACWA and the RWQCB. The draft comparison document is in the agenda packet.

NUTRIENT STRATEGY: Discussed status of SFEI effort with Dave Senn: Confirmed scope changes, worked with Dave on the decision tree and BAR for GG transfer.

Freshwater Cyanotoxin Workshop: Attended conference held in Oakland November 28th.

Selenium: Met with WSPA representatives and held telephone conversations with their consultant re status of WSPA studies. Followed up on SFEI report on Se speciation and status of TMDL for North Bay. This is on the agenda for the January 3, 2013 Board meeting.

Annual Meeting: Finalize agenda and speakers.

Review and Comment on SSS MRP PROPOSED REVISIONS: Proposed changes are being prepared by the SWRCB they still have not been released.

RWQCB/BACWA MEETING: Scheduled meeting for January 11th to discuss Regulatory Framework, Nutrient Strategy Oversight, and other topics.

REGULATORY PROGRAM MANAGER (RPM): See RPM report in the agenda packet.

DRAFT POLICY FOR TOXICITY ASSESSMENT AND CONTROL: See RPM's report for more information

MEETINGS ATTENDED: Permits Committee; RWQCB meeting (Testified on PCB/Hg Watershed Permit); Stakeholder Advisory Group Meeting; Meeting with RB2 Staff, LWA and Lorien Fono to discuss Tentative Order for the Hg/PCB Watershed Permit.

DISMISS PETITIONS: Gained concurrence to dismiss all but two petitions. They may be agreed upon by the meeting. Good feed back was received from the Associates, and many of them are conducting master plans for their plants.

MISCELLANEOUS:

-Answered miscellaneous questions of from the public.

-Laypersons Guide: Work with Board to name a BACWA representative for the editorial board.

FUTURE ITEMS:

FOLLOWUP ON SACRAMENTO REGIONAL PERMIT: Does Board want to consider potential next steps?

SUISUN BAY: January 31, 2013.

RWQCB/ BACWA JOINT MEETING: January 11, 2013

NPDES PERMIT PETITION DISMISSAL: Finish last two.

NUTRIENT SUMMIT: Attend meeting with SWRCB: Date TBD

FUTURE MEETING: Hold at SFPUC's new offices?

AIR COMMITTEE: Work with Air Committee Leadership to develop fee and funding alternatives, and contact Air Board regarding a number of issues.

Hg/PCB WATERSHED PERMIT: Follow-up on risk reduction; and method verification.

TECHNOLOGY RESEARCH & DEVELOPMENT: Follow up with Isle Utilities Technology Approval Group (TAG) to determine if BACWA member representatives could attend a future TAG Meeting.

WATERSHED PERMIT REISSUANCE/PCB DATA: Worked with RB staff on response to our comments on the Tentative Order. Watershed permit adopted at Board Meeting on 12/12. Based on BCWA's oral comments made at the Board Meeting, Board members expressed concerns about PCB data quality, and Member Young asked how permit might be reopened if there is new information on method 1668C. Lila said it could be addressed through a "minor modification" of permit, unless they had to stop monitoring, in which case it would go back to Board. Member McGrath pointed out the need to address the relative contributions of wastewater and stormwater.

DRAFT PLAN FOR TOXICITY ASSESSMENT AND CONTROL: Policy adoption is delayed until spring, and is now a "Plan", not a "Policy". Adoption is targeted for Summer 2013. Held call with workgroup to address acute toxicity and IWC, and communicated with RB staff on these items. Per RB staff, it is likely that new draft of the plan will include a phased approach, and perhaps a change in how acute toxicity reasonable potential is assessed. RB has communicated with State Board staff requesting discretion in using existing data to calculate reasonable potential.

CECs: Met with RB staff and Karin North to work out outline for article on CECs management for the pulse. Developed and distributed more detailed outline. Will continue to work with TED/ED to determine level of involvement moving forward.

STATE BOARD REALIGNMENT: Participated in conference call with NPDES stakeholder to identify potential cost-saving program ideas. Developed a write-up discussing how contributions to TMDL implementation programs should be proportional to source allocations. Other issues being developed are included in attached meeting notes.

EPA DISINVESTMENT IN BIOSOLIDS ENFORCEMENT: EPA was considering, but seems to have partially backed off from, plans to disinvest from biosolids enforcement. Fortunately, this issue does not have a direct impact in the near term for CA, because Region 9 has decided to provide the funding required to maintain program oversight by Lauren Fondahl. The potential indirect impact is that the lack of oversight in another part of the country could have a mismanagement incident due to lack of oversight that grows to threaten long-standing biosolids management practices (i.e., land application). Last communication from EPA to Greg Kester of CASA was that they would continue to fund 2 national positions out of Region 7. Request Board direction on whether to engage further on this issue.

NUTRIENTS: Met with LWA and RB staff to discuss watershed permit concept, including what a watershed permit would include, and the overarching regulatory framework. Commented on TED's notes from meetings.

MEETINGS ATTENDED:, Resource Alignment Teleconference (12/6), Meeting with RB Staff on Pulse CEC article (12/5), Meetings with RB staff on Nutrient Watershed Permit Concept (12/11 and 12/12), Permits Committee (12/11), Regional Board Meeting (12/12), Tri-TAC (12/14).

NEXT MONTH

- Toxicity: will plan to meet with Regional Board staff to hammer out approach to IWC and acute toxicity
- Work on Pulse article on CECs
- Continue to assist TED with Watershed Permit concepts
- Assist TED to prepare for Annual Meeting, and prepare annual issues summary for membership
- Assist with nutrient data collection for the 13267 letter as needed

Meeting Notes
POTW Resource Realignment
Conference Call

December 6, 2012
10:00 a.m. to Noon

Meeting Participants

Jacki Kepke, EBMUD	John Pastore, SCAP
Bobbi Larson, CASA	Beverly Hann, Carollo Engineers
Terrie Mitchell, SRCSD	Monica Oakley, RMC Water
Betsy Elzufon, Larry Walker Associates	Linda Garcia, WMWD
Rebecca Franklin, City of San Bernardino Water Dept.	Dennis Laniohan, DDSD
Jennifer Shepardson, City of San Bernardino Water Dept.	Lorien Fono, BACWA

The group brainstormed ideas for wastewater agency cost savings and identified the following potential proposals. By December 18, 2012, a short (1 to 2 paragraph) description of each will be developed by the responsible person(s) and emailed to Bobbi Larson (blarson@casaweb.org) and Jackie Kepke (jkepke@ebmud.com) that identifies the following:

- Issue or requirement associated with POTW costs
- Concept for addressing issue/reducing POTW costs
- Rough estimate of potential savings (low, moderate, major)

The list of issues will be reported to the State Water Board in January and those deemed to meet the State Water Board's criteria will be further developed into detailed proposals.

Issue	Proposal	Responsible Person(s)
1. Penalties/costs associated with SSO enforcement action	Tiered/progressive approach to enforcement beginning with inspection/correction	Monica Oakley
2. Regional Monitoring	More streamlined approach to allow monitoring to be reduced/discontinued	Sharon Green, Betsy Elzufon
3. Disproportionate study/other actions required of de minimis point sources under TMDLs	Policy that burden of studies, etc. be proportionate to the loadings of source categories	Lorien Fono, Terrie Mitchell

Issue	Proposal	Responsible Person(s)
4. High costs to eliminate blending	Allow POTWs to conduct monitoring, studies to demonstrate no WQ impact from blending	Monica Oakley
5. Uncertainty/ inconsistent application of process for UAAs and site specific objectives	Develop procedures/guidelines for these actions, based on a review of successful UAAs, SSOs	Sharon Green
6. Costs associated with mercury WLAs	Establish phased approach to POTW WLA implementation that specifies P2 as first phase	Sharon Green
7. Costs/burdens on recycled water systems of emergency discharge prohibition	Develop alternative approach that allows agencies to maximize RW use	Monica Oakley
8. Unnecessary sanitary sewer overflow monitoring and reporting	Revise SSO MRP	Bobbi Larson, Dennis Laniohan
9. Unnecessary/duplicative sampling of TSS	Allow turbidity measure to serve as indicator of TSS	Dennis Laniohan

CHAIR AUTHORIZATION REQUEST

FILE NO.: 12,855

DATE: November 28, 2012

TITLE: Chair Authorization for Agreement with Hanson Bridgett LLP for Executive Director Recruitment Legal Assistance

RECOMMENDED ACTION

BACWA Chair authorization for an agreement with Hanson Bridgett LLP, in an amount not to exceed $9,999, for Executive Director recruitment legal assistance during the period of November 28, 2012 – June 30, 2013.

SUMMARY

This agreement will allow the BACWA Board to obtain legal assistance required for the Executive Director recruitment process. This contract will be managed by Laura Pagano, of the San Francisco Public Utilities Commission. The BACWA Chair has delegated his authority to approve agreements under $10,000 to the Vice Chair, Laura Pagano, to acquire these services.

FISCAL IMPACT

This project will be funded by the BACWA Contingency FY 2012-13 budget line item. Primarily due to Executive Director recruitment costs, this line item currently has encumbered $1,000 more than originally allotted for this fiscal year and this agreement will result in an exceedance of $10,999.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. HB 2012-13, 12,855 Scope of Work

JOAN L. CASSMAN
PARTNER
DIRECT DIAL (415) 995-5021
DIRECT FAX (415) 995-3414
E-MAIL jcassman@hansonbridgett.com

HansonBridgett

November 28, 2012

Laura Pagano
Regulatory Program Manager
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 11th Floor
San Francisco CA 94102

Re: Engagement Letter

Dear Laura:

It was a pleasure to speak with you about your matter. This letter will confirm your engagement of Hanson Bridgett LLP to provide legal services to the Bay Area Clean Water Agencies (BACWA). Our engagement will involve reviewing, analyzing and advising on conflicts of interest issues related to the recruitment of the Executive Director of BACWA. We look forward to working with BACWA in resolving these issues. If we can assist BACWA in other areas, please let me know.

The attached Billing and Policy Summary provides details as to our representation. We have also attached the firm's W-9 form which specifies our ID number is 94-1205338.

I will be the attorney responsible for this matter. My billing rate is $425 per hour. I will be assisted by Shayna van Hoften whose hourly rate is $335. When appropriate, we use attorneys, paralegals, and legal research assistants at different hourly rates to handle work commensurate with their experience and expertise. Attorneys with special expertise in a given area may become involved in your representation from time to time, with your approval.

As is typically the case, the estimated cost of our services derives from the required time commitment. There are various levels of analysis involved here and the time devoted to this project will largely depend on the number of levels we will need to penetrate. For instance, if we find that the rules on incompatibility apply, we will not need to drill down to 1090 and Political Reform Act analyses. We recognize that your contract authority limit is $10,000. Please be assured we will approach this matter in a cost effective manner.

Our invoices contain a detailed narrative of the services rendered, together with the name of the attorney or paralegal involved, the time spent, and the amount charged. I will direct our invoices to your attention.

We realize there are many qualified firms to choose from and are pleased you have selected our firm to assist you with your matter. We care deeply about our clients and are proud to say we have many clients who have been with our firm for more than 50 years. We strive to provide

exceptional client service to all of our clients. We welcome BACWA as a valued client and look forward to assisting in the achievement of your objectives. You can obtain more information about my background and our firm's services from our website, www.hansonbridgett.com.

Very truly yours,

Joan L. Cassman

Attachment

BACWA CHAIR / EXECUTIVE DIRECTOR AUTHORIZATION REQUEST

FILE NO.: 12,872

DATE: 12/04/12

TITLE: International Contact for BAPPG FY 2012/13

RECOMMENDED ACTION

Chair authorization for an agreement with International Contact in an amount not to exceed $313.00 for translation services for the BAPPG Copper Algaecide project FY 2012/13, to be completed by December 31, 2012. BAPPG members will perform proofing of document to realize a cost savings of $105.00.

SUMMARY

This contract will provide translation of the Our Water Our World Pools (OWOW), Spas, and Fountains Maintenance Fact Sheet from English to Spanish for posting to the Bay Area Pollution Prevention Committee's Baywise website and the OWOW website, as well as be available for printing on an as needed basis.

This work will be carried out under the supervision of Catherine L. Allin, City of Millbrae.

FISCAL IMPACT

The Copper Algaecide line item budget is $5000.00. $4833.00 was used for printing the English version leaving an available balance of $167.00. An additional $146 is needed to complete translation. There are sufficient funds in the BAPPG account to pay for this project. BAPPG has funds allocated to the BAPPG "Unplanned Issues" budget line ($8000) that will not be spent or obligated before the end of the fiscal year. Therefore, this project will not cause BAPPG's actual year-end expenses to be greater than that for which they budgeted.

ALTERNATIVES

No other alternatives were considered as the BACWA contracting policies authorize a sole source selection process for contracts under $50,000.

Attachments:

1. Estimate Terms and Agreement

Approved By: James M. Kelly	Date: 12/14/2012

INTERNATIONAL CONTACT, INC. ESTIMATE TERMS & CONDITIONS

The estimated price shown on the front of this form cannot be confirmed until International Contact has reviewed all original materials. In the event that a discrepancy occurs between the estimate and the work performed, a change order must be submitted and approved.

Project will be started upon receipt of a signed copy of this estimate. Services and materials provided by client are necessary for production; failure to provide them in a timely manner can produce serious budget overruns. Client will be solely responsible for failure to provide required materials.

International Contact exercises best efforts to deliver accurate, effective translations; however, we cannot be responsible for the content of the material. Thus, we require that clients approve their translations or specifically release International Contact's liability in writing before production begins. *

Translation and copy editing fees include one re-write per client's corrections. Consultation or re-translation services regarding the copy will be billed at an hourly rate of $75.00 per hour. Translated page counts are determined from target language manuscript copy.

Administration fees include project management, scheduling, reference services, and general overhead expenses. They vary between 20–75% of the total cost of the production, according to the number of services required and the time frame of production.

Long distance telephone, messenger, and overnight services will be billed additionally at cost. Sales tax is not included and will be charged where applicable.

To begin work on the Project we require a fifty percent deposit, with the balance due upon completion. Masters, art boards, and other materials will not be released until payment has been received.

In the event the client puts a project on hold, the project will be deemed closed and all work done to date will be due and payable as billed. If the client desires to resume the project after it has been closed then a new estimate and contract must be agreed to and signed.

In the event a project is delayed but not put on hold by the client for any reason including but not limited to revisions or changes, the client will be billed for all work in progress which will be due and payable as billed.

Client acknowledges International Contact may introduce that client to persons employed and/or hired by International Contact for the benefit of client. Client agrees not to contract with, solicit, employ, or hire any person introduced to them by International Contact for any purpose without the prior written consent of International Contact. Client further acknowledges that such persons may have confidential trade secret information regarding International Contact.

In the event of a dispute arising out of this agreement, the prevailing party shall be entitled to collect reasonable attorney's fees and costs.

The parties hereto agree to submit all disputes regarding the performance or interpretation of this Agreement to binding commercial arbitration in Alameda County, California.

This Agreement is binding on the heirs, successors and assigns of the parties hereto and contains the entire agreement between the parties unless otherwise agreed to in writing.

International Contact will receive translation credit as follows:

Foreign Language Version produced by International Contact, Inc.

Client will provide 5 samples of all finished product for International Contact's files.

Maintenance Tips for Pools,
Spas and Fountains Fact Sheet

PROJECT NAME: **Spanish Translation Services** TOTAL ESTIMATED: **$313.00 to $418.00**

TOTAL ACCEPTED: _____ SIGNATURE: _____

P.O. NUMBER: _____ DATE: _____

* Copy approval required: **YES**

11/14/2012

ESTIMATE FOR PRINT TRANSLATION

CLIENT NAME: Catherine Allin
COMPANY: City of Milbrae
ADDRESS:
CITY:
PHONE: 650-259-2470 FAX:

DATE: 11/14/2012
PROJECT NAME:
Maintenance Tips for Pools Spas and Fountains Fact Sheet

LANGUAGES: Spanish
FINAL COPY: YES [x] NO [ ]

SERVICE		RATE	Without Proofreading	With Proofreading
COPYWRITING				
TRANSLATING		Approximately 950 Words	$266	$266
BACK TRANSLATION				
REVIEW/EDIT				
RESEARCH				
TYPESETTING				
DESKTOP PUBLISHING			client	client
OUTPUT -				
COLOR KEY				
FIERY (pr-film color proofs)				
PROOFREADING	PROOF 1		client	$60
	PROOF 2		client	$30
	PROOF 3			
PRODUCTION MANAGEMENT			$47	$62
		EACH LANGUAGE:	$313	$418

ESTIMATE TOTAL: $313 TO $418

PLEASE READ THE TERMS AND CONDITIONS ON THE BACK OF THIS ESTIMATE FORM, THEN INDICATE THE ACCEPTED ESTIMATE AMOUNT & SIGN YOUR NAME IN THE SPACE PROVIDED. PROJECT WILL NOT BE STARTED UNTIL A SIGNED COPY IS IN OUR FILES. THIS ESTIMATE IS VALID FOR ONLY NINETY (90) DAYS.

THANK YOU FOR TRUSTING US WITH YOUR FOREIGN LANGUAGE NEEDS!

International Contact, Inc.
351 15th Street, Oakland, CA 94612 (510) 836-1180 Fax 835-1314

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 10

FILE NO.: 12,876

MEETING DATE: January 3, 2013

TITLE: Solano Community College Agreement for Spring 2013 WOT

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Approve execution of a contract with Solano Community College for WOT program (Bay Area Consortium for Water & Wastewater Education), not to exceed $104,500 for Spring 2013 semester courses.

SUMMARY

Since June of 2007 BACWA has provided contracting and financial management services for the Water Operator Training program, now called the Bay Area Consortium for Water & Wastewater Education. Participating agencies are billed by BACWA and their contributions fund the Solano Community College courses for the program and a $2,500 annual BACWA administration fee. In July of 2008, the BACWA Board approved execution of the Fall 2008 agreement with Solano Community College and also granted the Chair to execute future agreements for this program as long as they did not exceed $79,200 (10% increase over the Fall 2008 contract amount of $72,000). This program has grown from its ten original sponsors to 22 agencies from five counties contributing funds for Spring 2013. To date, nearly 800 students have taken courses offered by this program. The Spring 2013 agreement exceeds $79,200 contracting cap set by the BACWA Board in July 2008, and is being brought before the Board under this action in accordance with that stipulation.

FISCAL IMPACT

Funds are available for this agreement in the Water Operator Training (WOT) account. Based on the current Treasurer's Report, as of November 1, 2012 the account has a balance of $130,839; minus the annual administration fee of $2,500, the remaining unobligated balance for fiscal year 2012-13 is $128,339.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. SOLANO COMMUNITY COLLEGE DISTRICT AGREEMENT FOR EDUCATIONAL SERVICES

SOLANO COMMUNITY COLLEGE DISTRICT
AGREEMENT FOR EDUCATIONAL SERVICES

This agreement is entered into by and between **SOLANO COMMUNITY COLLEGE DISTRICT**, hereinafter referred to as "District" and **Bay Area Clean Water Agencies,** hereinafter referred to as "BACWA."

WHEREAS, BACWA desires to engage the District to render special educational services,

THEREFORE, THE PARTIES AGREE AS FOLLOWS:

A. The District will provide seven (7) credit classes, WATER 100, Wastewater Treatment I, WATER 103, Biological Principles of Water & Wastewater, WATER 104, Water Treatment I, (2 classes), WATER 107, Mathematics for Water & Wastewater, WATER 120, Distribution Systems Maintenance, and WATER 121, Collections Systems Maintenance, for up to 30 students per class, for BACWA member organizations.

B. The District will develop, coordinate, deliver, and evaluate the training. Instruction/training will be delivered at various BACWA sites, to be determined. Classes will begin in January 2013, exact dates to be determined. Additional training can be scheduled as needed with an addendum to this contract.

C. The District will maintain the BACWWE (Bay Area Consortium for Water & Wastewater Education) website and database and provide marketing and marketing materials for sponsoring agencies.

D. BACWA will recruit, identify and select all trainees who will participate in training.

E. BACWA will compensate the District for all services rendered and expenses at a rate of one hundred four thousand five hundred dollars ($104,500). The fee for each 3 or 4 credit hour class is fifteen thousand five hundred dollars ($15,500). The fee for each 2 or 2 ½ credit hour class is thirteen thousand five hundred dollars ($13,500). The cost is inclusive of all instruction and teaching/ training materials.

F. Payments by BACWA to the District will be due upon receipt of invoice. An invoice will be generated upon completion of the first month of instruction.

G. This contract may be terminated by either party with notice of ten (10) business days.

H. **IT IS MUTUALLY UNDERSTOOD** that BACWA and the District shall secure and maintain in full force and effect during the full term of this Agreement, liability insurance in the amounts and written by carriers satisfactory to BACWA and the District respectively.

I. The District will indemnify, and hold harmless, in any actions of law or equity, BACWA, its officers, employees, agents and elective and appointive boards from all claims, losses, damage, including property damages, personal injury, including death, and liability of every kind, nature and description, directly or indirectly arising from the operations of the District under this Agreement or of any persons directly or indirectly employed by, or acting as agent for the District, but not including sole negligence or willful misconduct of BACWA. This

indemnification shall extend to claims, losses, damages, injury and liability for injuries occurring after completion of the services rendered pursuant to this Agreement, as well as during the process of rendering such services. Acceptance of insurance certificates required under this Agreement does not relieve the District from liability under this indemnification and hold harmless clause. This indemnification and hold harmless clause shall apply to all damages and claims for damages of every kind suffered, by reason of any of the District's operations under this Agreement regardless of whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

J. BACWA will indemnify, and hold harmless in any actions of law or equity, the District, its officers, employees, agents and elective and appointive boards from all claims, losses, damage, including property damages, personal injury, including death, and liability of every kind, nature and description, directly or indirectly arising from the operations of BACWA under this Agreement or of any persons directly or indirectly employed by, or acting as agent for BACWA, but not including the sole negligence or willful misconduct of the District. This indemnification shall extend to claims losses, damages, injury and liability for injuries occurring after completion of the services rendered pursuant to this Agreement, as well as during the process of rendering such services. Acceptance of insurance certificates required under this Agreement does not relieve BACWA from liability under this indemnification and hold harmless clause. This indemnification and hold harmless clause shall apply to all damages and claims for damages of every kind suffered, by reason of any of BACWA operations under this Agreement regardless of whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

K. BACWA agrees that it will not discriminate in the selection of any student to receive instruction pursuant to the Agreement because of sex, sexual preference, race, color, religious creed, national origin, marital status, veteran status, medical condition, age (over 40), pregnancy, disability, and political affiliation. In the event of BACWA's non-compliance with this section, the Agreement may be canceled, terminated, or suspended in whole or in part by the District.

_____	_____
Ben Horenstein	Jowel C. Laguerre, Ph.D.
BACWA Executive Board Chair	Superintendent-President
375 11th Street	Solano Community College District
Oakland, CA	Fairfield, CA
Date_____	Date_____

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 11

FILE NO.: 12,314

MEETING DATE: January 3, 2013

TITLE: Approval of SFEI Technical Memo on Selenium

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Accept memorandum from SFEI entitled *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities* produced on April 24, 2012.

SUMMARY

On December 16, 2012 the BACWA Executive Board approved a contract with the Aquatic Science Center (ASC) to determine the speciation of selenium in Bay Area municipal wastewater discharges, in an amount not to exceed $24,000.The technical memorandum entitled *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities* produced on April 24, 2012 by Don Yee of the San Francisco Estuary Institute (SFEI) and his presentation to the BACWA Executive Board on March 23, 2012 complete the deliverables outlined in this agreement. This document was circulated to the BACWA Board for final review in May of 2012. SFEI is requesting that this memo be made available to the public and posted on their website and RWQCB staff have requested the information for consideration in their north Bay Se TMDL .

Project Background

On September 28, 2010, the San Francisco Bay Regional Water Quality Control Board (Regional Board) informally requested that municipal wastewater agencies submit data to inform their development of a Total Maximum Daily Load for Selenium. Similar information is being required of other permittees via formal request pursuant to section 13267 of the California Water Code. Specifically, the Regional Board requested the following:

1. Updated selenium loads based on at least one year of flow and concentration data from a minimum of all major publicly owned treatment works (POTWs);
2. Information on the "typical" selenium speciation in POTWs using analytical methods comparable to those used by the other permittees; and
3. Information on the proportion of particulate (versus dissolved) selenium in POTW effluent.

This contract was executed to generate the data needed to respond to the request for information on the speciation of selenium and the proportion that is particulate bound. Four samples (two wet and two dry) will be collected from six POTWs beginning the first quarter of 2011.

This work was supervised by the Executive Director and Board Member Mike Connor.

FISCAL IMPACT

This action has no fiscal impact on the 2012-13 Budget. All work was funded in fiscal year 2011-12 and there are no outstanding invoices against this agreement.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. SFEI Technical Memo: *Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities, April 24, 2012*
2. ASC/SFEI Proposal to Determine Selenium Speciation in Treated Municipal Effluent, December 7, 2012

TECHNICAL MEMORANDUM

Selenium Fractionation and Speciation in Final Effluents of Selected San Francisco Bay Area Municipal Wastewater Treatment Facilities

Prepared for:

Bay Area Clean Water Agencies

Submitted by:

Donald Yee

San Francisco Estuary Institute

Richmond, CA

April 24th, 2012

Background

San Francisco Bay is listed under section 303(d) of the Clean Water Act as impaired by selenium due to bioaccumulation in diving ducks leading to health advisories on their consumption by hunters. Selenium concentrations may also be above safe levels in other wildlife, potentially causing reproductive impacts in white sturgeon and other species.

Selenium (Se) occurs in various chemical forms with different oxidation states in the environment, which affects its chemical partitioning and biological uptake. Selenate, SeO_4^{2-}, with a +6 oxidation state (Se VI), is the dominant species in aerobic aquatic environments, but is the form least strongly bioaccumulated or adsorbed to particulate matter. Selenite, SeO_3^{2-}, with a +4 oxidation state (Se IV), is less abundant but much more strongly adsorbed and bioaccumulated. After uptake into microorganisms (e.g., bacteria and phytoplankton) these inorganic selenium species can be transformed into organic species such as the selenium containing amino acids, selenocysteine and selenomethionine, and incorporated into cellular peptides and proteins. Once taken up and transformed into organic forms in microbes and algae, selenium is transferred to and bioaccumulated in higher trophic organisms, with dietary uptake serving as the primary route of exposure. Although selenium chemical speciation is not static and can be altered through abiotic and biological processes within the Bay, understanding the speciation and partitioning of selenium loads is needed to understand their magnitudes relative to in Bay transformation and uptake processes.

Because of the differences in partitioning and biouptake, in addition to total selenium loads, the chemical speciation of various selenium sources is important to estimating their relative risks and any benefits of controls or other management actions. Previous work in the Bay characterized ambient concentrations of various selenium species as well as those of major inputs to the system including refineries and municipal dischargers (Cutter and San Diego-McGlone 1990). In that work, some refinery effluents showed selenite as a majority of their selenium discharge. Municipal wastewater effluent showed a different speciation, where selenate was often 70-90% of total dissolved selenium, selenite 10-20%, and all other species (primarily organo selenides) typically comprising 0-10% of dissolved Se. However, there were many exceptions, with instances where municipal effluents were not dominantly selenate, including cases of 100% selenite, >50% organic selenium, and others less extreme. Total Se concentrations in that work ranged ~3-28 ug/L in municipal effluents.

Following controls introduced at refineries, a subsequent study showed decreases in selenite loads and concentrations in both refinery effluent and the ambient environment (Cutter and Cutter 2004). More recent monthly monitoring at refineries (2010-2011) for the Selenium Characterization Study in North Bay (unpublished preliminary data) generally showed continued lower selenite and organic selenium species compared to selenate, averaging 21%, 24%, and 53% of dissolved selenium respectively, although distributions for individual samples still varied widely among plants and events (e.g., selenite ranging 0-99% of dissolved selenium).

Since that earlier study in the 1980's (Cutter and San Diego-McGlone 1990), selenium speciation in municipal wastewater effluent has not been measured widely in the Bay Area, so the Bay Area Clean Water Agencies (BACWA) sponsored a study conducted by

the San Francisco Estuary Institute (SFEI) to determine current speciation characteristics of effluents at selected municipal POTWs. In consultation with BACWA and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), SFEI selected for sampling treatment plants of three of the largest dischargers (East Bay Dischargers Association (EBDA), East Bay Municipal Utility District (EBMUD), and Central Contra Costa Sanitary District (CCCSD) and four smaller plants with the highest average total selenium concentrations in recent (2009-2010) discharge permit reporting to the SFBRWQCB.

Methodology

Sampling

Grab samples of final effluent post-chlorination and dechlorination were collected by treatment plant staff on four occasions: two during the wet season (November to March), and two in the dry season (April to October). Wet season samples were collected at least 6 to 8 hours following rain events that caused increased influent flow into the plant, allowing sufficient time for rain-influenced effluent to be sampled at the collection point. Dry season samples were collected in the morning on Mondays, primarily for logistical considerations. Monday morning sampling afforded sufficient time for sample preparation, shipping, and delivery to the Trent University analytical laboratory to conduct sample analysis within the desired holding time (~7 days). Samples at each site were collected into three 1L pre-cleaned HDPE bottles with minimal headspace, stored chilled in the dark at the treatment plants until pickup, then transported in coolers with wet ice to the EBMUD Laboratory for storage chilled (~4 C) in the dark until processing.

Processing

EBMUD Laboratory staff filtered ~800 ml to 1L of sample through pre-weighed 0.45 um pore-size nitrocellulose membrane filters to allow determination of total suspended solids (TSS), with subsequent digestion and analysis for particulate selenium at the EBMUD lab. The filtrate was collected and transferred to 3 ~250ml precleaned HDPE bottles with minimal headspace and sent to Trent University (Ontario, Canada) for dissolved-phase selenium species analysis. EBMUD retained a portion of the filtrate for dissolved phase (unspeciated) selenium analysis. Samples for total (whole water) Se determination at EBMUD were stored without further processing until analysis.

Laboratory analysis

EBMUD measured collected solids on filters for TSS by Standard Methods 2540. Pre-weighed filters with filtered material from selenium samples were dried in an oven at 103 to 105 C for a minimum of 1 hour, until stable weights were measured. TSS was then calculated for each sample as the difference between the initial and final filter weights.

EBMUD analyzed samples for total suspended solids and total, dissolved, and particulate phase selenium in-house. Samples were analyzed for selenium using Standard Methods SM 3114B, (manual) hydride generation atomic absorbance spectrometry. Samples were first digested in an oxidizing acidic solution, with Se(VI) then prereduced to Se(IV) by heating in a hydrochloric acid solution, and subsequently converted to volatile hydrides

in an acidic sodium borohydride solution, purged by inert carrier gas, and measured by atomic absorption spectrometry.

Discrete soluble selenium species in filtered effluent samples were measured by Trent University using anion-exchange chromatography-anion self-regenerating suppressor-inductively-coupled plasma-dynamic reaction cell-mass spectrometry (AEC-ASRS-ICP-DRC-MS). Samples were analyzed as is without digestion or dilution; methane was used as the reaction gas, and the major isotope ^{80}Se was used for quantification. An example chromatogram (Figure 1) shows a signal of hydrogen bromide ($^{1}H^{79}Br$), with the same mass as target ^{80}Se isotope, but its signal is well-separated from those of target selenium species by the anion-exchange column. Three known selenium species, selenite = Se(IV), selenate = Se(VI) and selenocyanate = SeCN, are identified, along with four unidentified species (with retention times or peaks labeled US1 to US4 in Figure 1).

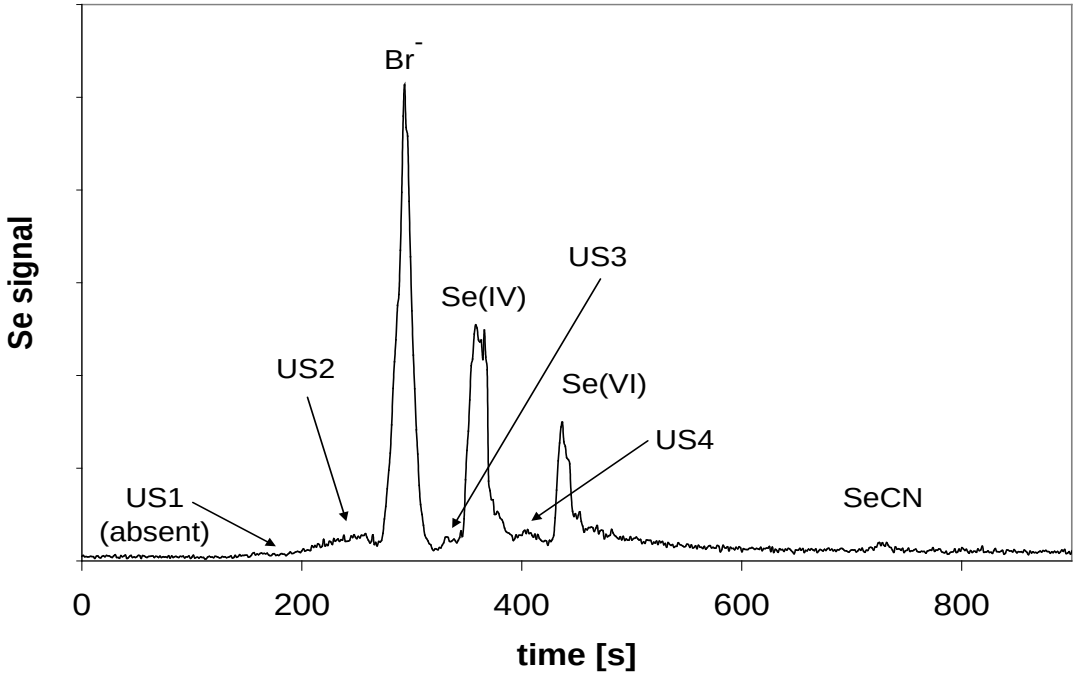

Figure 1 – Example AEC-ASRS-ICP-DRC-MS chromatogram. US1 to US4 indicate retention times for unidentified selenium containing species often found in these effluent samples.

Subsamples of the filtered samples sent to Trent University for analysis were analyzed for total dissolved Se using ICP-DRC-MS. Nitric acid was used to oxidize volatile Se species to non-volatile ones and yielded a more stable instrument response. Due to the bromide interference at atomic mass 80 (without column chromatography, not distinguished from ^{80}Se), the ^{78}Se isotope was used for measurement total dissolved Se.

A subsample of filtered material sent to Trent University was sent to Laurentian University for measurement of organic selenium species using selective sequential hydride generation-atomic fluorescence spectrometry (SSHG-AFS) using UV-assisted breakdown of organic matter and discrete organic Se compounds to the hydride generation-active Se(IV) (Chen et al., 2005). This method measures Se(IV) directly in the sample by HG-AFS, and then measures a separate sample aliquot which has been

digested by a combined oxidation-UV irradiation procedure. The latter treatment converts organic selenium species into Se(IV), with “organic selenium” (Se-org) estimated by difference between the two measurements.

Results

Tables of the results for individual samples collected and analyzed are reported in tabular form in the Appendix. Dissolved, particulate, and total selenium fractions were analyzed for all samples collected. Speciation of dissolved selenium was analyzed for all samples for all treatment plants, except for Delta Diablo, for which only the first two samples were sent to Trent University and analyzed.

Concentrations of selenium in whole water samples ranged 0.21 to 2.0 ug/L, much lower than in the earlier (Cutter and San Diego-McGlone 1990) study of Bay area treatment plants. Concentrations were higher in the wet weather events for most plants (Figure 2), significantly so with all plants considered together ($P<0.05$, t-test), suggesting increased input of selenium from inflow and infiltration to the treatment plants in those periods. For many of the treatment plants considered individually, despite the small number of samples for each season ($n=2$), differences between wet and dry season averages were sometimes also significant ($p<0.05$).

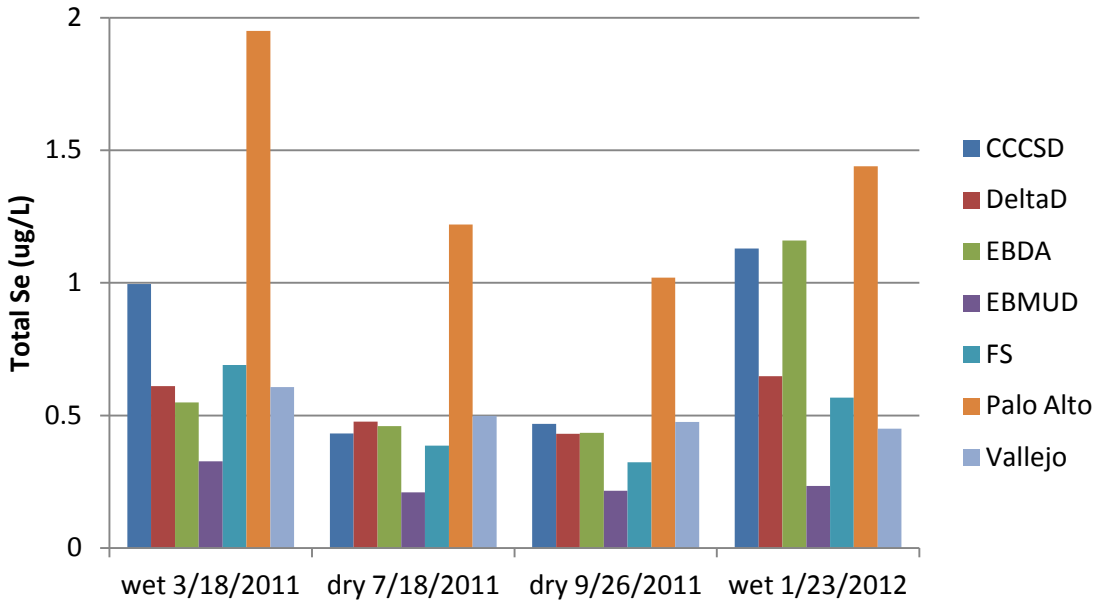

Figure 2 -Total selenium concentrations in wastewater effluents. Wet weather concentrations were higher than in dry season at most plants.

The plants with the lowest and highest selenium concentrations also generally remained the same among both wet and dry season events, suggesting consistent selenium input sources for each area. However, only the difference between the highest concentration plant and all the others was significant ($p<0.05$, t-test); the plant with the lowest average concentration was not significantly different from plants other than the highest when all

events were included. The lack of significance for other pairings is likely due to the small number of samples (n=4) and the variation between wet and dry season results within a plant. Analyzing only within a single season, sample numbers are further reduced (n=2), so significant differences between most pairs of plants (other than the lowest versus highest) are still not found.

Dissolved selenium concentrations covered virtually the same range as total selenium, from 0.17 to 1.9 ug/L. Consistent with the dissolved fraction constituting the majority of selenium in effluent (Figure 3), the dissolved selenium fraction was highly correlated to total selenium concentrations (R^2 = 0.99), and ranged from 71 to 101% of total (unfractionated) selenium, averaging(±stdev) 89(±8) % (Table 1). The patterns of higher concentrations in wet season samples at most plants remained the same, although the differences were slightly outside the threshold for significance (p=0.053, t-test). Plants with the lowest and highest concentrations remained the same, again with a significant difference ($p<0.05$, t-test) between the highest versus all others, but few significant differences between most other pairs.

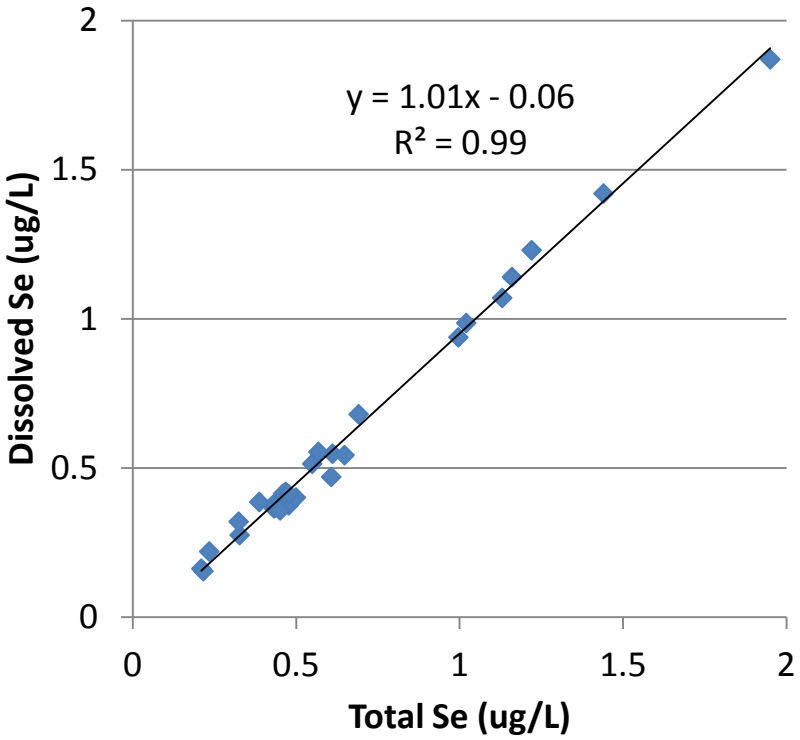

Figure 3 -Dissolved versus total selenium concentrations. Dissolved selenium constitutes the majority of selenium in effluent.

Table 1 -Average percentages (±stdev) of dissolved and particulate fraction selenium in municipal wastewater effluents. Selenium was dominantly dissolved phase at all plants.

	Dissolved	Particulate
CCCSD	91(±5)	7(±4)
DDSD	85(±5)	9(±3)
EBDA	92(±6)	8(±4)
EBMUD	82(±10)	7(±4)
FSSD	99(±1)	2(±1)
Palo Alto	98(±2)	1(±0)
VSFCD	81(±4)	14(±2)
All	89(±8)	7(±5)

Particulate Se was consistently only a small fraction, ranging 1 to 14% of total (unfractionated) selenium in effluent. No seasonal patterns were apparent in particulate selenium, with high concentrations occurring in dry season for some plants and in the wet season for others (Figure 4), and no significant differences between seasons for all plants considered together. However, there were significant differences ($P<0.05$, t-test) among some treatment plants (i.e. between those with the lowest and highest concentrations for both all seasons combined, and wet or dry season individually), with the same plants generally at the higher and lower ends of the range for all the sampling events. These differences in particulate Se in samples correlated moderately ($R^2 = .43$) and significantly ($p=0.001$) to the total particulate mass (total suspended solids, TSS Figure 5), suggesting similar partitioning behavior of Se among plants.

As a check of the internal consistency of the results for analysis of Se fractionation, the selenium as sums of dissolved and particulate fractions generally added up to close to the same concentrations as separately analyzed (unfractionated) total selenium samples, ranging 81 to 102% of the total samples (Figure 6). The largest relative deviations were in the lowest concentration samples, where analytical noise would be expected to be largest relative (as a percentage) to reported concentrations, even if the nominal variations (i.e. in ug/L) are similar across the range.

There was also reasonably good agreement and correlation ($R^2 = 0.90$) between concentrations reported for the dissolved fraction analyzed by EBMUD compared to those reported by Trent (Figure 7). Relative percent differences between the labs ranged up to 60%, but most were in a lower range (35% or lower, averaging 12%).

For most of the samples, selenate was the dominant dissolved phase species, accounting for 5% to 92% of dissolved selenium species in individual samples, averaging(±stdev) 40(±24)% (Figure 8,Table 2) for all samples together. The organic selenium analyzed by Laurentian University was often the next most abundant, accounting for 0% to 76% (average 33(±21)%) of dissolved selenium. Selenite typically accounted for a smaller portion (1% to 46%, average 15(±17)%), with the various unidentified species isolated by anion exchange chromatography (US1 to US4) and selenocyanate (SeCN) accounting for the remainder (average 8(±10)% and 4(±7)% of dissolved selenium respectively).

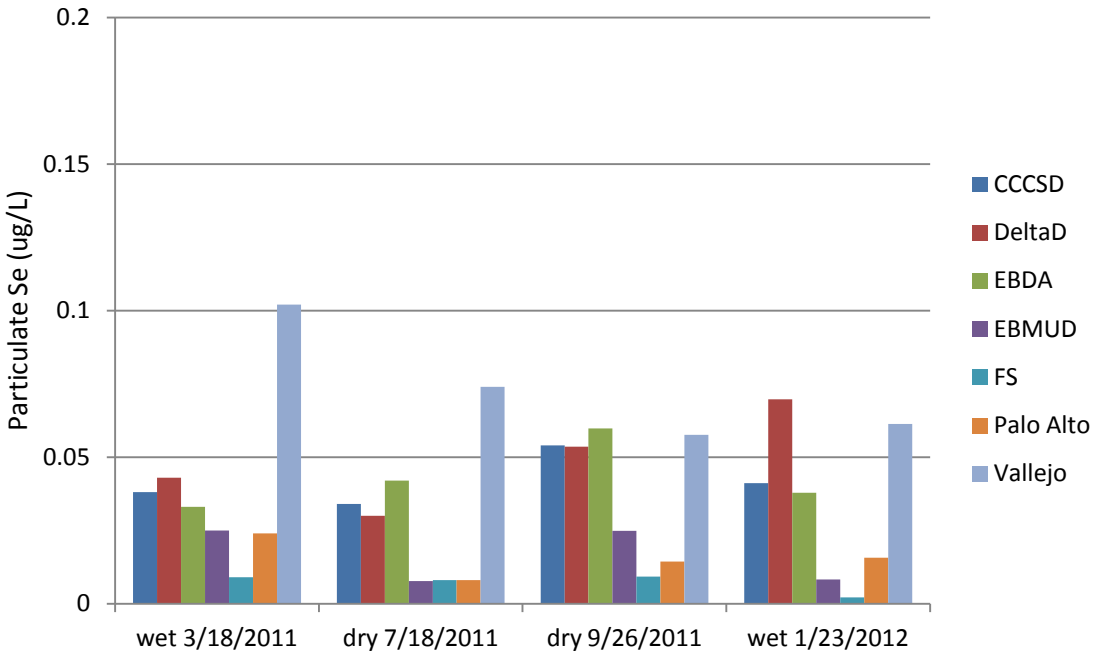

Figure 4 - Particulate selenium in effluent samples. Particulate selenium showed no seasonal patterns, with the highest concentrations occurring in the dry season at some plants and in the wet season at others.

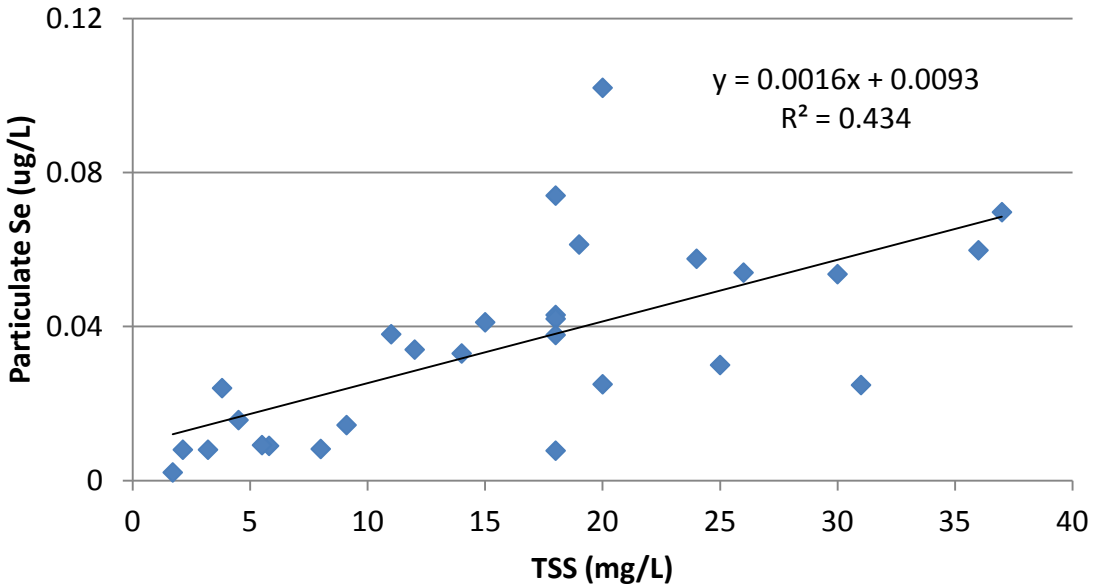

Figure 5 -Particulate selenium versus total suspended solids. Particulate selenium generally correlated to total suspended solids, suggesting similar partitioning behavior and concentrations of selenium in solids among plants and events.

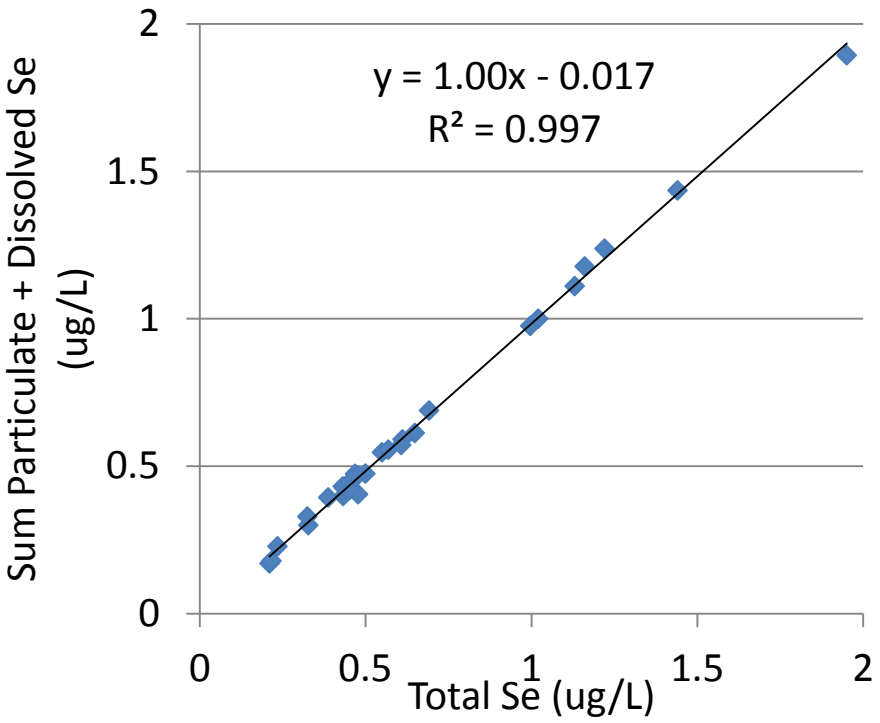

Figure 6 -Sum of dissolved and particulate fractions compared to total selenium. Sums of fractions generally were equivalent to total fractions within the range of analytical precision.

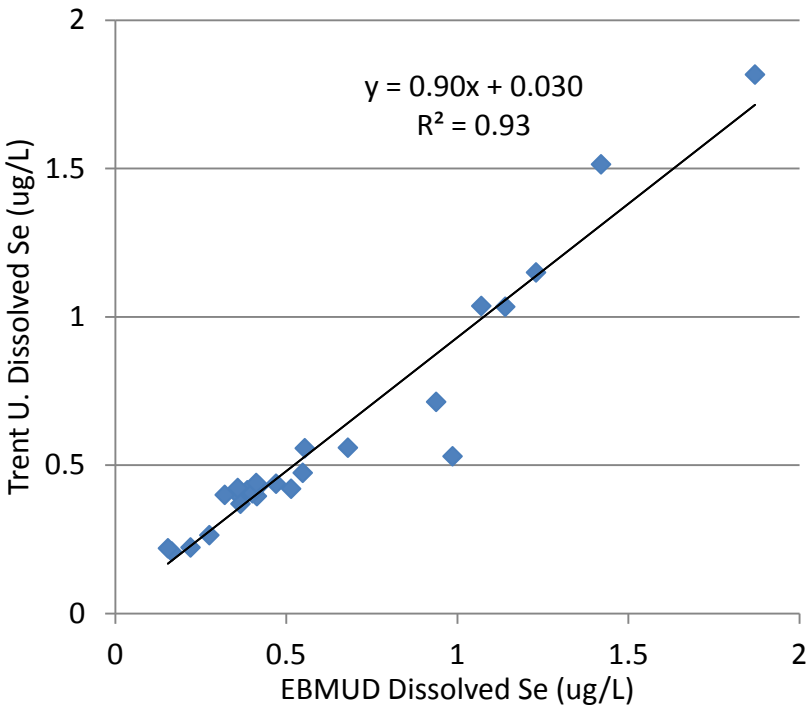

Figure 7 -Dissolved selenium concentrations reported by Trent versus EBMUD. Results were generally similar between laboratories for most samples.

Two plants had unique dissolved species distributions; Palo Alto had dominantly selenite (Se IV), significantly ($p<0.05$, t-test) higher than all other plants, and Vallejo samples had primarily the organic selenium species reported by Laurentian University, significantly higher than three of the six other plants. Selenium originating from different sources can have different speciation characteristics, and bacteria such as those in sludge reactors are capable of transforming selenium species (van Hullenbusch et al. 2007). The specific causes of the differences in these Bay Area plants is unknown, and would require analysis of samples from water suppliers, influent, and/or other points in the water supply and treatment stream to determine their origin.

Table 2 -Average (%(±stdev)) contribution of individual species to dissolved fraction selenium. SeCN = selenocyanate, Org Se (LU) = ograno selenium species anslyzed by Laurentian University, and UnID'd Se (TU) = the sum of unidentified selenium species by anion chromatography analyzed by Trent University.

	Selenate (Se VI)	Selenite (Se IV)	SeCN	Org Se (LU)	US1 – US4 (TU)
CCCSD	33(±9)	9(±10)	13(±15)	42(±14)	3(±3)
DDSD	37(±2)	8(±4)	5(±3)	44(±2)	6(±7)
EBDA	57(±19)	6(±5)	3(±1)	28(±14)	7(±8)
EBMUD	36(±19)	17(±5)	4(±4)	27(±21)	17(±20)
FSSD	78(±12)	2(±1)	2(±1)	13(±15)	5(±5)
Palo Alto	23(±8)	48(±14)	1(±0)	20(±13)	8(±4)
VSFCD	12(±6)	11(±4)	3(±1)	65(±12)	9(±10)
All	40(±24)	15(±17)	4(±7)	33(±21)	8(±10)

One sample from CCCSD had an unusually high proportion of selenocyanate, about ten times higher than in any other samples. On requested reexamination of the instrument data, the laboratory confirmed the identification and quantification of selenocyanate; the peak location and ratio of selenium isotopes in the sample were consistent with that identification. Although at a much lower concentration, the second highest concentration of selenocyanate was also in a sample from CCCSD, which suggests that the other result was a valid signal.

Seasonal differences in mean concentrations were not significant for any species when considering all the plants together, as there was large variation among all the plants within each season. However, some selenium species in individual plants showed significant differences between seasons. For selenite (Se IV) and selenate (SeVI), only CCCSD showed significantly ($p<0.05$ t-test) higher concentrations in wet season. For the sum of unidentified species by anionic chromatography (analyzed by Trent), only Vallejo samples showed significantly higher concentrations in the wet season. Organo-selenium species (reported by Laurentian) and selenocyanate showed no significant seasonal patterns for any of the plants.

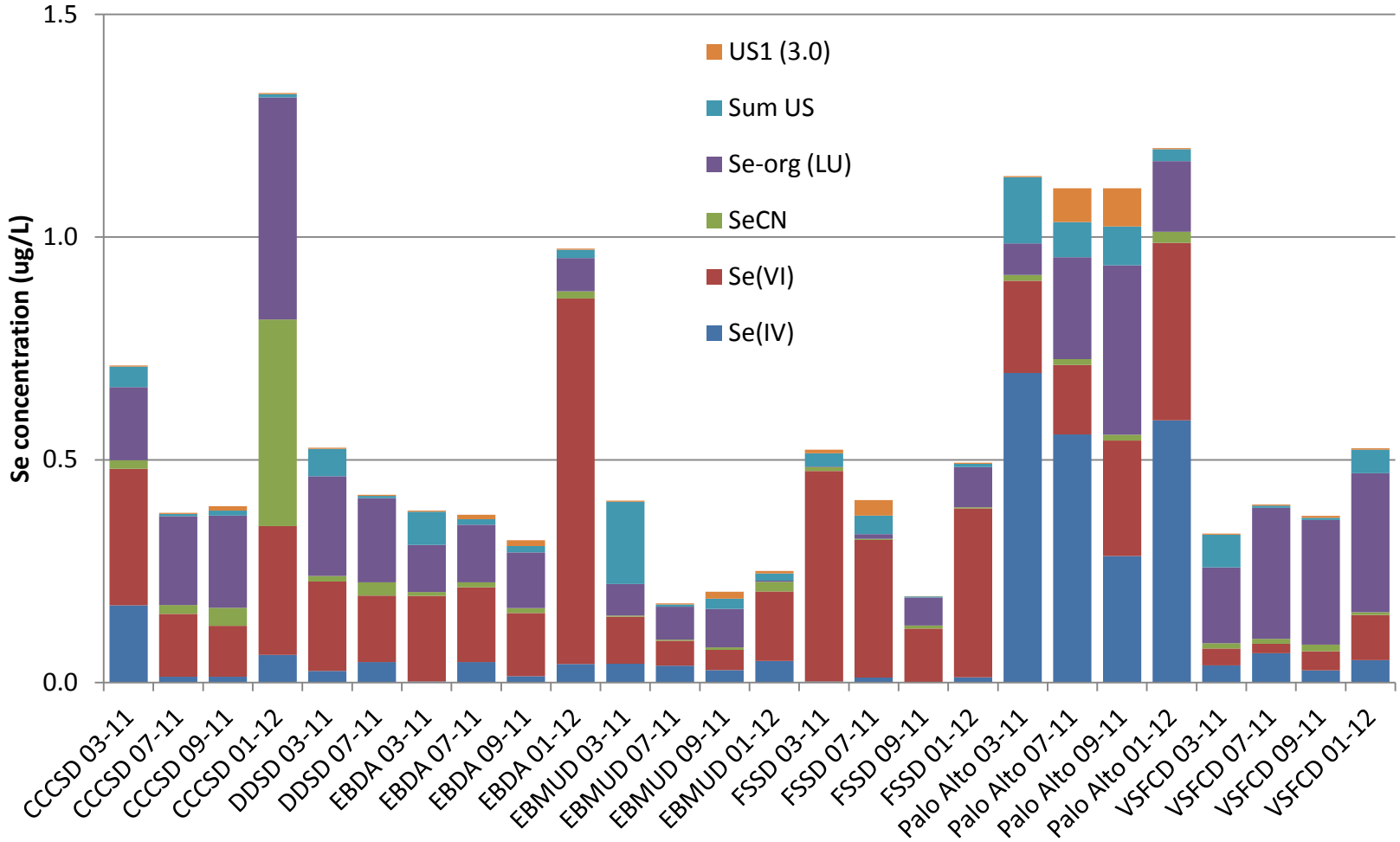

Figure 8 - Dissolved fraction selenium speciation. Selenate (Se VI) was the dominant species, with organic selenium (Se-org, as analyzed by Laurentian University), and selenite (Se IV) as the next most abundant species in most samples. However, two plants had atypical distributions, one with dominantly selenite, and another mostly organic selenium in all sample events. There was also one sample with unusually high selenocyanate (SeCN).Wet weather events were sampled on 03-11 and 01-12

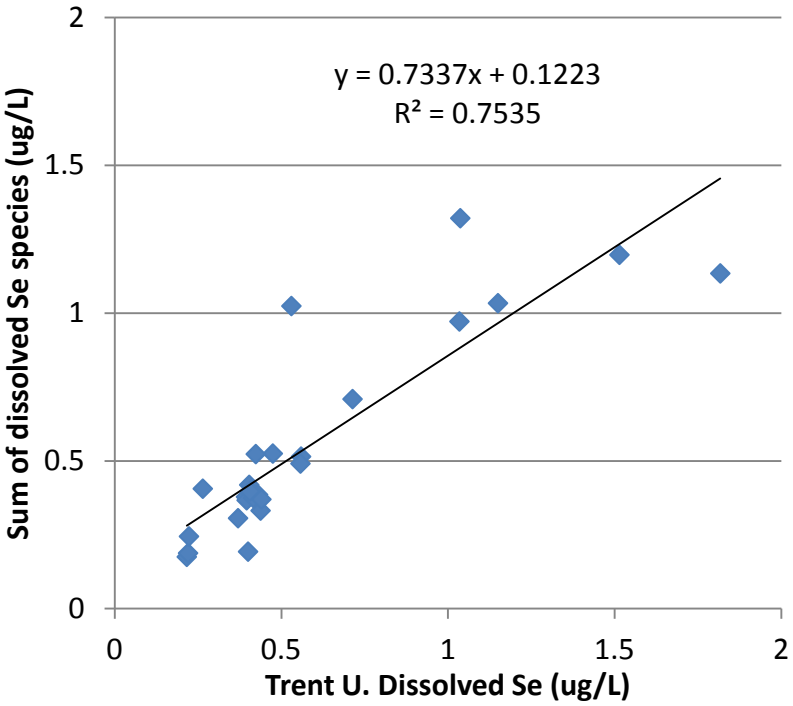

Figure 9 - Sum of all Se species versus unspeciated dissolved Se concentrations. The sum of species includes organic selenium reported by Laurentian; the low bias relative to unspeciated dissolved Se reported by Trent suggests little or no overlap with the unidentified selenium species reported by Trent in anion exchange chromatogaphy.

Because analyses by Trent (by AEC-ASRS-ICP-DRC-MS) and Laurentian (by SSHG-AFS) were performed on parallel subsamples rather than sequentially analyzing the same sample, the possibility exists that there is overlap in some of the unidentified selenium species reported by Trent and the organic selenium species reported by Laurentian. Sums of the quantified species including and excluding organic selenium species reported by Laurentian were therefore compared to separate analyses of (unspeciated) dissolved selenium performed by Trent. If both analyses reported some of the same species, the sum including the Laurentian results would double count those species, resulting in a high bias of the sum compared to the unspeciated analysis concentration. A plot of the sum of species including the Laurentian results however still mostly biases low compared to unspeciated dissolved selenium analyses (Figure 9). A regression with the sums excluding the Laurentian results showed an even lower bias (slope of 0.70 versus the 0.73 shown), and a slightly worse correlation ($R^2 = 0.70$), so it is likely that there is little to no overlap in the species reported by Trent and Laurentian.

Discussion

Overall, the results are similar to those in previous studies examining selenium fractionation and speciation in municipal wastewater dischargers. Most selenium was found in the dissolved fraction, with only a small percentage in particulate forms. Among the dissolved selenium forms, selenate (Se VI) was the dominant species for most locations, with unspecified organic species and selenite (Se IV) accounting for smaller portions of the dissolved species. However, also similar to previous results, the relative

contributions of various dissolved selenium species were somewhat variable among plants and events.

A correlation of particulate selenium concentration with total suspended solids suggests that solids removal is generally effective at reducing the particulate fraction in discharged effluent. Increased solids removal for effluents with higher TSS can reduce that fraction further, but will not prevent uptake or re-partitioning of dissolved fraction selenium to particulate phases once released into the environment. The latter processes, as well as particulate selenium inputs from riverine and tributary sources are likely important in determining ambient concentrations, as effluent discharged from municipal wastewater plants (approximately 600 million gallons per day, or 830 million cubic meters per year), combined with particulate selenium average concentrations measured in this study (avg(±stdev) = 0.035(±0.025) ug/L) yielded estimated loads of only 29(±20) kg per year. In comparison, the Delta delivers an estimated 47 to 686 kg of particulate selenium per year ((Abu-Saba and Ogle 2005), using data from Cutter and co-authors). Most of the fifteen-fold variation in Delta loads was from variations in annual flow, as particulate selenium concentrations in the Delta used for that calculation varied by less than a factor of two (Doblin et al. 2006). The suspended particulate selenium in the Bay (based on the difference between areally averaged total (0.119 ug/L) and dissolved (0.100 ug/L) selenium concentrations from Regional Monitoring Program data 2005 to 2010, and an approximate Bay volume of 6.7×10^9 cubic meters) yields an inventory of 128 kg. Thus upper end estimates of annual particulate selenium loads from municipal wastewater are approximately equal to minimum Delta loads, and less than half the Bay inventory

Concentrations of dissolved selenium were generally much higher, averaging(±stdev) 0.606(±0.416) ug/L, yielding annual loads of 503(±345) kg/year from municipal wastewater. These loads were above the low end of estimated dissolved selenium discharge from the Delta (282 to 9570 kg/year (Abu-Saba and Ogle 2005)), and of the same magnitude as the inventory in the water column estimated using RMP data from 2005 to 2010 (666 kg). The load estimated here for municipal wastewater is likely to be near its upper limit, as the sampled facilities include three of the largest dischargers, and the smaller plants sampled include those with the highest selenium concentrations in previous discharge permit monitoring reported to the SFBRWQCB. Because of this overrepresentation of plants with previously high reported concentrations in the sampled group of facilities, the simple mean concentration reported here is likely higher than would be obtained by a flow weighted mean of all municipal wastewater plants in the region, and thus likely represents a conservative maximum load from municipal wastewater sources.

Another factor likely leading to an overestimate from use of a simple mean of results for this study is the over-representation of wet season selenium concentrations, which tended to be higher than those collected in the dry season. Although dry periods in the wet season were not sampled, it would be expected that the water and selenium sources in those periods would be more similar in constitution and thus concentrations to dry season samples rather than wet season rain event samples. More refined estimates dissolved and particulate selenium fraction loads, or of individual dissolved selenium species could be made using the data provided here, but their results would largely depend on the assumptions made for unsampled locations and periods. For example, wet season

concentrations could be applied to all days in a designated wet season period, any days with measurable precipitation, or the number of days with influent flow above some baseline for each plant. Similarly, assumptions would need to be made about the effluent characteristics of unsampled facilities to get more refined estimates; remaining facilities could be assumed to have concentration distributions similar to the sampled group, similar to the lowest concentration sites in the sampled group (since few facilities likely have comparably high total selenium), or estimated by relative percentages of water supplied from sources with known lower to higher selenium concentrations (e.g. from reservoirs in the Sierra Nevada, Delta pumps, or local groundwater respectively).

The speciation data collected in this study can be used in building mass balance estimates of selenium species in the Bay, and consequently the selenium exposure risk posed by various loads interacting with environmental transport and transformation processes can be estimated. A key step is the initial uptake into the food web by bacteria or phytoplankton. Uptake rates are variable among species, but ambient concentrations of dissolved selenium species measured or estimated through mass balance models can be applied to uptake rates reported in the literature via models (e.g., (Meseck and Cutter 2006), and assimilation efficiencies for higher trophic organisms then used to estimate risk posed to species of interest. The USGS DYMBAM model (Luoma and Presser 2006) uses a similar approach, although rather than tracking individual dissolved Se species it simplifies the initial uptake to a range of partition coefficients (Kd) to particulate selenium forms under scenarios which are then accumulated through the food web.

Information on exposure and effects on biota are most abundant and unambiguous for the simpler inorganic species, selenate and selenite, as these can be easily added in purified form for toxicological and uptake studies. There is also information on selenocyanate uptake for at least one species of algae; although its uptake was lower than for selenate or selenate, there was also evidence of biotic formation of selenocyanate (Simmons and Wallschläger 2011). Uptake studies of organic selenium species are also generally performed using spikes of purified forms such as seleno-amino acids, Operationally defined organic selenium species such as characterized in this study require assumptions about the (likely mixed and complex) species present (e.g., assuming their uptake is analogous to known species such as a seleno-amino acid), or require more involved digestion and separation techniques to distinguish and quantify specific individual species. Alternatively, uptake studies can potentially be undertaken with operationally defined mixtures, but results may be variable among samples depending on the underlying mixture of true chemical species.

Although it is clear that differences among facilities in particulate selenium are mostly due to differences in total suspended sediments (TSS) discharged, the specific causes of differences in total (primarily dissolved) selenium among plants and between wet and dry season were not examined here. However, a likely cause is differences in water supplies used for the service areas of different plants, e.g., high selenium (2-8 ug/L) is found in groundwater for some wells in South Bay (Santa Clara Valley Water District 1994) , with another (but less likely) possibility being distinctive residential or industrial uses of selenium containing products for different areas. The differences in wet versus dry season contributions may also be due to infiltration from groundwater sources, or from selenium in wet deposition; although atmospheric sources in this region may not be

identical, a study from Maryland (Mason et al. 2000) reported average concentrations of 0.49(±0.70) ug/L, greater than concentrations in dry season effluents for some facilities reported here. Similarly, differences in dissolved selenium species among plants (e.g. high selenite and organic selenium found in some plants here) would require sampling of influent and possibly other process points to determine their origin.

Despite these remaining uncertainties, this work provides improved understanding of the characteristics of selenium in municipal wastewater discharages in the Bay area. In combination with information currently being collected on other regional loads (e.g., petroleum refinery effluent, and stormwater flows), a more complete picture of selenium sources and fate can be constructed for the region, to allow better assessment and management of the risk posed to the local ecosystem by selenium.

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Appendix

Appendix Table 1 – Analytical results for samples collected from municipal wastewater facilities. Analyzing labs: EB=EBMUD, TU=Trent U., LU=Laurentian U. Results reported in ug/L unless otherwise noted. For calculating sums of species, <MDL results were substituted by ½ MDL.

Facility	Sample Date	Dissolved Se (EB)	Particulate Se (EB)	Sum Fractions (EB)	Total Se (EB)	TSS mg/L (EB)	Selenite (TU)	Selenate (TU)	Selenocyanate (TU)	US1 (TU)	US2 (TU)	US3 (TU)	US4 (TU)	Organic Se (LU)	Sum Species (TU)	Dissolved Se (TU)	DOC mg/L (TU)
CCCSD	3/18/2011	0.938	0.038	0.976	0.996	11	0.173	0.307	0.020	< 0.005	0.039	< 0.005	< 0.005	0.164	0.709	0.713	8.3
CCCSD	7/18/2011	0.365	0.034	0.399	0.432	12	0.013	0.141	0.020	< 0.005	< 0.005	< 0.005	< 0.005	0.199	0.378	0.394	12.4
CCCSD	9/26/2011	0.42	0.054	0.474	0.468	26	0.013	0.114	0.041	0.010	< 0.005	< 0.002	< 0.005	0.207	0.386	0.430	11.5
CCCSD	1/23/2012	1.07	0.0411	1.1111	1.13	15	0.062	0.289	0.464	< 0.005	< 0.005	< 0.005	< 0.005	0.499	1.321	1.037	10.8
DDSD	3/18/2011	0.548	0.043	0.591	0.611	18	0.026	0.201	0.012	< 0.005	0.054	< 0.005	< 0.005	0.224	0.525	0.474	14.0
DDSD	7/18/2011	0.375	0.03	0.405	0.477	25	0.046	0.149	0.030	< 0.005	< 0.005	< 0.005	< 0.005	0.189	0.419	0.403	16.7
DDSD	9/26/2011	0.378	0.0536	0.4316	0.431	30											
DDSD	1/23/2012	0.543	0.0697	0.6127	0.648	37											
EBDA	3/18/2011	0.514	0.033	0.547	0.549	14	< 0.005	0.192	0.009	< 0.005	0.067	< 0.005	< 0.005	0.106	0.383	0.421	12.7
EBDA	7/18/2011	0.414	0.042	0.456	0.46	18	0.046	0.168	0.011	0.010	< 0.005	< 0.005	< 0.005	0.129	0.367	0.396	13.6
EBDA	9/26/2011	0.366	0.0598	0.4258	0.435	36	0.014	0.142	0.011	0.013	< 0.005	< 0.002	< 0.005	0.125	0.306	0.370	12.1
EBDA	1/23/2012	1.14	0.0378	1.1778	1.16	18	0.041	0.821	0.016	< 0.005	0.013	< 0.005	< 0.005	0.075	0.972	1.034	11.4
EBMUD	3/18/2011	0.275	0.025	0.3	0.327	20	0.042	0.105	< 0.005	< 0.005	0.178	< 0.005	< 0.005	0.071	0.406	0.264	15.0
EBMUD	7/18/2011	0.165	0.008	0.173	0.21	17	0.038	0.061	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.079	0.101	0.21	16.0
EBMUD	7/18/2011	0.16	0.0075	0.1675		19	0.038	0.050	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.069	0.090	0.22	16.0
EBMUD	9/26/2011	0.154	0.0248	0.1788	0.216	31	0.028	0.045	0.006	0.016	< 0.005	< 0.005	< 0.005	0.086	0.188	0.220	14.8
EBMUD	1/23/2012	0.22	0.0082	0.2282	0.234	8	0.049	0.156	0.021	0.006	0.008	< 0.005	< 0.005	< 0.005	0.245	0.223	9.3
FSSD	3/19/2011	0.68	0.009	0.689	0.691	5.8	< 0.005	0.472	0.009	0.008	0.017	< 0.005	< 0.005	0.001	0.515	0.559	6.0
FSSD	7/18/2011	0.386	0.008	0.394	0.387	2.1	0.011	0.309	< 0.005	0.035	< 0.005	< 0.005	< 0.005	0.010	0.375	0.416	9.8
FSSD	9/26/2011	0.32	0.0092	0.3292	0.324	5.5	< 0.002	0.120	0.007	< 0.002	< 0.005	< 0.005	< 0.005	0.063	0.193	0.400	7.4
FSSD	1/23/2012	0.554	0.0021	0.5561	0.568	1.7	0.012	0.379	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.090	0.491	0.557	6.4
Palo Alto	3/18/2011	1.87	0.024	1.894	1.95	3.8	0.695	0.207	0.013	< 0.005	0.096	< 0.005	0.033	0.071	1.134	1.817	8.1
Palo Alto	7/18/2011	1.23	0.008	1.238	1.22	3.2	0.557	0.156	0.013	0.076	< 0.005	< 0.005	< 0.005	0.229	1.033	1.150	9.4
Palo Alto	9/26/2011	0.986	0.0144	1.0004	1.02	9.1	0.284	0.259	0.013	0.086	< 0.005	< 0.005	< 0.005	0.381	1.024	0.530	7.3
Palo Alto	1/23/2012	1.42	0.0157	1.4357	1.44	4.5	0.588	0.399	0.025	< 0.005	0.022	< 0.005	< 0.005	0.158	1.197	1.514	7.2
VSFCD	3/18/2011	0.47	0.102	0.572	0.607	20	0.038	0.038	0.012	< 0.005	0.066	< 0.005	< 0.005	0.171	0.332	0.438	9.0
VSFCD	7/18/2011	0.401	0.074	0.475	0.499	18	0.066	0.021	0.011	< 0.005	< 0.005	< 0.005	< 0.005	0.294	0.397	0.405	14.9
VSFCD	9/26/2011	0.412	0.0576	0.4696	0.476	24	0.027	0.043	0.015	0.004	< 0.005	< 0.005	< 0.005	0.280	0.370	0.440	10.2
VSFCD	1/23/2012	0.358	0.0613	0.4193	0.451	19	0.050	0.101	0.007	< 0.005	0.007	< 0.005	0.044	0.312	0.523	0.423	8.6

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December 7, 2010,

Dr. Mike Connor
General Manager
East Bay Dischargers Association
2651 Grant Avenue
San Lorenzo, CA 94580

Re: Revised Proposal to Determine of Selenium Speciation in Treated Municipal Effluent

Dear Mike;

Thank you for the opportunity to submit a proposal to determine dissolved selenium concentrations in municipal effluent. Based on the preliminary information you have provided, we understand that the Regional Water Quality Control Board is requesting additional information regarding the percentages of particulate and dissolved selenium, and the speciation of dissolved selenium in Bay Area effluent. This information will be used in the review of the Total Maximum Daily Load (TMDL) for selenium (Se).

Background

The Conceptual Model of Selenium in North San Francisco Bay developed (Tetra Tech 2008) for the Se TMDL highlights a number of key pathways for understanding the fate of Se in the Bay, including the speciation of Se detected in the water column. Although Se chemical species can be altered through abiotic and biological processes in the Bay, understanding the speciation of Se loads is important to understand their magnitudes relative to in-Bay transformation and uptake processes.

Previous work on San Francisco Bay characterized ambient concentrations of various Se species as well as those of major inputs to the system including refineries and municipal wastewater treatment plant dischargers (Cutter and San Diego-McGlone 1990). In that work, selenate in municipal wastewater effluent was frequently 70 to 90 percent of the total dissolved Se, selenite was 10 to 20 percent, and all other species (primarily organo selenides) typically comprising 0-10% of dissolved Se. However, there were many exceptions, with instances where effluents were not dominantly selenate, including cases

of 100 percent selenite, >50 percent organoselenides, and others less extreme. Total Se concentrations in that work ranged from approximately 3 to 28 ug/L.

A recent survey of North Bay dischargers for the period 2008 to 2009 observed effluent concentrations much lower, more typically <1 ug/L, suggesting overall decreases in total Se discharges (BACWA, unpublished data). The typical distribution of Se species in current effluent discharges is unknown and represents a data gap for understanding the current sources of Se to biota (from the dissolved phase to phytoplankton and bacteria), and once in particulate forms (including phytoplankton and organic detritus) to zooplankton, bivalves, and higher trophic organisms.

The Se TMDL project uses first order rate constants from the literature for application to a model to estimate uptake rates to phytoplankton. Selenite uptake rates are 4-5x rates for selenate, and organoselenide uptake rates are half those for selenite (2-2.5x rates for selenate). Therefore, any nondetects for selenite should ideally be <10% of the concentration for selenate. With a higher selenite detection limit at 20% of the selenate concentration for a given sample, the potential uptake rates for selenate and selenite could be equivalent. Similarly organo-selenium species method detection limits could be at most half the selenate concentration to have equivalent uptake rates.

Measurement of particulate Se concentrations in effluent can provide information on the loading of particulate sources of Se to the Bay and can be compared to model estimated phytoplankton uptake/adsorption. The Se TMDL model applies the USGS dynamic multi-pathway bioaccumulation model (DYBAM; Luoma et al., 1992; Stewart et al., 2004; Presser and Luoma, 2006), which calculates zooplankton and bivalve uptake rates based on dissolved Se in the water column and solid concentrations on suspended particulate matter. Uptake rates from water for zooplankton used in the model are around .025 $L/g_{tissue}/d$ (x Cw, the ug/L dissolved Se concentration in water) from the dissolved phase, and 0.4 $g/g_{tissue}/d$ ingestion rate x 50% assimilation efficiency x Cp (concentration in particulate, ug/g).

Bay dissolved selenium concentrations are typically around 0.1 ug/L, with particulate concentrations about 10 times lower (0.01 ug/L), and TSS 10-20 mg/L, yielding 0.5-1.0 ug/g concentrations on suspended particles. Based on these estimates, direct uptake from the water column accounts for only 2% of selenium uptake for low trophic level animals such as zooplankton. It will be important to have quantitative results for the particulate phase in order to compare these results to particulate selenium generated by processes in the Bay. Assuming Se partitioning in wastewater is similar to that in ambient waters, if the detection limit for the particulate phase (in ug/L) is about 2% that for the dissolved phase, the uncertainty in uptake rates for the dissolved and particulate phase will be about the same order of magnitude, even if we get non-detects on the particulate phase.

Approach

Based on your correspondence to us, we understand that you would like us to collect effluent from six San Francisco Bay Area wastewater treatment plants during wet and dry

season conditions. The baseline assumption for this proposal is that six facilities will be sampled for 4 events (2 each in wet and dry seasons); the number of samples can be adjusted to include more locations or more samples per season with roughly a proportional change in cost. It is our understanding that you would like the project to begin in the first quarter of 2011. The effluent will then be analyzed for particulate Se and dissolved Se species using the approaches described below.

It is likely that the fraction of particulate Se in the effluent samples will be low, as the concentrations of total dissolved solids are not very high (typically < 20 mg/L). If this is indeed the case, it will not be feasible to determine particulate Se by difference between the total Se concentrations in a filtered and an unfiltered sample aliquot (after digestion), because the sum of the analytical errors would likely be larger than the actual particulate fraction. Specifically, this approach may suggest the presence of a significant particulate Se fraction in some samples when there is in fact none.

The better approach to measure particulate Se is to filter a large volume of water in order to collect the particulate matter, and then digest the filter and measure the Se associated with the particles. This "positive" measurement approach will determine accurately if and how much particulate Se there is in a water sample, but it requires a much larger sample volume and significantly more time/effort for the sample filtration. We understand that large volume samples (10-20 L) will be collected from six wastewater plants for four events to cover a range of seasonal flows. Samples would be filtered "in house" by the POTWs and the filters would be sent to a BACWA laboratory (likely EBMUD) for analysis. Although many POTW's may have in house capabilities for Se analysis, especially if large enough samples are collected, we recommend that all participating plants send a sample to the same BACWA laboratory to minimize questions of comparability, optionally analyzing collected duplicate samples in house if desired.

Samples will be filtered to < 0.45 µm. The filtrate will be collected, with subsamples of the collected filtrate for a given site (e.g. for 10 filters of 1L each, 100ml of filtrate will be taken from each filtration to make a 1L composite sample). SFEI staff will be sent to the different POTWs to collect the filtrate composites for shipment to the analytical laboratory (Trent University, the laboratory of Prof. Dirk Wallschläger). Filtrate will be analyzed undiluted for discrete dissolved Se species by anion exchange chromatography-inductively-coupled plasma-mass spectrometry (AEC-ICP-MS) (Wallschläger & Roehl, 2001) with estimated detection limits around 0.01 µg/L per species. It is expected that selenite (= Se(IV)) and selenate (= Se(VI)) will be the only Se species detected by this method, but if any other discrete Se species are present in the samples and elute from the chromatographic separation (e.g. selenomethionine or selenocyanate), they will be detected and can be quantified. Their identity can possibly be determined by co-elution with standards.

The same sample will be analyzed for total dissolved Se by ICP-MS with similar detection limits to establish the dissolved Se mass balance (= sum of individual species / total dissolved Se concentration). This will check for the presence of any major dissolved Se species that are not detected by the AEC-ICP-MS method and can be used to estimate

by difference the "organic Se" species similar to that operationally estimated by difference in previous work by Cutter and coworkers for Bay ambient waters.

A parallel sample split will be analyzed at Laurentian University for "total dissolved organic" Se by selective sequential hydride generation-atomic fluorescence spectrometry (SSHG-AFS) using UV-assisted breakdown of organic matter and discrete organic Se compounds to the hydride generation-active Se(IV) (Chen et al., 2005). This would provide a more specific breakdown of the chemical species to get a "positive" determination of contributions to "organic" Se. Optionally, organo-Se could be reported using only one of the two methods, with a reduction in analysis cost by ~$2,400.

Deliverables

San Francisco Estuary Institute will provide a short memorandum highlighting the findings which will include a summary table of results and appendix with the data reported by the laboratory. The laboratory will report the results to us within a one month sample turn around time. SFEI review of results after the first sampling event will allow adjustment of sample sizes for future events as needed. Based on one month lab turnaround, we anticipate the summary memorandum could be completed in the fourth quarter of 2011 (e.g. by sampling in January, April, July, and September).

Cost Estimate

For purposes of developing the cost estimate, we have assumed that we will be collecting already filtered effluent samples from six facilities for four events during the course of 2011. We have assumed that we can collect effluent from all six facilities in two days or less. Plant staff will conduct the large volume filtration at the plants using 10-20 liter samples, and provide composites of filtrate for SFEI staff to collect and send to Trent Univ. in Peterborough, ON, Canada. SFEI staff can also drop off particulate samples collected from other plants at any designated treatment plant laboratory (e.g. EBMUD) while arranging pickup of filtrate from that plant.

The cost to conduct this work is:

SFEI labor	$14,000
Indirect costs	$ 1,500
Laboratory	$ 8,300
Total cost	$23,800

If the scope of work that we have outlined above or a variant thereof (e.g. adjustments to sample number, timing, types of analyses) is of interest to BACWA, please let us know so that we can develop a contract. We look forward to working with you.

Regards,

Donald Yee
Senior Scientist

Meg Sedlak
RMP Program Manager

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 12

FILE NO.: 12,877

MEETING DATE: January 3, 2013

TITLE: Annual ReNUWIt Membership Dues

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Consider continued participation in ReNUWIt; consider approval of participation dues for membership in the Affiliates Program of Stanford University's Engineering Research Center for Re-inventing the Nations's Urban Water Infrastructure (ReNUWIt).

SUMMARY

This action would allow BACWA to continue to participate as a member of the Affiliates Program of the ReNUWIt. BACWA budgeted $10,000 for continued participation. The letter from ReNUIt and its fee structure is attached. There is not a fee structure for JPA's. BACWA participated at the $10,000 level last year.

FISCAL IMPACT

Funds are available for this contribution under the BACWA Collaboratives & Sponsorships, Stanford ERC FY 2012-13 Budget line item.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:

1. ReNUWIt Letter and Membership Application/Invoice, December 21, 2012

Department of Civil &
Environmental Engineering
Stanford University
Stanford, CA 94305-4211

December 21, 2012

Mr. Jim Kelly
Bay Area Clean Water Agencies
P.O. Box 24055
MS 702
Oakland, CA 94623

Dear Jim:

As one of the initial members of ReNUWIt's Industrial Advisory Board (IAB), you've been integral to our success during our first year of operation. Among our numerous accomplishments this past year were:

- Establishment of an IAB comprising 25 innovative water industry partners in the US and abroad;
- Successful Annual Meeting at Stanford in May with unanimous support from NSF to continue ReNUWIt funding;
- Working with various IAB members on specific projects/initiatives (e.g., Veolia, OCWD, Geosyntec, Sonoma County, BACWA, LADWP, Aqua-Aerobics, Biovantage, Aurora, Palo Alto, Discovery Bay, and Plum Creek among others);
- Joint authorship on research papers, e.g., Kennedy/Jenks
- Utility Forum at Stanford on February 28; 20+ managers helping us better understand barriers to implementation;
- Industrial Advisory Board meeting in Golden, CO on October 25-26 with discussions on smart water grids and strategies for more effective collaboration;
- Established monthly newsletters with the IAB to better share information; and
- Website improvements provide each IAB member with access to a members-only section, which includes project briefs, annual report, publications, and presentations.

While we consider our first year to be successful, there is much left to accomplish going forward and we need your continuing support and contributions. Among the initiatives we've identified for Year 2 are:

- Working to better address areas identified in the IAB SWOT:
  - Communications and IAB involvement: regular webcasts, more active participation in Center vision assessment & review;
  - More IAB participation on U thrust projects;
  - Continue to explore links among IAB members and current/future projects through targeted meetings and workshops, e.g., with local and regional agencies and engineering firms; and

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  - Better outreach to stakeholders and general public (and funding to do so)
- Recruiting IAB members that bring new experiences/expertise and can benefit from membership in ReNUWIt;
- Exploring workshops, with IAB support, that can expand the reach of ReNUWIt (e.g., NGOs, utility board members, regulators);
- Ramping up IAB subcommittees and generate outcomes that help the IAB and ReNUWIt in communications, workforce development and technology implementation; and
- Working together on a successful SWOT analysis with more engagement from the IAB and more time for participation and comment.

Enclosed is an invoice for Year 2 membership in the ERC Affiliates Program. Thank you in advance for your continuing participation and please let me or Terri Tippets know if you have any questions in the meantime. We look forward to working with you again this year and in the years ahead.

Sincerely,

Richard G. Luthy
Stanford University
Director, Engineering Research Center for
Re-inventing the Nation's Urban Water
Infrastructure (ReNUWIt)

ERC INDUSTRIAL AFFILIATES
MEMBERSHIP FORM

[Revised December 4, 2012]

ERC Industrial Affiliates Program contributions are used to expand the research and education activities of the Center and its impact towards advancing re-invention. The ERC Industrial Affiliates Program goals, operations and benefits on the date of execution are described at http://urbanwatererc.org/industry. The membership structure is based on the number of employees. Principal Members and Student Fellowship Members may designate their annual contribution be directed towards a research thrust or theme.

Membership Structure	Annual Contribution Amount
Associate Member (less than 15 employees)	$2,000
Member (between 16 and 49 employees)	Proportional from $2,000 to $10,000
Member (greater than 50 employees)	$10,000
Principal Member	$25,000
Student Fellowship Member	$50,000
Non-profit Organization (IRS code 501(c)(3))	$5,000

Please make check payable to Stanford University, fill out and return completed form to:

Ms. Terri Tippets, Administrative Director
Re-inventing the Nation's Urban Water Infrastructure [ReNUWIt]
Stanford University
473 Via Ortega, Room 117
Stanford, CA 94305-4211

DETAILS

Business Name: _____

Business ID Number: _____

Purchase Order #: _____

ReNUWIt Vendor #: _____

Period Covered by Payment: _____

TOTAL AMOUNT DUE: _____

Business Address

Number or PO Box: _____
Street: _____
City: _____
Country: _____
Postal Code / Zip code: _____

Contact Person:

Name: _____
Title: _____
Email address: _____
Phone: _____

Signature: _____ **Date:** _____

BACWA EXECUTIVE BOARD ACTION REQUEST

AGENDA NO.: 13
FILE NO.: 12,680
MEETING DATE: January 3, 2013

TITLE: Revised Scope of SFEI Nutrient Strategy Development to Redirect $25,000 to Ocean Exchange Project

☒ **MOTION** ☐ **DISCUSSION** ☐ **RESOLUTION**

RECOMMENDED ACTION

Approve revision to scope of SFEI Nutrients Strategy Development agreement redirecting up to $25,000 of current funds to support initial efforts toward assessing nutrient exchange through the Golden Gate.

SUMMARY

As described in the attached memo from David Senn, the Board is being asked to authorize reallocation of up to $25,000 to a new task under the current agreement with the San Francisco Estuary Institute (SFEI) for Nutrients Strategy Development. This will not impact the total amount BACWA has committed to this project, $350,000 ($175,000 from FY2011-12 and $175,000 from FY2012-13) to support Nutrients Strategy Development through June 30, 2013. The original scope dated February 2012 allocated funds among 4 tasks, and on October 5 and November 29 the Board approved reallocating funds as indicated below. This request would result in further shifting of funds from the revised estimate, though it is not clear which task(s) will be impacted by the reallocation. The table below also shows the cumulative amount billed through the most recent invoice, covering services through October 31, 2012.

Estimated Task Budget and Current Balance

Task	*Description*	*Original Estimate*	*Revised Estimate*	*Billed thru 10/2012*
1	Project Administration and Reporting	$38,547	$18,547[1]	$17,069
2	Nutrient Strategy Development and Coordination	$115,114	N/C	$65,537
3	Numeric Modeling: Suisun Bay and South Bay	$116,672	$89,672[2]	$0
4	Synthesis of Science: Suisun Bay	$79,667	$99,667[1]	$80,813
	November 29th Revised Scope Proposal Part 1a, scope development for Decision Tree Part 2a, Decision Tree development		 $15,000[2] $12,000[2]	 $0 $0
TOTAL		$350,000	$350,000	$163,418

[1] October 5, 2012 Board authorized reallocation
[2] November 29, 2012 Board authorized reallocation

FISCAL IMPACT

No new funding is being requested for this action, as this is only a reallocation of current contract funds, however shifting funds may impact the ability to complete other work outlined in the scope.

ALTERNATIVES

This action does not require consideration of alternatives.

Attachments:
1. Memo from David Senn dated 12/18/2012

Memo 12/18/2013
To: BACWA Board
From: David Senn
Re: Proposal to revise scope from CY2013 funding to redirect a portion (up to $25k) of the current funds to support initial efforts toward assessing nutrient exchange through the Golden Gate.

With funding from the RMP, SFEI is currently developing a loading assessment report for San Francisco Bay (SFB) to quantify nutrient loads from known sources at the subembayment level, and identify major uncertainties. The major potential loads identified include loads from POTWs, loads from the Delta, loads from stormwater, and exchange through the Golden Gate (GG). Overall, that project is proceeding well, and on schedule for a draft report in March 2013.

Thus far we have made considerable progress on quantifying nutrient loads from the Delta, and how these vary on a monthly/seasonal basis and have changed over the past ~35 years. We have also made steady progress compiling data and quantifying nutrient loads from individual POTWs, refining those estimates based on historic and new effluent characterization data, where possible evaluating long-term trends in loads, and aggregating that information at the subembayments level for comparison with other sources. Stormwater data is quite limited in the Bay Area and loads from stormwater are highly uncertain. Nonetheless, we are developing an approach at the subembayments scale for obtaining order of magnitude estimates of stormwater nutrient loads based on spatially-varying precipitation data, runoff coefficients in >300 subcatchments calculated based on detailed GIS-based land-use and slope data, and estimates of land-use specific nutrient concentrations.

However, nutrient exchange between SFB and the coastal ocean through the GG currently remains a major unknown, and will not be sufficiently addressed by the RMP-funded study. On a daily basis, ~25% of SFB's volume is tidally exchanged with the coastal ocean. Recently-upwelled coastal waters can contain nitrate at fairly high concentrations (up to ~30 μmol L^{-1} or 0.4 mg N L^{-1}; for comparison Central Bay concentrations ~20 μmol L^{-1}). Under certain conditions, when recently upwelled water is present in the Gulf of Farallones outside the GG, rough calculations suggest that exchange through the GG could result in large net loads of nitrate into SFB. However, the conceptual model for nutrient exchange through the GG has not been sufficiently developed, and order of magnitude estimates of exchange under various conditions (and the duration of the conditions) are highly uncertain. In addition, the export and fate of nutrients exiting SFB to the coastal zone has not been adequately explored.

We propose a small project aimed at better characterizing nutrient exchange across the GG that, when combined with the RMP-funded loading study, will provide an overall fuller view of nutrient loads to SFB from major sources. This project will have five components:

1. Develop a conceptual model that lays out the factors regulating exchange across the GG of dissolved (nutrients) and particulate (e.g., phytoplankton) constituents, including:

factors regulating upwelling and its timing vs. no upwelling; conditions that favor vs. inhibit movement of freshly upwelled water into the Gulf of Farallones and in front of GG; flow and hydrodynamics within and at the GG that influence magnitude of net exchange into SFB (e.g.,gravitational intrusions vs. tidal dispersive exchange); and the transport by ocean currents of nutrients exported from SFB to the coastal zone.
2. Develop order of magnitude estimates of exchange under end-member and hybrid exchange conditions;
3. Perform a conceptual or semi-quantitative assessment of the relative frequency with which the different end-member and hybrid conditions would be expected to occur;
4. Identify factors/processes that would ultimately need to be considered in a future Bay hydrodynamic/water-quality model to account for nutrient exchange across the GG.

The project would be carried out by Dr. John Largier (UC-Davis) and Dr. Mark Stacey (UC-Berkeley), two experts in this field and with particularly strong experience in SFB on this topic. Largier and Stacey would carry out this work in close collaboration with SFEI. SFEI will subcontract directly with Largier and Stacey, using existing funds from the BACWA CY2013 funding. Thus, this is not a request for additional funds at this time (although it obviously impacts funds available for other planned work). The deliverable will be a stand alone short technical report describing 1-5 above. That report will also be incorporated as a chapter in the RMP-funded loading study.

Budget:

Largier, Stacey:	$15-20k	final scope still to be developed
SFEI:	$3k	collaboration, and project coordination
Total	$20-23k	