

Water Quality Data Inventory

October 2006

original compilation by Heather Peterson, USGS
for best results, print into 11 x 17 paper

Key to column headers

Pond/Trib/Bay: "P" indicates the data are from inside the ponds. "T" indicates that the data are from the creeks that are tributaries to San Francisco Bay. "B" indicates that the data are from southern San Francisco Bay.

Continuous Data: "X" indicates data are recorded by automated devices that are left in place for extended periods of time. Typically the data are recorded at 15-minute intervals for weeks or months at a time.

Discrete Sonde Data: "X" indicates data are collected manually with data sondes by monitoring staff during sampling events. Typically sampling events occur weekly, monthly or annually.

DO: "X" indicates dissolved oxygen is measured. Dissolved oxygen is the amount of gaseous oxygen (O₂) dissolved in an aqueous solution. DO is generally reported in mg/l.

Chl a: "X" indicates Chlorophyll a is measured. Chlorophyll a is a green photosynthetic pigment found in most plants, algae, and cyanobacteria. For this project, chlorophyll a concentration is used as a proxy measurement for phytoplankton concentration.

Nutrients: "X" indicates nutrients are measured

Metals: "X" indicates metals are measured

Available/Request: "A" indicates that the data are available on the world wide web, and can be downloaded freely by the public. "R" indicates the data must be requested through the contact person listed for the data element.

Glossary and abbreviations

ADCP: Acoustic Doppler Current Profilers

BMI: Benthic Macro-Invertebrate

CDFG: California Department of Fish and Game. See <http://www.dfg.ca.gov/> for more information.

Cs: Cesium

CTD: An instrument that simultaneously measures electrical conductivity, temperature, and pressure (depth). Often sensors for other constituents such as dissolved oxygen, and pH are also bundled with the CTD sensor array.

Cu: Copper

Data sonde: an instrument package with sensors that measure conductivity, temperature, pressure (depth), and other water quality constituents such as dissolved oxygen, turbidity, and chlorophyll a. Instrument packages often come with internal data-logging devices. Sondes can be carried by field staff to collect in-situ measurements or left in-situ for extended periods (weeks or months) to collect data at regular (generally 15-minute) intervals.

DOC: Dissolved organic carbon; the organic carbon present in surface water that passes a 0.2 mm filter.

EC: Conductivity.

EOA: Eisenberg, Olivieri and Associates, Inc.

Grab Samples: For this program grab samples are water or sediment samples collected at the sampling site for later analysis in a laboratory, in contrast to data collected in the field with instrumentation such as a data sonde.

Hg: mercury

LTMAP: Long-Term Monitoring and Assessment Plan sponsored by Stanford University and City of Palo Alto and managed by the San Francisco Watershed Council

MeHg: Methylmercury

NASA: The National Aeronautics and Space Administration

NH₄: Ammonium

Ni: Nickel

NO₂: Nitrite

NO₃: Nitrate

NPDES: National Pollutant Discharge Elimination System (NPDES) program was established by the federal government to control point-source discharges of water pollution. The program, created in 1972 under the Clean Water Act, is responsible for controlling and regulating point sources of discharge of pollutants to waters within each state to maintain, protect, and restore the water quality of streams, lakes, and rivers.

OBS: Optical Backscatter, a measure of turbidity or water clarity

OP Pesticides: organophosphate, organophosphorus pesticides

PAHs: Polycyclic aromatic hydrocarbons

Pb: Lead

PBDE: polybrominated diphenyl ether

PCBs: polychlorinated biphenyls

pH: pH is a measure of the acidity of a solution in terms of activity of hydrogen ions (H⁺). Materials with a pH below 7 are considered to be acidic, while materials with a pH above 7 are considered to be basic.

PO₄: Phosphate

POTW: Publicly Owned Treatment Works, where sanitary sewage and waste water are treated and purified before release to surface water bodies

ppt: Parts per thousand

psu: practical salinity units measure the conductivity ratio of a sea water sample to a standard KCl solution.

RMP: Regional Monitoring Program is SFEI's largest program and monitors contamination in the San Francisco Bay Estuary

RWQCB: Regional Water Quality Control Board

S0₄: Sulfate

Sal: Salinity

SBSPRP: South Bay Salt Pond Restoration Program, the largest tidal wetland restoration project on the west coast of the United States. See <http://www.southbayrestoration.org/>

SCVURPPP: Santa Clara Valley Urban Runoff Pollution Prevention Program, an association of thirteen cities and towns in the Santa Clara Valley, together with Santa Clara County and the Santa Clara Valley Water District. Program participants share a common permit to discharge storm water to South San Francisco Bay, California. To reduce pollution in urban runoff to the "maximum extent practicable", the Program incorporates regulatory, monitoring and outreach measures for South San Francisco Bay and the streams of the Santa Clara Valley. For more information see: <http://www.scvurppp-w2k.com/default.htm>

Se: Selenium

SFB: San Francisco Bay

SFBBO: The San Francisco Bay Bird Observatory, an organization dedicated to the conservation of birds and their habitats through science and outreach, and to contributing to informed resource management decisions in the San Francisco Bay Area. See <http://www.sfbbo.org/> for more information

SFEI: The San Francisco Estuary Institute was founded as a non-profit organization in 1986 to foster the development of the scientific understanding needed to protect and enhance the San Francisco Estuary. For more information see: <http://www.sfei.org/index.html>

SFSU: San Francisco State University. For more information see: <http://www.sfsu.edu/>

SiO₂: Silica – Silicic Acid

SMP: Self Monitoring Program conducted by the SBSPRP, sampling water discharged from opened ponds as required by the USFWS, CDFG, and RWQCB to assure that salinity, pH, temperature, and dissolved oxygen (DO) of discharged waters are not harmful to biological resources.

Sonde: See data sonde

SSC: Suspended sediment concentration

TEMP: Temperature, generally reported in degrees Celsius

TMDL: Total Maximum Daily Load, see <http://www.epa.gov/owow/tmdl/> for more information.

TSS: Total suspended solids; for this program a measurement of the dry-weight of particles trapped by a filter, typically of a specified pore size

Turb: Turbidity, a measure of water cloudiness

USFWS: The U.S. Fish and Wildlife Service. For more information see: <http://www.fws.gov/>

USGS: United States Geological Survey. For more information see: <http://www.usgs.gov/>

Group:	Study Description	Location	Sampling Site Names	Sample Depth	Interval	Dates	Pond/Trib/Bay	Continuous Data	Discrete Sonde Data	DO	Chl a	Nutrients	Metals	Available/Request	Notes
1) USGS, Takekawa group															USGS (John Takekawa's group) conducted water quality sampling for ponds and sloughs that was required of USFWS and CDFG under the SMP in accordance with the pond Waste Discharge Requirement (RWQCB). This applies to the following ponds and related discharge areas: Alviso ponds A1, AB1, A2E, A2W, AB2, A3N, A3W, A5, A6, A7, A8, A9, A10, A11, A12, A13, A14, A15, A16, NCM, A17, A19 A20, A21, A22, A23; Baumberg ponds B1, B1C, B2, B2C, B3C, B4, B4C, B5, B5C, B6, B6A, B6B, B6C, B7, B8, B8A, B9, B10, B11, B12, B13, B14; Ravenswood ponds R1, RSF2, R2, R3, R4, R5, RS5. For pond flow and gate operations information for Alviso and Ravenswood ponds contact Eric Mruz, for Baumberg/Eden Landing ponds contact John Krause.
a) Pond															
	Water quality, discrete data sonde plus specific gravity	All 55 ponds (see notes, above)	1 to 4 sites per pond. See Appendix 1 for sampling site names.	near surface, near bottom	Monthly	August 2003 - present	P	X	X					R	Monthly sampling at up to 4 locations per pond in all 55 ponds (Alviso, Baumberg, Ravenswood). Data are collected by data sonde (EC, pH, turb, temp, DO). Surface and bottom discrete samples collected by data sonde where water depth >60cm. Surface only where depth <60cm. Surface specific gravity measurements (datasonde salinity is questionable when salinity > 70ppt). See Takekawa et al. (2005) p. 8, etc. for details. Sampling locations are referenced by pond number (A indicates Alviso ponds, B is for Baumberg/Eden Landing, R is for Ravenswood) and grid cell (the grid runs 1, 2, 3 from north to south and A, B, C from west to east, grid maps are available from Nicole Athearn). Samples are not always taken in the same location every month depending on location accessibility and pond conditions. Data contact: Nicole Athearn.
	Management sampling: in-pond water quality & specific gravity, twice monthly to monthly	2004: A2E, AB2, A2W, A3W, A7, B2, B10; A2E, AB2, A3N, and B4. 2005: A14, A16, B2C, and B8A	1 site per pond	near surface	Monthly, twice monthly	2004, 2005	P	X	X					R	Water quality measurements are taken twice monthly in ponds A2E, AB2, A2W, A3W, and A7, B2 and B10 from May through July 2004. Sampling was continued monthly during 2004 in A2E, AB2, A3N, and B4 following the initial release of ponds A3W and B2. Twice monthly management samples were also taken at A14, A16, B2C, and B8A beginning in Feb, 2005. As of 2006 this activity is no longer required as part of the RWQCB sampling. Data contact: Nicole Athearn
	Discharge monitoring: Part 1: Continuous data sonde at pond outflow (sal, pH, DO and temp)	2004: A2W, A3W, A7, B2, B10; 2005: A14, A16, B2C, B8A, B1; 2006: A2W, A3W, A7, A14, A16, A17, *A5, B2, B2C, B8A, *B6A, *B1	At outflow	near surface	Continuous, 15 minute	2004, 2005, 2006	P	X	X					A	Continuous datasondes were installed in ponds A2W, A3W, and A7, B2 and B10, prior to initial release dates and through October (A2W, B2, and B10) or November (A3W and A7) 2004. These sondes were reinstalled before May 1 for the 2005 release year. New sondes were installed at A14, A16, B2C and B8A prior to their release dates (beginning April, 2005). Sensors were installed at ~25 cm depth. Salinity, pH, temperature, and DO measured at 15 minute intervals. See Takekawa et al. (2005) p. 9, etc. for details. In 2005 water quality in pond B10 was measured by handheld datasonde due to broken flow gates. Station locations with "" have limited data sets for that year. Data are available at http://www.southbayrestoration.org/Monitoring.html Data contact Nicole Athearn
	Discharge monitoring: Part 2: Discrete IRM sampling 1 wk before opening and 1,3, 7 days after, and weekly to monthly thereafter for water quality and Chl a.	2004: A2W, A3W, A7, B2, B10; 2005: A14, A16, B2C, B8A; 2006: A19, A20, and A21	At outflow	near surface	Weekly	2004, 2005, 2006	P	X	X	X				R	Five ponds were monitored prior to initial release dates and through October (A2W, B2, and B10) or November (A3W and A7) 2004. Ponds A14, A16, B2C and B8A were monitored prior to their release dates (beginning April, 2005) and through 2006. For 2006, ponds A19, A20, and A21 receiving waters were monitored before and after the initial breach, and weekly until mid April (3/13/06 - 4/12/06). Many ponds have been monitored weekly all season because of low DO or high pH. As of 2006 Chl a is no longer a requirement and is no longer collected. Data contact: Nicole Athearn.
	Metals (total and dissolved arsenic, chromium, nickel, copper, zinc, selenium, silver, cadmium, lead, and mercury)	All opened ponds (A2W, A3W, A7, A14, A16, B2C, B8A, B1, B10)	1 site per pond	near surface	Annually	9/23/04, 09/30/05	P						X	R	See Takekawa et al. (2005) p. 9, etc. for details. As of 2006 metals are no longer required by RWQCB and are not monitored. Data contact: Nicole Athearn
b) Receiving water															
1) Alviso															
	San Francisco Bay for A2W discharge permit	SF Bay (for A2W)	A2W-2, A2W-3, A2W-4a, A2W-4b, A2W-4c, A2W-4aNEW, A2W-4cNEW	surface and bottom	Weekly to Monthly	2004, 2005	B	X	X	X				R	See Receiving Water Overview
	Guadalupe Slough for A3W discharge permit	Guadalupe Slough (for A3W)	A3W-1, A3W-2, A3W-3, A3W-4, A3W-6, A3W-7, A3W-8, A3W-9	surface and bottom	Weekly to Monthly	2004, 2005, 2006	T	X	X	X				R	Guadalupe Slough sampling (for A3W) began in July 2004 one week prior to A3W initial discharge. See Receiving Water Overview for further information.
	Alviso Slough for A7 discharge permit	Alviso Slough	A7-1, A7-2, A7-3, A7-4, A7-5, A7-7, A7-8	surface and bottom	Weekly to Monthly	2004, 2005, 2006	T	X	X	X				R	Alviso Slough sampling (for A7) began in July 2004 one week prior to A7 initial discharge. See Receiving Water Overview for further information.
	Artesian Slough for A16 discharge permit	Artesian Slough	A16-2, A16-3, A16-3A, A16-3B, A16-4, A16-5, A16-6	surface and bottom	Weekly to Monthly	2005, 2006	T	X	X	X				R	See Receiving Water Overview
	Coyote Creek and San Francisco Bay for A14 discharge permit	Coyote Creek (for A14)	A14-A, A14-B, A14-C	surface and bottom	Weekly to Monthly	2005, 2006	T	X	X	X				R	See Receiving Water Overview
	Coyote Creek and San Francisco Bay for Island Ponds A19, A20, A21	Coyote Creek (for A19, A20, A21)	A19-0, A20-0, A21-0, A19-B1, A19-B2, A20-B1, A20-B2, A21-B1, A21-B2, A21-IRM, A22-IRM	surface and bottom	Weekly to Monthly	Fall 2005, Spring 2006	T	X	X	X				R	Samples were collected in Coyote Creek outside of A19, A20, A21 (IRM locations) from Sept. 2005 to March 2006, prior to breaches. Beginning March 2006 regular receiving water sampling was conducted. See Receiving Water Overview for further information.
2) Baumberg/Eden Landing															

Group:	Study Description	Location	Sampling Site Names	Sample Depth	Interval	Dates	Pond/Trib/Bay	Continuous Data	Discrete Sonde Data	DO	Chl a	Nutrients	Metals	Available/Request	Notes
	Old Alameda Creek (south channel) for B1 discharge permit	Old Alameda Creek south channel	B1-1, B1-2, B1-3, B1-4, B1-5	surface and bottom	Weekly to Monthly	Fall 2005	T	X	X	X				R	See Receiving Water Overview
	Old Alameda Creek (north channel) for B6A and B8A discharge permits	Old Alameda Creek north channel	B8A-2, B8A-3, B8A-4, B6A-6, B6A-7	surface and bottom	Weekly to Monthly	2005, 2006	T	X	X	X				R	See Receiving Water Overview
	Alameda Flood Control Channel for B2C discharge permit	Alameda Flood Control Channel (for B2C)	B2C-1, B2C-2, B2C-3, B2C-4, B2C-5, B2C-7	surface and bottom	Weekly to Monthly	2005, 2006	T	X	X	X				R	See Receiving Water Overview
	San Francisco Bay for B10 discharge permit	SF Bay and pond B10 (for B10)	B10-D2, B10-E2, B10-F2, B10-G2, B10-F2-20m N of breach, B10-F2-20m S	surface and bottom	Weekly to Monthly	May, Jun, Sept, Oct 2005	T	X	X	X				R	Pond B10 discharge water was originally sampled by a continuous meter, but after the discharge gate became inoperational in 2005, sampling was conducted weekly to monthly using a data sonde. Samples at locations D2, E2, and G2 are taken from Bay shore, and F2 is taken inside the pond. The grid number (C2, D2, etc.) specifies the approximate location in or near the pond. The grid runs 1, 2, 3 from north to south and A, B, C from west to east. Grid maps are available from Nicole Athearn.
	Newark Slough - "control slough" reconnaissance sampling	Newark Slough	NWK-1, NWK-2, NWK-3, NWK-4, NWK-5, NWK-6, NWK-7, NWK-8, NWK-9	surface and bottom	Biweekly	June 2006 present	T	X	X	X				R	Newark Slough is sampled twice per week as a "control" for the sloughs affected by pond discharges. Data contact: Nicole Athearn.
2) USGS (Miles group)															
a) Pond	Quarterly nutrient and chl a	2003-Oct 2005 A9, A10, A11, A12, A13, A14, A15, A16 Oct 2005-present added A3N, A7, A16, A17	1-4 sites per pond	near surface	Quarterly 2003-2004, Two/year 2005-present	2003 - present (2006)	P				X	X		A	USGS (Keith Miles' group) measures nutrients (NH4-N, No3-N, P soluble, P total, and S04-S) and Chl-a in ponds as follows: Ponds A9-A16 were sampled quarterly 2003-2004. As of 2005 sampling sites were changed to included A3N, A7, A9, A12, and A16. Sampling locations vary among sampling events. Sample replicates varied but generally included 3-4 locations per pond. Sampling pond coverage and date intervals are summarized in Appendix 2. Data are published in USGS reports, which are available at the http://www.southbayrestoration.org/ website. Data contact: Keith Miles
	One time sampling of chlorophyll a and nutrients in ponds	A2E, AB2, A3N, A2W, A3W, A5, A6, A7, A8, A9, A10, A11, A12, A14, A15, A16, A17, A19, A20, A21, A22, A23, B1, B10, B11, B12, B14, B1C, B2, B2C, B3C, B4, B4C, B5, B5C, B6, B6A, B6B, B6C, B7, B8, B8A, B9, R1, R2, R3, R4, R5, RS5	3 sites per pond	near surface	One time sampling	20, 21, 28 May, 10, 11, June 2004	P				X	X		R	USGS (Keith Miles' group) did a one-time measurement of nutrients (NH4-N, No3-N, P soluble, P total, and S04-S) and Chl-a in all ponds in 2003. Data contact: Keith Miles
3) SFBBO															
a) Pond	1) Cargill Dumbarton ponds	N1, N2, N3, PP1	N1-B1, N1-D8, N1-G7, N1-H3, N2-F5, N2-D6, N2-A4, N2-D2, N3-A6, N3-C8, N3-K3, N3-G1, DP1-G7, DP1-F12, DP1-C11, DP1-D8	1ft below surface	Monthly	Sept 2005-present (2006)	P	X	X	X				R	SFBBO started sampling in Sept, 2005. All sites are sampled monthly for DO, temp, and salinity using a data sonde at the surface. Discrete DO are collected for sonde calibration. From Summer 2005 though Spring 2006 discrete chl a was collected quarterly. DP1 is also known as PP1. Data contact: Cynthia Padula.
	2) Cargill Mowry Ponds	M1, M2, M3, M4, M5, M6	M1-B1, M1-C7, M1-H10, M2-A1, M2-I2, M2-H10, M3-D1, M3-G3, M3-F10, M3-B6, M4-C4, M4-H8, M5-D2, M5-A3, M5-B9, M6-H2, M6-F7, M6-B5	1ft below surface	Monthly	Sept 2005-present (2006)	P	X	X	X				R	SFBBO started sampling in Sept, 2005. All sites are sampled monthly for DO, temp, and salinity using a data sonde at the surface. Discrete DO samples are collected for sonde calibration. From Summer 2005 though Spring 2006 discrete chl a was collected quarterly. Data contact: Cynthia Padula.
	3) Cargill Coyote Hills (Newark) Ponds	N1A, N2A, N3a, N4Aa, N4Ab, N4, N4B, N5, N6, N7, N8, N9	N1A-C1, N1A-B5, N1A-C8, N2A-B2, N2A-C2, N2A-H4, N3A-C7, N4Aa-B1, N4Aa-I3, N4Aa-I6, N4Ab-B1, N4Ab-D2, N4Ab-D6, N4Ab-D8, N4-B2, N4-J2, N4-E5, N4B-A1, N4B-E4, N4B-F7, N5-A1, N5-A4, N5-G4, N6-E2, N7-A1, N7-A6, N8-A2, N8-E4, N9-E1, N9-A5, N9-A7	1ft below surface	Monthly	Sept 2005-present (2006)	P	X	X	X				R	SFBBO started sampling in Sept, 2005. All sites are sampled monthly for DO, temp, and salinity using a data sonde at the surface. Discrete DO samples are collected for sonde calibration. From Summer 2005 though Spring 2006 discrete chl a was collected quarterly. Data contact: Cynthia Padula.
4) City of San Jose															
a) Pond	Continuous monitor inside pond A18, at the discharge point	A18	A-18-D	1ft below surface	Continuous, 15 minute	Feb-Oct 2005, May-Oct 2006	P	X	X					R	In 2005, the City of San Jose purchased pond A18 from Cargill and began monitoring and reporting Pond A18 discharge, in accordance with the pond Waste Discharge Requirement Continuous monitoring is conducted via data sonde for conductivity, temperature, DO, turbidity, and pH. For details see the 2005 Annual Self-Monitoring Program Report for Pond A-18 at the City of San Jose website http://www.sanjoseca.gov/esd/pub_res.htm . Data contact: Jim Ervin

Group:	Study Description	Location	Sampling Site Names	Sample Depth	Interval	Dates	Pond/Trib/Bay	Continuous Data	Discrete Sonde Data	DO	Chl a	Nutrients	Metals	Available/Request	Notes
	Monthly Chlorophyll a monitoring	A18	A-18-D	near surface	Monthly	Feb-Oct 2005, May-Oct 2006	P				X			R	Monthly chlorophyll a samples were taken at the discharge point (A-18-D). Data contact: Jim Ervin
	b) Receiving water														
	Continuous monitoring in Artesian Slough for pond A18 discharge permit	Artesian slough (for A18)	A-A18-2	1ft below surface	Continuous, 15 minute	Feb-Oct 2005, May-Oct 2006	T	X	X					R	Continuous monitoring is conducted via data sonde for conductivity, temperature, DO, turbidity, and pH. For details see the 2005 Annual Self-Monitoring Program Report for Pond A-18 at the City of San Jose website http://www.sanjoseca.gov/esd/pub_res.htm . Data contact: Jim Ervin.
	Artesian Slough Monthly Monitoring	A18	A-A18-1, *A-A18-1.5, A-A18-2, A-A18-3, A-A18-4, *A-A18-5	surface and bottom, up to 4 depths	Monthly	Feb-Oct 2005, May-Oct 2006	T	X	X					R	Sampling was conducted on a monthly basis during the dry season (spring-fall). Data loggers were used to collect conductivity, temperature, DO, and pH at locations in Artesian Slough, from at least 2 depths, surface and bottom (up to 4 depths have been measured at some sites/occasions). Surface and bottom turbidity grab samples were taken as well. Sites with "*" were sampled in 2005 only. In 2006 site names change from "A-A18-X" to "ART-X." Data contact: Jim Ervin
	c) Other														
	Water Treatment Plant Effluent Monitoring	Artesian Slough	San Jose/Santa Clara WPCP	NA	Daily	1980-present	T		X		X			R	Daily measurements of pH, temperature, dissolved oxygen, enterococci, and turbidity are made. Effluent is sampled at the treatment plant prior to discharge to Artesian slough. Data are reported under the Self Monitoring Report for the San Jose / Santa Clara Water Pollution Control Plant, NPDES Permit No. CA0037842, Order No. R2 2003 Data Contact: Jim Ervin
					Weekly to Monthly	1980-present	T							R	BOD and TSS are measured weekly. Effluent is sampled at the treatment plant prior to discharge to Artesian slough. Data are reported as stated above. Data Contact: Jim Ervin
					Semi-annually	1980-present	T							R	Measurements of volatile organics, semivolatile organics, organochlorine pesticides, and DDEs are made twice per year. Effluent is sampled at the treatment plant prior to discharge to Artesian slough. Data are reported as stated above. Data Contact: Jim Ervin
					Continuous	1980-present	T	X						R	Flow and residual chlorine are measured continuously at the San Jose/Santa Clara WPCP. Effluent is sampled at the treatment plant prior to discharge to Artesian slough. Data are reported as stated above. Data Contact: Jim Ervin
	Regular monitoring at 12 stations for the Copper and Nickel Action Plan portion of the San Jose / Santa Clara POTW permit.	South SF Bay near Dumbarton and south to mouths of sloughs	SB01, SB02, SB03, SB04, SB05, SB06, SB07, SB08, SB09, SB10, SB11, SB12	surface and bottom	Monthly	1997-present (2006)	B	X	X		X	X		R	Surface and bottom EC, temp, DO, pH, and depth are recorded monthly at each site via handheld data sonde. Several surface water grab samples are collected at each of the 12 stations and analyzed for: Copper, nickel, TSS, DOC, PO4, NO3, NO2, NH4, selenium, conductivity. The metals are measured as total and dissolved fraction (< 0.45 micron). Year-round monthly data exist for 12 stations 1997-2005. Beginning in Winter 2005 sampling was reduced to 7 stations for the wet season (Dec-April). Sampling at all 12 stations for the dry season resumed in May 2006. Data are reported in the Acute and Chronic Nickel Toxicity Report, on the City of San Jose website. Data contact: Jim Ervin
	Continuous data loggers in sloughs during various time periods from 1997-2000	Various	Various	1ft below surface	Continuous, 15 minute	Various	T	X	X					R	Historically, the City of San Jose has deployed continuous data loggers in sloughs during various time periods from 1997-2000 to collect temperature, salinity, DO, pH, and depth. These samples are in addition to those listed above. There is no plan to continue this sampling. Data Contact: Jim Ervin
	5) USGS, Cloern group														
	a) Bay	Water Quality of San Francisco Bay Long-Term	Southern San Francisco Bay	29, 29.5, 30, 31, 32, 33, 34, 35, 36	1.5 ft below surface and vertical CTD casts	Monthly to weekly	1969 - present	B	X	X	X	X	X	A	USGS (Jim Cloern's group) monitors water quality at fixed stations along the central deep channel of San Francisco Bay Estuary. Sampling is conducted weekly to monthly. For the purpose of salt pond data, only the 9 stations south of the San Mateo bridge are referenced here. At each station, vertical profiles of salinity, temperature, TSS, DO, light penetration, and chl a fluorescence are obtained by CTD. At a subset of stations, discrete water samples are collected for calibration of sensors: TSS, chl a, and phaeophytin from 1.5m and bottom, and DO from surface only. Discrete dissolved nutrients (NH4, NO3, NO2, PO4, and SiO2) and phytoplankton composition are determined at a subset of stations. Throughout the cruises, there is continuous measurement of surface (1.5m) chl a fluorescence, salinity, temperature, and turbidity. See the website for details and to download data (CTD and calibration discrettes) http://sfbay.wr.usgs.gov/access/wqdata/ . Data contact: Tara Schraga
	6) SFEI RMP														
	a) Bay	1993-2001 Status & Trends Monitoring Data	Southern San Francisco Bay	BW10, BW15, C-1-3, C-3-0, BA10, BA20, BA30, BA40, BB15, BB30, BB70	1 m below the surface	2 to 3 times per year	1993-2001	B	X	X	X	X	X	A	RMP sampled at fixed locations. During 1993-1999 there were three annual sampling events (winter, spring and fall). In 2000 and 2001 there were 2 annual sampling events (winter and summer). Parameters measured: chl a, conductivity, DO, DOC, hardness, pH, phaeophytin, salinity, SSC, temperature, and TSS, NH4, NO3, NO2, PO4, SiO2, PAHs, PCBs, pesticides, PBDEs, phthalates, and some other compounds. Sampling methods: http://www.sfei.org/rmp/documentation/fom/FOM2001.pdf . Program details and downloadable data are available at www.sfei.org/rmp/ . Data contact: Cristina Grosso
		2002-2005 Status & Trends Monitoring Data	Southern San Francisco Bay	2002:C-1-3, C-3-0, LSB001W-LSB006W, SB001W-SB010W, CB002W 2003:LSB007W-LSB011W, BA30, SB011W-SB019W, CB006W, CB008W 2004:LSB012W-LSB016W, BA30, SB020W-SB028W, CB010W 2005:LSB017W-LSB021W, BA30, SB029W-SB037W, CB014W, CB016W	1 m below the surface	Once per year	2002, 2003, 2004, 2005	B	X	X	X	X	X	A	In 2002-present SFEI RMP used a probabilistic sampling design for their monitoring program. Details on the Regional Monitoring Program's Re-design process for the Status and Trends program are available on the web at: www.sfei.org/rmp/Technical_Reports RMP_2002_No109_RedesignProcess.pdf . Sites are grouped by region and different locations in each region are sampled each year, with a 5-step rotating panel design. Parameters measured are generally the same as 1993-1999 except, SSC is used instead of TSS, hardness analyses are discontinued, and several contaminants (MeHg, Cr, Co, PBDEs, phthalates, etc.) are not available for every year. Downloadable data are available at www.sfei.org/rmp/ . Data contact: Cristina Grosso
		Ancillary CTD data from Status & Trends Monitoring	Southern San Francisco Bay	locations listed above	Various	1-3 times per year	1993-2005	B	X	X				R	The CTD data are taken during Status and Trends Monitoring events. CTD data are considered ancillary and are not generally reported. Data are stored in a relational database, and are available upon request from Cristina Grosso.

Group:	Study Description	Location	Sampling Site Names	Sample Depth	Interval	Dates	Pond/Trib/Bay	Continuous Data	Discrete Sonde Data	DO	Chl a	Nutrients	Metals	Available/Request	Notes
7) City of Palo Alto															
	Water Treatment Plant Effluent Monitoring	Southern San Francisco Bay	Palo Alto RWQCP	NA	Daily	1994-present	B	X	X					R	Daily measurements of pH, temperature, dissolved oxygen, enterococci, and turbidity are made. Effluent is sampled at the treatment plant prior to discharge to an unnamed slough that discharges to the Bay. Data are reported to the Regional Water Board. Data Contact: Brad Eggleston
					Weekly to Monthly	1994-present	B				X	X		R	BOD and suspended solids are measured weekly at the Palo Alto RWQCP. Ammonia, acute and chronic toxicity, cyanide, and metals are measured monthly. Data are reported to the Regional Water Board. Data Contact: Brad Eggleston
					Semi-annually	1994-present	B							R	Measurements of volatile organics, semivolatile organics, organochlorine pesticides, organophosphorus pesticides, PCBs, polyaromatic hydrocarbons, dioxins, and tributyltin are made. Data are reported to the Regional Water Board. Data Contact: Brad Eggleston
	Long-Term Monitoring and Assessment Plan (LTMAP) in Palo Alto Creeks	San Francisquito Creek (SFC), Los Trancos Creek (LTC), Bear Creek (BC)	SFC at Newell Road; SFC at Piers Lane; LTC at Piers Lane; BC at Sand Hill Road		5-6 rainfall events each water year	Fall 2001-2006	T	X	X	X	X	X	X	A	Water samples are analyzed for metals (including low level Hg, diss Hg, and methyl Hg), nutrients, pesticides, suspended solids, and dioxins. Continuous monitoring for dissolved oxygen, temperature, conductivity, and pH occurs at Piers Lane stations. Monitoring occurs at three stations since 2002; Bear Creek station was added in fall 2003 and will occur through water years 2006. For further information and available data see http://www.cityofpaloalto.org/cleanbay/creeks/ . Data contact: Brad Eggleston.
	Volunteer Monitoring in Palo Alto Creeks	Palo Alto Flood Control Basin	21 sites on Adobe Barron and Matadero Creeks		Semi-monthly	April 2003-present	T		X	X				R	21 sites are sampled bi-monthly in the Palo Alto Flood Control Basin. The volunteers use data sondes to take measurements of temperature, conductivity, dissolved oxygen, and pH. For further information and available data see http://www.cityofpaloalto.org/cleanbay/creeks/ . Data contact: Brad Eggleston
8) City of Sunnyvale															
	Water Treatment Plant Effluent Monitoring	Guadalupe Slough	Sunnyvale WPCP	various	various	1970's-present	T				X	X		R	Water Pollution Control Plant flow data is available directly from our consultant, EOA, Inc. (who is also the program manager for SCVURPPP). Contact Adam Olivieri at 510-832-2852 for specific reports. Sunnyvale doesn't conduct water quality sampling outside of their plant and effluent discharges. All the environmental studies are contracted cooperatively through SCVURPPP (www.scvurppp.org) or through work with other south bay dischargers (San Jose and Palo Alto). For information regarding City of Sunnyvale monitoring activities contact: Kristy McCumby Hyland. For City of Sunnyvale effluent data contact: Adam Olivieri
9) Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP)															The SCVURPPP is an association of thirteen cities and towns in the Santa Clara Valley, Santa Clara County and the Santa Clara Valley Water District. Program participants share a common permit to discharge storm water to South San Francisco Bay.
	SCVURPPP Multi-Year Receiving Waters Monitoring Plan	Calabazas, Coyote, Lower Penitencia, Matadero/Barron, Adobe, San Tomas, Sunnyvale West, Sunnyvale East, Stevens, and Permanente watersheds	2002-3: Coyote Cr. and Lower Penitencia Cr. Watersheds 2003-5: Adobe Cr. and San Tomas Cr. Watersheds 2004-6: Calabazas Cr., Matadero Cr., Barron Cr., Sunnyvale East and West Channels Watersheds 2005-6: Stevens and Permanente Cr. Watersheds 2006-7: Coyote Cr.mainstem	Various	Twice annually	2002-2007	T	X	X		X	X		R	Water samples are typically collected twice annually (dry and wet season). Measurements include DO, temperature, pH, conductivity and velocity. Analysis for nutrients and anions, total and dissolved metals, SSC, OP pesticides, bacterial concentrations and acute and chronic toxicity and some aquatic bioassessments using benthic macroinvertebrates and fish have also been done. In FY 06-07, sediment samples will be collected and analyzed for metals, PCBs, PBDEs, pyrethroid pesticides and acute and chronic toxicity. Bioassessment samples are collected once annually. Detailed information in the Inventory of Santa Clara Basin Stream Studies, Updated Report Version 7.0 (http://www.scvurppp-2k.com/pdfs/0506/SSI_2006_70_Final_Report.pdf). Data contact: Chris Sommers
	Guadalupe Slough TMDL project	Guadalupe Creek, Guadalupe Reservoir, Arroyo Calero, Calero Reservoir; Alamos Creek, Almaden Reservoir	Guadalupe Creek: Below Guadalupe Reservoir and in Reservoir; Arroyo Calero: Near mouth of creek and in Calero Reservoir; and Alamos Creek: Near mouth of creek and in Almaden Reservoir	Various	Various	2004-2006	T	X	X			X		R	The TMDL project quantifies mercury sources and loading, develops additional information on the processes that control mercury fate, transport and bioavailability, and provides linkages between mercury loads and water body impairment. The sampling plan includes wet season (mid-February to late April) water and sediment samples, fish samples from creeks, reservoirs and the River, and dry season (May - August) total and methylmercury measurements in epilimnion and hypolimnion of Almaden and Guadalupe Reservoirs and at the outlets. Water quality (ph, temp, conductivity, DO and turbidity) are monitored at Almaden Lake at various depths on a weekly basis to determine effect of water circulation (Solar Bee) on methylmercury production. Total and methylmercury were measured in water column at 55 watershed locations and sediment from 9 locations, and measurements were made in three reservoirs. For further information see Inventory of Santa Clara Basin Stream Studies, Updated Report Version 7.0 (http://www.scvurppp-w2k.com/pdfs/0506/SSI_2006_70_Final_Report.pdf). Data contact: Carrie Austin.

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Appendix 1. Pond sampling locations for USGS (Takekawa group) monthly discrete water quality

A1-B4, A1-D4, A1-H1, A20-A1, A21-A5, A22-F1, A23-D1, A2E-D1, A2E-F4, A2E-H7, A2W-A6, A2W-H1, A2W-H6, A3N-B1, A3N-D1, A3N-E3, A3W-A3, A3W-E2, A3W-E9, V-H1, A5-A6, A5-G15, A5-K15, A6-D2, A6-G6, A7-A1, A7-D9, A7-G9, A8-A1, A8-H1, A8-H8, A9-A7, A9-B1, A9-D2, AB1-A6, AB1-B2, AB1-D1, AB2-A2, AB2-D3, AB2-1, A10-A2, A10-D1, A10-F7, A11-E1, A11-F3, A11-F4, A12-B1, A12-C5, A12-F2, A12-G5, A13-A2, A13-D6, A13-G5, A14-A1, A14-B3, A14-D6, A15-B1, A15-D4, 38, A16-A2, A16-C3, A16-F1, A16-F7, A17-A4, A17-C1, A17-E3, A19-A6, B1C-D4, B1C-E1, B2-A3, B2C-A1, B2C-A3, B2-E9, B2-H4, B3C-A5, B3C-C1, E1, B4-E4, B5-B8, B5-C6, B5C-C3, B5C-C6, B5-D3, B6-A4, B6A-A3, B6A-E1, B6B-A1, B6B-A6, B6B-E4, B6-C2, B6C-A4, B6C-B1, B6-D8, B7-1, B8A-E8, B8-D3, B8-I1, B8-I7, B9-A1, B9-A4, B9-E1, B9-E8, BI-A1, BI-A8, BI-C1, B10-E4, B10-E6, B10-F2, B11-E1, B11-E3, B12-A1, B14-B1, B14-C1, NCM-F1, NCM-F7, R1-B8, R1-D1, R1-F8, R1-H3, R2-A6, R2-C1, R2-D4, R3-A6, R3-B10, R3-D1, R3-E7, R4-B1, S5-A1, RS5-B1, RSF2-A6, RSF2-C5, RSF2-F2, RSF2-H2

Appendix 2. Chlorophyll and Nutrients Sampling by USGS (Miles group) in Select Ponds

Chl-a AND Nutrient data tables

x = chl and nutrient data, **chl only** means chlorophyll data only, in Nov 2005 we switched to 5 south bay ponds, A3N, A7, A9, A12, and A16.

Date	Pond										
	A3N	A7	A9	A10	A11	A12	A13	A14	A15	A16	A17
9/11/02			x	x	x	x		x		chl only	
10/15/02			x	x	chl only	chl only		chl only	chl only	chl only	
11/21/02			x	x	x	x		x	x	x	
1/30/03			x	x	x	x		x	x		
4/9/03			chl only	chl only	chl only	chl only		chl only	chl only	chl only	
5/21/03		x	x	x	x	x		x	x	x	
7/23/03			x	x	x	x	x	x	x	x	
8/28/03			x	x	x	x		x	x	x	
9/17/03			x	x	x	x		x	x	x	
10/8/03			x	x	x	x		x	x	x	
11/18/03			x	x	x	x		x	x	x	
12/17/03			x	x	x	chl only		x	x	x	
1/22/04			x	x	x	x	x	x		x	x
4/1/04			x	x	x	x	x	x		x	x
5/25/04			x	x	x	x	x	x		x	x
7/1/04			x	x	x	x	x	x			
7/7/04										x	x
9/13/04			x	x	x	x	x	x		x	x
1/19/05			x	x	x	x	x	x		x	x
11/2/05	x	x	x			x				x	
5/22/06	x	x	x	x	x	x	x	x	x	x	x