Implications for Restoration
Status and Trends of Chemical Contamination in the San Francisco Bay Estuary
Samuel N. Luoma, U.S. Geological Survey

Abstract

Chemical contamination in San Francisco Bay-Delta has improved since passage of the Clean Water Act in 1970. Some ecological recovery from the extreme contamination of 1950-1970 could be underway; but a range of indicator's suggest contaminant stress continues. The status of chemical contamination in the Bay-Delta is determined by modern inputs, historic activities and the influences of the physical, chemical and biological characteristics of the system. Studies of historic Pb contamination show that contaminants from a single point source can be spread throughout the interconnected reaches of the Bay-Delta because the system is shallow and well mixed by winds and tides. The same mixing processes may be one cause of continuing regional-scale PCB contamination in water, sediments and birds, despite the ban on use of this chemical. The food web of the Bay is also contaminated with methylmercury. Advisories exist prohibiting human consumption of some fish because of the contamination. Recent results show that mercury-contaminated debris from

Chair’s Message

Last night, I attended the Silicon Valley Intel-Carver Science Fair (see the accompanying article). What an event! Several hundred supporters of the Event including organizers, sponsors, volunteers, parents, and the Intel-Carver Scholars themselves participated in the science fair and awards ceremony. This event is a great example of corporate sponsors and volunteers working with the community to improve society. The Intel-Carver Scholarship Program gives young students the opportunity to actively participate in their own science education by working with mentors and creating science projects for presentation to the community. The Local Section actively supports such programs through the efforts of our members. On behalf of the Santa Clara Valley Section, Howard Peters has spent countless hours helping with this specific event as well as mentoring the Scholars. He deserves to be congratulated for his efforts. If you have an idea on how you

FEBRUARY Dinner Meeting

Date: Thursday, February 17
Time: Social hour: 6:00 pm
       Dinner: 7:00 pm
       Presentation: 8:00 pm
Speaker: Dr. Samuel N. Luoma
         U.S. Geological Survey
Location: Biltmore Hotel and Suites
         2151 Laurelwood Road
         Santa Clara, California
         (408) 988-8411
North of 101 off the Montague Expressway
Reservations: Shirley Radding
              (408) 246-2564
              (408) 296-8625 FAX
              sradding@att.net
Reservations should be made by February 14 stating name, company affiliation, number of people in party and meal preference. People can also register using our web site: www.scvacs.org/Local_Folder/din_mtg.html
Cost: $25.00 with choice of Grilled Salmon, Chicken Florentine, or Vegetarian Lasagna

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hydrologic mining in the Sierra Nevada (1852-1884) was incorporated into Bay sediments and is now being re-exposed by erosion of San Pablo Bay sediments. This may be major source of today’s fish contamination. Restoration of marshes or dam removals where sediments are rich in debris could make the mercury problems of the region worse. Selenium threatens sturgeon and some migratory birds in the Bay. The processes that determined this historic problem are known. However, the issues surrounding Se contamination are changing. New studies will be necessary to fully evaluate proposals to dispose, in the Bay, selenium from saline soils of the Western San Joaquin Valley soils, or to re-introduce San Joaquin River inflows to the Bay. Sporadic large inputs of modern pesticides from rivers and streams to the Bay are also known. Toxicity of pesticide-contaminated waters is apparently widespread in the Central Valley. But effects on resident species are not known.

Heavy metal contamination once had serious effects on animals in the Bay, but at least some of those effects have receded with improved waste treatment. Historically, Ag and Cu contamination at a hotspot in South Bay caused reproductive failure in local animals; reproductive success returned as waste treatment was upgraded and contamination subsided. Thus, investments in attacking contamination problems can reap benefits. Questions about ecological effects of Cu and Ni on phytoplankton in South Bay remain unanswered, however. New South Bay issues are also arising, such as airport runway modifications, potential restoration of large tracts of wetlands and changes in how USEPA enforces some pollutant standards. All appear to have implications for contaminant trends, but knowledge of the outcome depends upon sustaining study and monitoring in the Bay-Delta ecosystem.

**Biography**

Samuel N. Luoma received a PhD in Zoology from the University of Hawaii in 1974 (MS from Montana State in 1970). He has worked for the U.S. Geological Survey as a project chief since 1975. Research interest include processes controlling adverse effects of pollutants, water quality issues in San Francisco Bay and effects of mine waste in rivers. Recent studies evaluate issues related to selenium, copper, mercury, lead and cadmium in the Bay-Delta and in the Clark Fork River, Montana. The project has published more than 135 papers in the peer reviewed scientific literature. Luoma is active in providing expertise about environmental issues for committees, workshops, thesis committees for students, and national/international advisory groups. Between 1985 and 1987 he was Chief of Branch of Western Region Research at USGS; in 1989 he received the Distinguished Service Award from the U.S. Department of Interior. In 1984 his textbook, Introduction to Issues was published. He is currently editor of the international scientific journal Marine Environmental Research, and an editorial advisor to the journal Marine Ecology Progress Series.
CHEMPLACEMENT ABSTRACTS 3267

Position Title: Research Associate, Optical Engineering
Job Description: Responsible for maintaining analytical facilities at Quantum Dot Corp as well as running measurements for analysis of new type of fluorescent material (quantum dots). Will work closely with engineers, chemist and bio to develop & optimize new analytical tools for QC & QA analyte. Will be using single-molecule spectroscopy. May also involve design & building of board-level optical systems for laser excitation.

QUALIFICATIONS DESIRED
Education: BS in Chemistry or related field
Experience: At least 1 year of research experience in fluorescent materials or related field

APPLICATION INSTRUCTIONS
Send resume to: Human Resources (ENG-1/00) Quantum Dot Corp.

CHEMPLACEMENT ABSTRACTS 3268

Position Title: Senior Development Specialist, Research Purification Process Dept.
Job Description: Develop new purification processes for mgf protein therapeutics & to improve existing processes, design & implement exprts at both the lab & semi-preparative scales. May allow you to oversee a process development lab

QUALIFICATIONS DESIRED
Education: BS in Biochemistry or Bioengineering
Experience: At least 2 yrs expr in expr & purification exper in biotech

APPLICATION INSTRUCTIONS
Send resume to: Human Resources, Quantum Dot Corp.

CHEMPLACEMENT ABSTRACTS 3269

Position Title: Associate Chemist
Job Description: Synthesis of new organic cpds to be evaluated as anti-microbial agents.

QUALIFICATIONS DESIRED
Education: BS/BS or MA/MS, organic chemistry
Experience: At least one yr of independent research expr in org synthesis is required; a record of publication is desirable. Should also possess excellent communication skills & should have the ability to work both independently & as part of a multidisciplinary team.

LOCATION, SALARY, MAIL ADDRESS
Location: Mountain View
Salary: Competitive salary & benefits

APPLICATION INSTRUCTIONS
Send resume to: Yamanouchi Pharma Technologies

CHEMPLACEMENT ABSTRACTS 3270

Position Title: Quality Assurance Officer
Job Description: Perform GLP quality assurance duties for an analytical service lab. Review validation & analytical reports, perform in-process inspections, conduct facility audits. Assess compliance with applicable GLP, GMP & GCP regulations.

QUALIFICATIONS DESIRED
Education: BS chemistry or related field
Experience: Min of 3 yrs exp in an analytical chem lab, familiarity with GLP regulations required. Previous GLP exp a plus. Prior QA exp strongly preferred. Good written & verbal communication skills are essential.

LOCATION, SALARY, MAIL ADDRESS
Location: Sunnyvale
Salary: Commensurate with exp

APPLICATION INSTRUCTIONS
Send resume to: Sanofi

CHEMPLACEMENT ABSTRACTS 3271

Position Title: Chemist I/II
Job Description: Perform routine analysis of pharmaceutical cpds in biological samples using HPLC or LC/MS/MS. Assist HPLC method development & validation. Conduct lab instrument calibration & maintenance when needed.

QUALIFICATIONS DESIRED
Education: BS chemistry or related field
Experience: At least 1 year of experience in HPLC analysis of pharmaceutical cpds in biological samples.

APPLICATION INSTRUCTIONS
Send resume to: PHARMout Laboratories, Inc.

CHEMPLACEMENT ABSTRACTS 3272

Position Title: Bioanalytical Chemist
Job Description: Carry out analysis of pharmaceutical cpds in biological matrices. Includes sample prep, instrument set-up operation & data analysis.

QUALIFICATIONS DESIRED
Education: BS chemistry or equivalent
Experience: At least 1-3 yrs exper in expr & pharmaceutical analysis. Has experience in the use of Excel & is highly desirable. Good oral & written communication & teamwork & ability to work independently.

LOCATION, SALARY, MAIL ADDRESS
Location: Sunnyvale
Salary: Competitive salary & benefits

APPLICATION INSTRUCTIONS
Send resume to: CytoDyn

CHEMPLACEMENT ABSTRACTS 3273

Position Title: Research Associate
Job Description: Perform multi-step synthesis, purification, & characterization of small molecules for biological evaluation. Must also support general laboratory functions.

QUALIFICATIONS DESIRED
Education: BS/MS chemistry
Experience: 2 yrs lab exp in org synthesis prefer. Demonstrated skills in synthesis, modern analytical methods & separation techniques. Good oral & written communication skills & ability to work well in a team oriented environment are essential.

LOCATION, SALARY, MAIL ADDRESS
Location: Dublin
Salary: Competitive salary & benefits

APPLICATION INSTRUCTIONS
Send resume & references to:

CHEMPLACEMENT ABSTRACTS 3274

Position Title: Chemist/Staff Scientist
Job Description: Plan & conduct syntheses of organic molecules from a wide variety of structural types, primarily peptides & fused heterocyclic systems. Establish a limited combinatorial synthesis program to exploit enriched libraries. Maintain expertise in design of DNA-binding drugs for planning new directions.

QUALIFICATIONS DESIRED
Education: PhD, org chem
Experience: At least 2 yrs postdoc work in synthetic methods. Combinatorial chem exp optional. Plan research independently with guidance from supervisor. Analyze & present results to company & to outside scientific meetings. Document findings for patent applications. Publish new findings as appropriate.

LOCATION, SALARY, MAIL ADDRESS
Location: Redwood City
Salary: Competitive salary & benefits

APPLICATION INSTRUCTIONS
Send resume to: Genelabs Technologies, Inc., HR Dept, Job#2003-07 505 Penobscot Drive, Redwood City, CA 94063 FAX: 650-363-6080 email: hr@genelabs.com

CHEMPLACEMENT ABSTRACTS 3275

Position Title: Analytical Chemists
Job Description: Will do raw material testing, analyses of in-process samples, prod release testing & stability programs.

QUALIFICATIONS DESIRED
Education: BS chem, pharmaceutical sciences or related discipline
Experience: 2-12 yrs exp in cGMP-compliant pharmaceutical analytical lab. Must be familiar with typical analytical lab equipment (e.g. HPLC, GC, TLC, dissolution bath) & data analysis software operation. Exper with chromatography & dissolution software & LIMS systems is highly desirable.

LOCATION, SALARY, MAIL ADDRESS
Location: Palo Alto
Salary: Competitive salary & benefits

APPLICATION INSTRUCTIONS
Send resume & cover letter to: Yamano Chemical Technologies HR Dept, Attn: Job #4011000-AC 1105 Arastadero Road, Palo Alto, CA 94304 email: jobs@yspharma.com FAX: 650-849-8565

CHEMPLACEMENT ABSTRACTS 3276

Position Title: Pharmaceutical Chemist
Job Description: Working within a GMP environment, perform lab analyses for development of solid dosage forms, evaluate formulation manufac variables, & report project status.

QUALIFICATIONS DESIRED
Education: BS/MS chem
Experience: 3-10 yrs exp in formulations & process development of solid dosage forms & familiarity with solid dosage form process equipment. Strong tech writing, written/verbal communication & analytical thinking & problem solving skills a must.

LOCATION, SALARY, MAIL ADDRESS
Location: Palo Alto
Salary: Competitive salary & benefits

APPLICATION INSTRUCTIONS
Send resume & cover letter to: Yamano Chemical Technologies HR Dept, Attn: Job CM10000-PC 1105 Arastadero Road Palo Alto, CA 94304 email: jobs@yspharma.com FAX: 650-849-8565

LITERATURE SEARCHES

Shirley B. Radding
2994 Cottonwood Court
Santa Clara, CA 95051-6111
408-246-2564
408-296-8625
e-mail: stradding@att.net
CALL FOR VOLUNTEERS

National Historic Chemical Landmark

The SCV-ACS will establish a National Historic Chemical Landmark (NHCL) in October/November 2000 at Stanford University Medical Center and UCSF in San Francisco to commemorate the pioneering research of Dr. Stanley Cohen (SU) and Dr. Herbert Boyer (UCSF). It will be the first NHCL to honor an advance in biochemistry. Volunteers are need NOW to serve on the organizing committee, finalize the proposal, raise funds, and organize and run the Landmark Event.

Please contact ASAP for more information:
Dr. Howard Peters, Acting Chair
(650) 324-1677 Ext 20
e-mail: peters4pa@aol.com

Kidvention

The SCV-ACS Section will hold a KIDVENTION at the National ACS meeting.

This is a hands-on opportunity to learn about patents and inventing. The program will be for about 200 local 3rd and 4th graders at Moscone Center from 9-2:30 on Saturday, March 25. This is an urgent call for volunteers to participate in the planning, be coaches or mentors and volunteer for the fun on March 25. A great time will be had by all.

Please contact:
Dr. Hugh Dubb, Acting Chair
(650) 591-4243
e-mail: hdubb@earthling.net

Hospitality Suite for the ACS National Meeting

Do you have a secret desire to be a San Francisco Bay Area Travel Agent? Do you enjoy sharing your knowledge of the Bay Area with others? Do you like helping other chemists and their spouses find worthwhile things to do in the area? If you answered yes, you might be interested in volunteering at the Hospitality Suite for the ACS National Meeting, March 20 to 24.

Volunteers are needed to answer questions from fellow chemists attending the National Meeting about activities in the Bay Area. You don’t need to be an expert, just informed. If you can volunteer for a couple of hours during these days, please contact:
Sally Peters
(650) 854-4614
e-mail: speters@parc.xerox.com

Chemistry Olympiad

Roy Rocklin, Chemistry Olympiad coordinator, is inviting chemists interested in the Olympiad to help out with this year’s event. This will involve spending one Saturday in April helping with the National Examination, as well as an hour or two stuffing envelopes.

The Chemistry Olympiad begins with a local section test administered to high school students. The top performers are invited to take the National Examination. Winners of this exam are invited to an all-expenses-paid retreat at the Air Force Academy in June, where they continue studying chemistry.

Top students from this group are selected to be on the U.S. team that competes in the International Chemistry Olympiad. If you would like to help, contact:
Roy Rocklin
e-mail: Rocklin@aol.com

Students Needed-ACS National Meeting
San Francisco March 26-30, 2000

Operations Assistants: Assist in distribution of literature, run errands, and set-up poster sessions.
Registration Assistants: Distribute badge holders and programs, assist with credit card registration lines.

Students will be paid $7/hour plus parking.
Please contact: Dr. Jamil Talhouk
Fax: (925) 449-1866
E-mail: esp@value.net

Public Understanding of Chemistry Day
Saturday, March 25, 2000

Any assistance you can provide in encouraging participation would be appreciated. Any suggestions of places to put announcements inviting the public to come see the demonstrations would also be appreciated. There might be a need for a few volunteer helpers.

For Chemagination competition, contact:
Kathleen Thompson
e-mail: kmt97@acs.org
For K-8 demonstrations, contact:
Michael Tinnem
E-mail: mjt97@acs.org
For 2-3 overall traffic monitors, contact:
Michele Gandy
e-mail: m_gandy@acs.org
Chris Pruitt
e-mail: cpp91@acs.org
Dr. George Washington Carver
State Day of Recognition Event
January 5, 2000    Silicon Valley

In 1993 ACS National first started work relating to Minority Affairs. While most ACS local sections have not yet created a formal Committee on Minority Affairs, the Santa Clara Valley Section has had a Committee since 1997. Dr. Howard Peters, a Palo Alto chemical patent attorney, has acted as the first chair. Initial work by our committee resulted in a resolution in 1997 from the ACS Board and Council endorsing the creation of an official State Day of Recognition in all states to recognize the contributions of the renown agricultural chemist, Dr. George Washington Carver. Through cooperation and partnership with the local, African American-directed The Healing Institute, the ACS Santa Clara Valley Section provided documents that were helpful in having California become the tenth state to create a State Day of Recognition to honor Dr. George Washington Carver. Halim Mustafa, the community entrepreneur and Founder and Director of The Healing Institute is a former policeman from East Palo Alto, CA.

After much planning and many volunteer hours, The Healing Institute, in partnership with Intel Corporation, the Alliance of Black School Educators, the American Chemical Society, and others, created the Carver Scholars with about 100 African American grade and high school students in Silicon Valley. This program won a special award in 1999 for The Healing Institute from the U.S. Congress for the best public-private program to encourage minority students in science and engineering.

On January 5, 2000 The Healing Institute and its partners cooperated to hold the first ever Intel-Carver Science Fair for African-American students at the Santa Clara Convention Center in the Silicon Valley. About 60-70 students participated. About half of the science fair judges were local ACS volunteers. KRON-TV (Channel 4 of San Francisco) had a short segment focusing on the students and their projects on the 11 o’clock news. It is anticipated that many of these first time exhibitors will now exhibit their science project in the local mainstream science fairs.

The Carver Recognition Day and Intel-Carver Science Fair Award dinner in the evening included a special videotaped address by President Bill Clinton. The President praised the many contributions of Dr. Carver often in the face of adversity and congratulated The Healing Institute and its partners in Santa Clara for their pioneering volunteer efforts in encourage minority students in science and engineering. Dr. T.O. Bartley (retired) of San Diego, a Tuskegee University graduate and former student of Dr. Carver, gave the keynote address.

Future cooperative projects for the partners include – having all 50 states declare a Carver Recognition Day each January 5, having many Carver recognition events each January 5 around the nation, expanding the Carver Scholars Program and Carver Science Fair Program throughout California and the nation, and encouraging the U.S. Treasury to recognize the contributions of African American chemist Dr. George Washington Carver by issuing a new U.S. coin or new U.S. currency for general circulation honoring Dr. Carver.

Editor’s Corner

This newsletter was posted on our web site during the last week of January. If you would like to see the March edition early it will be posted during the last week of February.

www.scvacs.org/newsletter/index.html
FEBRUARY 2000 NEWSLETTER TOPICS:

Implications for Restoration, Status and Trends of Chemical Contamination in the San Francisco Bay Estuary
Chair’s Message
Shirley B. Radding Award Call for Nominations
Call for Volunteers
Dr. George Washington Carver State Day of Recognition Event
Editor’s Corner

CHEMPLOYMENT ABSTRACTS

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 Treasurer Hong Gao 650-494-5197
Past-Chair Jamil Talhouk 925-449-2664

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1998-00 Sally Peters 650-812-4994
1999-01 Bonnie Charpentier 650-354-2344
1999-01 Herb Silber 408-924-4954
2000-02 Maureen Scharberg 408-924-4966
2000-02 John F. Riley 650-328-2746
2000-02 Ean Warren 650-329-4554

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2000-02 Roy Okuda 408-924-2525
2000-02 Donna Drogos 408-265-2600
2000-02 Lance Wong 650-829-1148

ACSEditor Steven Colby 650-938-4502
e-mail: colby@sisweb.com
Web Site: www.sisweb.com

FUTURE MEETINGS

Feb 17 SCV Dinner Meeting
Dr. Samuel N. Luoma
Mar 25 Kidvention, San Francisco
Mar 26-31 National ACS Meeting
San Francisco
Mar 29 Mosher Award Luncheon and Symposium
San Francisco
Apr 26 SCV Dinner Meeting
Dr. Carl Djerassi
May 20 Illustrating Nature Exhibit
UCSC, Santa Cruz

For the latest information, please visit the SCVACS Web Site: http://www.scvacs.org

CHEMPLOYMENT ABSTRACTS

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