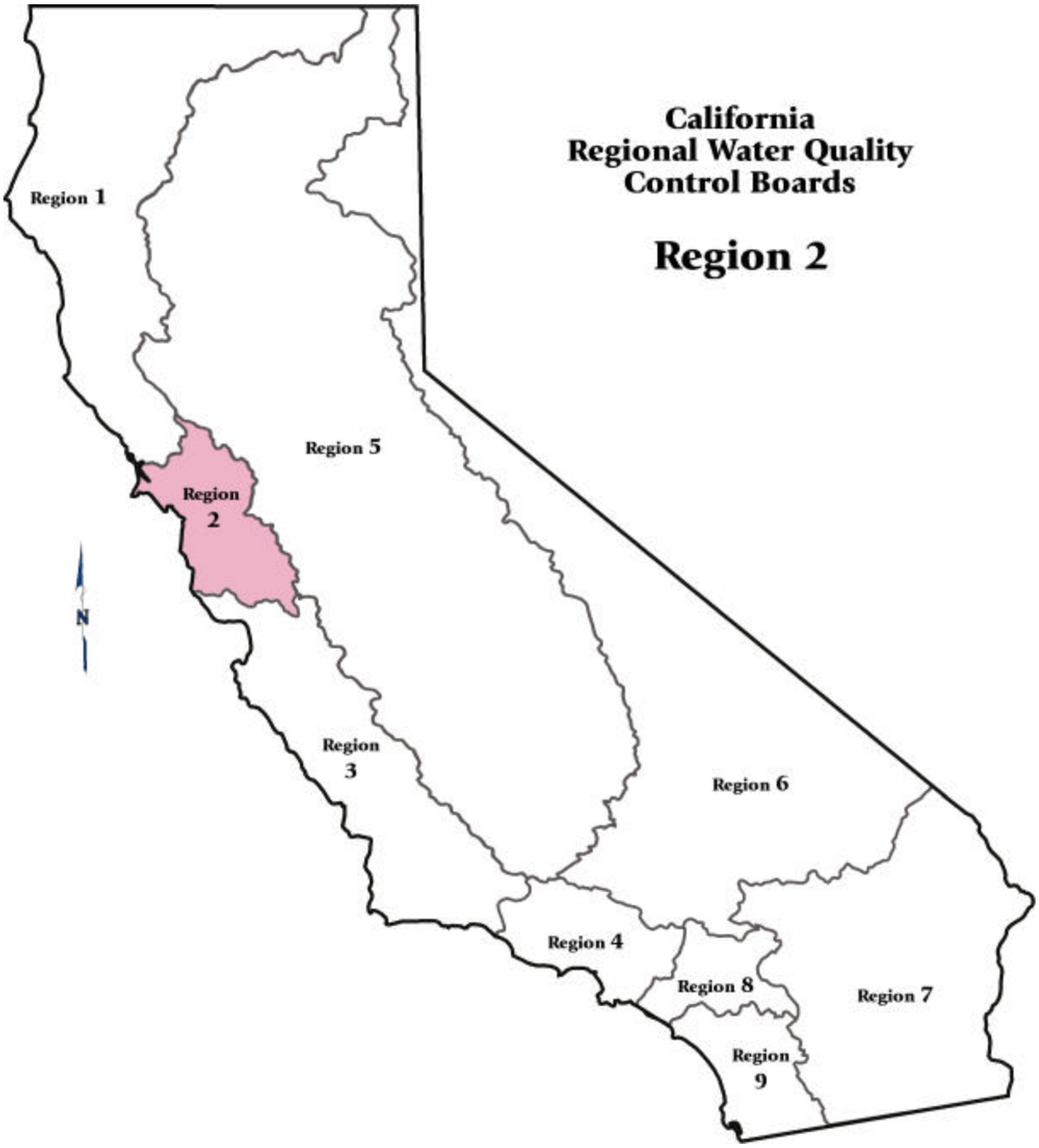
Fact Sheets Supporting
“Do Not List” Recommendations



September 2005

Region 2

Water Segment:	Butano Creek
Pollutant:	Oxygen, Dissolved
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. None of the samples exceed the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. None of 3 samples exceeded the dissolved oxygen water quality objective and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	SP - Fish Spawning
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Waters designated as (SFBRWQCB, 1995): Cold water habitat ..... 7.0 mg/l minimum Warm water habitat ..... 5.0 mg/l minimum
Data Used to Assess Water Quality:	Three readings: 9.36, 7.85, 8.87 (mg/l). Average = 8.69 mg/l (Environmental Science Associates, 2004).

Spatial Representation:	Three sites along Creek.
Temporal Representation:	ESA (Environmental Science Associates) survey made in summer (August 21 to September 24, 2003).
Data Quality Assessment:	California Stream Bioassessment Protocols (CDFG, 1999) used.

Region 2

Water Segment:	Butano Creek
Pollutant:	Turbidity
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. Two of the samples exceed the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. Zero of 3 samples exceeded the basin plan water quality objective and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU). The suspended sediment load and suspended sediment discharge rate of surface waters shall not cause nuisance or adversely affect beneficial uses (SFBRWQCB, 1999).
Evaluation Guideline:	Turbidity can be used to estimate the effects of sedimentation. Published sedimentation thresholds can be used. The evaluation guideline that has been selected to determine turbidity exceedance is from published-peer reviewed

	paper, "The Effects of Chronic Turbidity on Density and Growth of Steelheads and Coho Salmon" (Sigler, et.al.,1984). The guideline is as follows "In our studies, as little as 25 NTUs of turbidity caused a reduction in fish growth." (NTU is nephelometric turbidity units). Sigler also discusses the result of turbidities in the 25-50 NTU range reduced growth and caused more newly emerged salmonids to emigrate from laboratory streams than did clear water. Studies indicate that juvenile coho salmon avoided water with turbidities that exceeded 70 NTU (Bilson and Bilby, 1982). Other research reported that feeding and territorial behavior of juvenile coho salmon were disrupted by short-term exposures (2.5-4.5 days) to turbid water with up to 60 NTU (Meehan, 1991).
Data Used to Assess Water Quality:	Zero of 3 samples exceeded the standard (Environmental Science Associates, 2004).
Spatial Representation:	Three sample sites along Creek.
Temporal Representation:	ESA (Environmental Science Associates) survey made in summer (August 21 to September 24, 2003).
Data Quality Assessment:	California Stream Bioassessment Protocols (CDFG 1999) (for supplemental information) used.

Region 2

Water Segment: Butano Creek

Pollutant: pH

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess this pollutant. One sample exceeds the water quality objective.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:
1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. One of 3 samples exceeded the pH water quality objective and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan Objective: The pH shall not be depressed below 6.5 nor raised above 8.5. This encompasses the pH range usually found in waters within the basin. Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels.
Data Used to Assess Water Quality:	Three data values: 8.6, 7.6, 8.2. Average = 8.1.(Environmental Science Associates, 2004).
Spatial Representation:	Three sample sites along Creek.
Temporal Representation:	ESA (Environmental Science Associates) survey made in summer (August 21 to

	September 24, 2003).
Data Quality Assessment:	California Stream Bioassessment Protocols (CDFG, 1999); (for supplemental information) used.

Region 2

Water Segment:	Pescadero Creek
Pollutant:	Oxygen, Dissolved
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. None of the samples exceed the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. None of 8 samples exceeded the dissolved oxygen water quality objective and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 3. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: For nontidal waters, the following objectives shall apply (SFBRWQCB, 1995): Waters designated as: Cold water habitat. . . . . .7.0 mg/l minimum Warm water habitat. . . . . .5.0 mg/l minimum
Data Used to Assess Water Quality:	None of the 8 data values exceed the water quality objective. Smallest = 7.69, largest 9.32 (mg/l). Average = 8.61 (mg/l) (Environmental Science Associates, 2003).
Spatial Representation:	Eight sample sites along the Creek and its immediate tributaries.

Temporal Representation:	ESA (Environmental Science Associates) survey made in summer, August 21 to September 24, 2003.
Data Quality Assessment:	Methodology discussed in ESA 2004 report.

Region 2

Water Segment:	Pescadero Creek
Pollutant:	Turbidity
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. One sample exceeds the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. One of 8 samples exceeded the secondary MCL and this does not exceed the allowable frequency listed in Table 3.1 of the Listing Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic, WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU (SFBRWQCB, 1995).
Evaluation Guideline:	The WQOs address conditions both in the water column (sediment and turbidity narratives). Published sedimentation thresholds can be used as appropriate interpretive evaluation guidelines. The evaluation guideline used to determine turbidity exceedance is from published-peer reviewed paper, "The Effects of

	Chronic Turbidity on Density and Growth of Steelheads and Coho Salmon", John W Sigler, et.al.1984. The guideline is as follows "In our studies, as little as 25 NTUs of turbidity caused a reduction in fish growth." (NTU is nephelometric turbidity units). Sigler also discusses the result of turbidities in the 25-50 NTU range reduced growth and caused more newly emerged salmonids to emigrate from laboratory streams than did clear water (Sigler et al. 1984). Bisson and Bilby (1982) reported that juvenile coho salmon avoided water with turbidities that exceeded 70 NTU. Berg and Northcote (1985, as cited in Meehan 1991) reported that feeding and territorial behavior of juvenile coho salmon were disrupted by short-term exposures (2.5-4.5 days) to turbid water with up to 60 NTU.
Data Used to Assess Water Quality:	One of 8 data values exceed the secondary MCL for turbidity. Smallest = 1.24, largest = 5.28 (NTU). Average = 2.74 (NTU). Comparison to the "changes in turbidity" objective cannot be made because background information is not available. None of the measurements exceed the 25 NTU evaluation guideline (Environmental Science Associates, 2004).
Spatial Representation:	Eight sample sites along the Creek and its immediate tributaries (14 total Pescadero and Butano SWAMP program sites were used.)
Temporal Representation:	ESA (Environmental Science Associates) survey made in summer, August 21 to September 24, 2003.
Data Quality Assessment:	Methodology discussed in ESA 2004 report.

Line of Evidence	Narrative Description Data
Beneficial Use	CO - Cold Freshwater Habitat, MU - Municipal & Domestic, WA - Warm Freshwater Habitat
Information Used to Assess Water Quality:	1. Analysis of the flood record on Pescadero Creek (1951 through 2001). 2. Analysis of changes in streambed elevation at the gauging station (1951 through 2001).
Non-Numeric Objective:	Basin Plan: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses (SFBRWQCB, 1995). Turbidity Objective: "Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU."
Data Used to Assess Water Quality:	Graphs of "Maximum Annual Flood Peaks Greater than Bankfull as a Ratio to the Mean Annual Flood" and "Maximum Annual Flood Peaks Greater than Bankfull as a Ratio to the Mean Annual Flood" appear to show that flooding continues to be periodic and occasional (e.g., Pages 4-5, 4-6). Sediment Source Investigation (e.g., Analysis of aerial photos). "Erosional features associated with land management account for by far the greatest sediment delivery volumes from the watershed." (Page 6-48). "The sandstone and mixed lithology HGUs that underlie much of the forested area of the watershed may continue to produce relatively large quantities of sediment for some time." (Page 6-49).

	"While erosion and sediment delivery resulting from past management will likely continue for some time, there should be an overall decrease in sediment delivery to stream channels as land use practices continue to improve and as degraded lands recover both naturally and through proactive treatments." (Pages 6-49, 6-50).
Spatial Representation:	Single USGS gauging station, "Pescadero Creek," located at a bridge on Pescadero Road, 3.0 miles east of the town of Pescadero and 5.3 miles upstream of the mouth of Pescadero Creek.
Temporal Representation:	Series of annual maximum instantaneous flood peaks (annual flood series) for the 1952 through the 2001 water years.

Region 2

Water Segment:	Pescadero Creek
Pollutant:	pH
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. One sample exceeds the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. One of 8 samples exceeded the pH water quality objective and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, WI - Wildlife Habitat
Matrix:	-N/A
Water Quality Objective/ Water Quality Criterion:	Basin Plan: The pH shall not be depressed below 6.5 nor raised above 8.5. This encompasses the pH range usually found in waters within the basin. Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels (SFBRWQC, 1995).
Data Used to Assess Water Quality:	One of 8 data values exceed the water quality objective (Environmental Science Associates, 2004).

Spatial Representation:	Eight sample sites along the Creek and its immediate tributaries (14 total Pescadero and Butano SWAMP program sites were used.) (ESA, 2004).
Temporal Representation:	ESA (Environmental Science Associates) survey made in summer, August 21 to September 24, 2003.
Data Quality Assessment:	Methodology discussed in ESA 2004 report.

Region 2

Water Segment:	Peyton Slough
Pollutant:	Cadmium
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is likely to cause of contribute to the toxic effect. The benthic community is transitional and may not be impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard. The cleanup has progressed and the polluted sediments have been capped. The pre-cleanup conditions do not exist in 2005. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category. This conclusion is based on the staff findings that: 1. The sediment quality guideline used complies, with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Using pre-cleanup data, three of 6 samples exceeded the sediment guideline, 4 of 5 samples exhibit toxicity, and these exceed the allowable frequency listed in Table 3.1 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) list because applicable water quality standards are exceeded and another program is addressing the problem.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/	All waters shall be maintained free of toxic substances in concentrations that are

Water Quality Criterion:	lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	A PEL of 4.21 ug/g was used (MacDonald et al., 1996).
Data Used to Assess Water Quality:	Three of 6 samples exceeding ERM (Hunt et al., 1998b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index

	value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment:	Peyton Slough
Pollutant:	Chlordane
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is likely to cause of contribute to the toxic effect. The benthic community is transitional and may not be impacted by this pollutant. The RWQCB has adopted a cleanup order that has resulted in attainment of the water quality standard. The cleanup has progressed and the polluted sediments have been capped. The pre-cleanup conditions do not exist in 2005. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category. This conclusion is based on the staff findings that: 1. The sediment quality guideline used complies, with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Using pre-cleanup data, two of 6 samples exceeded the guideline and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) list because applicable water quality standards are not exceeded and another program is addressing the problem.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/	All waters shall be maintained free of toxic substances in concentrations that are

Water Quality Criterion:	lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	ERM of 6 ng/g used (Long and Morgan, 1990).
Data Used to Assess Water Quality:	Two of 6 samples exceeded ERM (Hunt et al., 1998-b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected, from 5/95-4/97.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al.,1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index

	value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment:	Peyton Slough
Pollutant:	Copper
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is likely to cause or contribute to the toxic effect. The benthic community is transitional and may not be impacted by this pollutant. The RWQCB has adopted a cleanup order that has resulted in attainment of the water quality standard. The cleanup has progressed and the polluted sediments have been capped. The pre-cleanup conditions do not exist in 2005. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category. This conclusion is based on the staff findings that: 1. The sediment quality guideline used complies, with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Using pre-cleanup data, four of 6 samples exceeded the sediment guideline, 4 of 5 samples exhibit toxicity, and these exceed the allowable frequency listed in Table 3.1 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) list because applicable water quality standards are exceeded and another program is addressing the problem.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/	All waters shall be maintained free of toxic substances in concentrations that are

Water Quality Criterion:	lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	ERM of 270 ug/g was used (Long et al., 1995).
Data Used to Assess Water Quality:	Four of 6 samples exceeded ERM (Hunt et al., 1998-b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index

	value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment:	Peyton Slough
Pollutant:	Polychlorinated biphenyls
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is likely to cause or contribute to the toxic effect. The benthic community is transitional and is probably not impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category. This conclusion is based on the staff findings that: 1. The sediment quality guideline used complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. None of 6 samples exceeded the sediment guideline and these do not exceed the allowable frequency listed in Table 3.1 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/	All waters shall be maintained free of toxic substances in concentrations that are

Water Quality Criterion:	lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Sediment guideline of 400 ng/g used (MacDonald et al., 2000).
Data Used to Assess Water Quality:	None of the 6 samples exceeded the guideline (Hunt et al, 1998-b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 5/95-4/97.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1995). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index

	value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment: Peyton Slough

Pollutant: Pyrene

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status.

Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is not likely to cause of contribute to the toxic effect. The benthic community is transitional and is probably not be impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category.

This conclusion is based on the staff findings that:
1. No sediment quality guideline is available that complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because it cannot be determined if the applicable water quality standards are exceeded.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Sediment

Beneficial Use: ES - Estuarine Habitat

Matrix: Sediment

Water Quality Objective/ Water Quality Criterion: All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).

Evaluation Guideline: No applicable sediment guideline available.

Data Used to Assess Water Quality:	Six measurements. Total PAH concentrations ranged from 469 ng/g to 9,251 ng/g (Hunt et al., 1998b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected, from 5/95-4/97.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).

Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment:	Peyton Slough
Pollutant:	Selenium
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is not likely to cause or contribute to the toxic effect. The benthic community is transitional and is probably not be impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category. This conclusion is based on the staff findings that: 1. No sediment quality guideline is available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	No ERM for sediment chemistry available.
Data Used to Assess Water	Four measurements ranging from 0.536 to 2.27 ug/g (Hunt et al., 1998b).

Quality:	
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).

Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment:	Peyton Slough
Pollutant:	Silver
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is likely to cause or contribute to the toxic effect. The benthic community is transitional and may not be impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard. The cleanup has progressed and the polluted sediments have been capped. The pre-cleanup conditions do not exist in 2005. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category. This conclusion is based on the staff findings that: 1. The sediment quality guideline used complies, with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Using pre-cleanup data, two of 6 samples exceeded the sediment guideline, 4 of 5 samples exhibit toxicity, and these exceed the allowable frequency listed in Table 3.1 of the Listing Policy. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) list because applicable water quality standards are exceeded and another program is addressing the problem.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/	All waters shall be maintained free of toxic substances in concentrations that are

Water Quality Criterion:	lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	ERM of 410 ug/g was used (Long et al., 1995).
Data Used to Assess Water Quality:	Two of 6 samples exceeded (Hunt et al., 1998-b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al, 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index

	value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment: Peyton Slough

Pollutant: Zinc

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status.

Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is likely to cause or contribute to the toxic effect. The benthic community is transitional and may not be impacted by this pollutant. The RWQCB has adopted a cleanup order that has resulted in attainment of the water quality standard. The cleanup has progressed and the polluted sediments have been capped. The pre-cleanup conditions do not exist in 2005.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category.

This conclusion is based on the staff findings that:
1. The sediment quality guideline used complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. Using pre-cleanup data, five of 6 samples exceeded the sediment guideline, 4 of 5 samples exhibit toxicity, and these exceed the allowable frequency listed in Table 3.1 of the Listing Policy.
5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) list because applicable water quality standards are not exceeded and another program is addressing the problem.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Sediment

Beneficial Use: ES - Estuarine Habitat

Matrix: Sediment

Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB et al., 1995).
Evaluation Guideline:	ERM of 410 ug/g used (Long et al., 1995).
Data Used to Assess Water Quality:	Five of 6 samples exceeded ERM (Hunt et al, 1998-b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 5/95-4/97.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean

	species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment: Peyton Slough

Pollutant: ppDDE

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status.

Six lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and the pollutant is not likely to cause or contribute to the toxic effect. The benthic community is transitional and is probably not impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard.

Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category.

This conclusion is based on the staff findings that:
1. No sediment quality guideline is available that complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because it cannot be determined if the applicable water quality standards are exceeded.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Sediment

Beneficial Use: ES - Estuarine Habitat

Matrix: Sediment

Water Quality Objective/ Water Quality Criterion: All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1994).

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Evaluation Guideline: No acceptable sediment guideline available.

Data Used to Assess Water Quality:	Six measurements. Measurement concentration ranged from 3.5 ng/g to 95.7 ng/g (Hunt et al., 1998-b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 5/95-4/97.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1995). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBQWQCB, 1995).
Evaluation Guideline:	BPTCP Reference envelope approach used (SWRCB, 1997).
Data Used to Assess Water Quality:	Significant amphipod toxicity in 4 of 5 samples (80%), significant urchin toxicity, 4of 5 samples (80%); (Hunt et al., 1998-b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	ES - Estuarine Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms (SFBRWQCB, 1995).
Evaluation Guideline:	Evaluations of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.36, 0.51, 0.34 (3 benthic gradient samples). Samples were compared to reference. These sites were considered to be transitional aquatic communities (Hunt et al., 1998-b).

Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected, from May 1995 - April 1997.
Data Quality Assessment:	Used BPTCP QA/QC (Stephenson et al., 1994). Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	Peyton Slough is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through a Cleanup and Abatement Order. San Francisco Bay RWQCB Order No. 01-094 provides direction for the remediation of the identified problems in Peyton Slough. The Order establishes requirements for a remedial design report and implementation schedule, documentation of the remediation of Peyton Slough, and five-year status report on the effectiveness of the implementation of the approved cleanup plan. The order is being implemented. The first phase of the remediation has been completed. The slough channel has been realigned to a new channel east of the old alignment. The new channel is located in relatively uncontaminated wetland habitat. In 2005, an engineered cap is being placed over the old channel. This will contain the sediments in place so they are no longer exposed to the environment.

Region 2

Water Segment:	San Francisco Bay, Central
Pollutant:	Polybrominated Diphenyl Ethers (PBDEs)
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.1 and 3.5 of the Listing Policy. Under section 3.5 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.5, some data are available showing concentrations of this pollutant in animal tissues. It cannot be determined if the pollutant is likely to cause or contribute to the adverse effects because a numeric guideline or water quality objective is not available. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. An evaluation guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because it cannot be determined if applicable water quality standards are exceeded.
Lines of Evidence:	

Line of Evidence	Pollutant-Tissue
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	2004 List Comments: Numeric information, along with circumstantial, anecdotal, and non-specific referenced evidence, was submitted in 2004 with the request that the San Francisco Bay (presumably San Pablo Bay; San Francisco Bay, Central; San Francisco Bay, South; San Francisco Bay, Lower; and/or Suisun Bay) be listed for the PBDE family of flame retardant chemicals. Studies based on findings from other states and other countries (Sweden) cannot, by themselves, provide sufficient evidence to list a pollutant for a California water body. Instead, this data provides background information only. Data on contamination by PBDEs of human (breast) tissue from residents in and

	around the Bay is not usable for listing those water bodies due to the fact that there is no way to meaningfully link such contamination directly to water quality and to a particular water body. The presence of PBDEs in eggs and seal tissues is also inadequate to list a water body. The report does not specify where bird's nests and seal carcasses were sampled in relation to the five Bay area water bodies. Even if specific sample sites were included, it would be difficult to determine the relationship between the presence of PBDEs in the tissues of a widely ranging species, and the water of a specific water body. It is easier to establish this link when the tissues of filter-feeding organisms (e.g., mussels and clams) or organisms that forage locally are exclusively used. While some data presented was from local fish species, the volume and reliability of the data is questionable. Leopard shark, halibut, striped bass, and other species may move considerable distances before being captured, making it difficult to establish a relationship between pollutants in tissue and the water body of capture. The 'tainted catch' report states: 'PBDE levels varied widely among fish species and between individuals of the same species in part due to location in the Bay.'
Non-Numeric Objective:	Basin Plan Narrative Objectives: "Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." "Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life."
Evaluation Guideline:	None available.
Spatial Representation:	Unknown.
Temporal Representation:	Multiple studies are cited (She et al., 2002). PBDEs in the San Francisco Bay Area: measurements in harbor seal blubber and human breast adipose tissue. Chemosphere 46(2002): 697-707; Petreas et al., 2003. High Body Burdens of 2,2',4,4'-Tetrabromodiphenyl Ether (BDE-47) in California Women. Environ. Heath Perspect. 111(9): 1175-1179; She et al., 2003. High PBDE Levels in Shorebird Eggs from the San Francisco Bay and Washington State. Proceedings. 2003 Georgia Basin/Puget Sound Research Conference.

Line of Evidence	Pollutant-Tissue
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	2002 List Fact Sheet Information: PBDEs research literature will be reviewed by the RWQCB to ascertain any new information on actual effects thresholds for these persistent bioaccumulative substances in the next listing cycle. These actions can be conducted regionally through the RMP, the Bay Area Pollution Prevention Group, or other association of dischargers. During the subsequent listing cycle, RWQCB staff evaluation of current research, applicable water quality criteria, and local actions to

	characterize sources and pollution prevention of PBDEs will determine whether a listing is needed.
Non-Numeric Objective:	Basin Plan Narrative Objectives: "Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." "Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life."

Region 2

Water Segment:	San Francisco Bay, Lower
Pollutant:	Polybrominated Diphenyl Ethers (PBDEs)
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.1 and 3.5 of the Listing Policy. Under section 3.5 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.5, some data are available showing concentrations of this pollutant in animal tissues. It cannot be determined if the pollutant is likely to cause or contribute to the adverse effects because a numeric guideline or water quality objective is not available. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. An evaluation guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because it cannot be determined if applicable water quality standards are exceeded.
Lines of Evidence:	

Line of Evidence	Pollutant-Tissue
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	2004 List Comments: Numeric information, along with circumstantial, anecdotal, and non-specific referenced evidence, was submitted in 2004 with the request that the San Francisco Bay (presumably San Pablo Bay; San Francisco Bay, Central; San Francisco Bay, South; San Francisco Bay, Lower; and/or Suisun Bay) be listed for the PBDE family of flame retardant chemicals. Studies based on findings from other states and other countries (Sweden) cannot, by themselves, provide sufficient evidence to list a pollutant for a California water body. Instead, this data provides background information only. Data on contamination by PBDEs of human (breast) tissue from residents in and

around the Bay is not usable for listing those water bodies due to the fact that there is no way to meaningfully link such contamination directly to water quality and to a particular water body. The presence of PBDEs in eggs and seal tissues is also inadequate to list a water body.

The report does not specify where bird's nests and seal carcasses were sampled in relation to the five Bay area water bodies. Even if specific sample sites were included, it would be difficult to determine the relationship between the presence of PBDEs in the tissues of a widely ranging species, and the water of a specific water body. It is easier to establish this link when the tissues of filter-feeding organisms (e.g., mussels and clams) or organisms that forage locally are exclusively used.

While some data presented was from local fish species, the volume and reliability of the data is questionable. Leopard shark, halibut, striped bass, and other species may move considerable distances before being captured, making it difficult to establish a relationship between pollutants in tissue and the water body of capture. The 'tainted catch' report states: 'PBDE levels varied widely among fish species and between individuals of the same species in part due to location in the Bay.'

Non-Numeric Objective: Basin Plan Narrative Objectives:

"Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

"Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life."

Evaluation Guideline: None available.

Temporal Representation: Multiple studies are cited (e.g., California studies: She et al., 2002). PBDEs in the San Francisco Bay Area: measurements in harbor seal blubber and human breast adipose tissue. Chemosphere 46(2002): 697-707; Petreas et al., 2003. High Body Burdens of 2,2',4,4'-Tetrabromodiphenyl Ether (BDE-47) in California Women. Environ. Heath Perspect. 111(9): 1175-1179; She et al., 2003. High PBDE Levels in Shorebird Eggs from the San Francisco Bay and Washington State. Proceedings. 2003 Georgia Basin/Puget Sound Research Conference.

Line of Evidence Pollutant-Tissue

Beneficial Use ES - Estuarine Habitat

Information Used to Assess Water Quality: 2002 List Fact Sheet Information:

PBDEs research literature will be reviewed by the RWQCB to ascertain any new information on actual effects thresholds for these persistent bioaccumulative substances in the next listing cycle. These actions can be conducted regionally through the RMP, the Bay Area Pollution Prevention Group, or other association of dischargers. During the subsequent listing cycle, RWQCB staff evaluation of current research, applicable water quality criteria, and local actions to characterize sources and pollution prevention of PBDEs will determine whether

	a listing is needed.
Non-Numeric Objective:	Basin Plan Narrative Objectives: "Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." "Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life."

Region 2

Water Segment:	San Francisco Bay, South
Pollutant:	Polybrominated Diphenyl Ethers (PBDEs)
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.1 and 3.5 of the Listing Policy. Under section 3.5 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.5, some data are available showing concentrations of this pollutant in animal tissues. It cannot be determined if the pollutant is likely to cause or contribute to the adverse effects because a numeric guideline or water quality objective is not available. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. An evaluation guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because it cannot be determined if applicable water quality standards are exceeded.
Lines of Evidence:	

Line of Evidence	Adverse Biological Responses
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	2004 List Comments: Numeric information, along with circumstantial, anecdotal, and non-specific referenced evidence, was submitted in 2004 with the request that the San Francisco Bay (presumably San Pablo Bay; San Francisco Bay, Central; San Francisco Bay, South; San Francisco Bay, Lower; and/or Suisun Bay) be listed for the PBDE family of flame retardant chemicals. Otherwise informative studies based on findings from other states and other

	countries (Sweden) cannot, by themselves, provide sufficient evidence to list a pollutant for a California water body. Instead, this data provides background information only. Data on contamination by PBDEs of human (breast) tissue from residents in and around the Bay is not usable for listing those water bodies due to the fact that there is no way to meaningfully link such contamination directly to water quality and to a particular water body. Similarly, the presence of PBDEs in eggs and seal tissues is unfortunately inadequate to list. Again, the problem is the relationship between PBDEs and any human health effects. SWRCB staff is unable to determine exactly where birds nests and seal carcasses were sampled in relation to the five Bay area water bodies. Even if specific sample sites could be established, the question remains: how direct is the relationship between the presence of a pollutant, in this case PBDEs in the tissues of a widely ranging species, and the water of a specific water body. This is not the case when filter-feeding organisms (e.g., mussels and clams) or organisms that forage locally exclusively are used. While some data presented was from local fish species, the volume and reliability of the data is questionable. Leopard shark, halibut, striped bass, and other species may move considerable distances before being captured, blurring the relationship between pollutants in the body and the water body of capture. The 'tainted catch' report summarized the problem facing water quality investigators: 'PBDE levels varied widely among fish species and between individuals of the same species,' in part due to 'location in the Bay.'
Non-Numeric Objective:	Basin Plan: Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.
Evaluation Guideline:	None available. SWRCB remains unaware of any reliable criterion or guideline of use in evaluating the magnitude of the data provided.
Temporal Representation:	Multiple studies are cited (e.g., California studies: She et al., 2002). PBDEs in the San Francisco Bay Area: measurements in harbor seal blubber and human breast adipose tissue. Chemosphere 46(2002): 697-707; Petreas et al., 2003. High Body Burdens of 2,2',4,4'-Tetrabromodiphenyl Ether (BDE-47) in California Women. Environ. Heath Perspect. 111(9): 1175-1179; She et al., 2003. High PBDE Levels in Shorebird Eggs from the San Francisco Bay and Washington State. Proceedings. 2003 Georgia Basin/Puget Sound Research Conference.)

Line of Evidence	Adverse Biological Responses
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	2002 List Fact Sheet Information: PBDEs research literature will be reviewed by the RWQCB to ascertain any new information on actual effects thresholds for these persistent bioaccumulative substances in the next listing cycle. These actions can be conducted regionally through the RMP, the Bay Area Pollution Prevention Group, or other association of dischargers. During the subsequent listing cycle, RWQCB staff evaluation of

current research, applicable water quality criteria, and local actions to characterize sources and pollution prevention of PBDEs will determine whether a listing is needed.

Region 2

Water Segment:	San Francisquito Creek
Pollutant:	Oxygen, Dissolved
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. Very few of the measurements exceeded the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 2. Three of 142 samples exceeded the dissolved oxygen water quality objective and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 3. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MI - Fish Migration, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	5.0 mg/liter, Basin Plan Objective.
Data Used to Assess Water Quality:	DO values recorded in parts per million (equal to mg/l). Of the 142 readings, only 3 exceeded the Basin Plan objective (SFEI, 1998)..
Spatial Representation:	Three stations.

Temporal Representation:	Samples taken over 143 weeks, October 1992 to January 1997. Samples taken consistently in morning (e.g., 8:00 AM).
Environmental Conditions:	Information recorded on air temperature, water temperature, rainfall, weather conditions, water appearance (e.g., turbidity), stream depth, and flow rates (visual information).

Region 2

Water Segment:	San Francisquito Creek
Pollutant:	Turbidity
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. None of the samples exceed the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. None of 58 samples exceeded the turbidity water quality objective and this does not exceed the allowable frequency listed in Table 3.2 of the Listing Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MI - Fish Migration, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan Objective: Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.
Evaluation Guideline:	Percentage over 50 (NTU standard) were measured.
Data Used to Assess Water Quality:	Fifty-eight total readings. 0 total "exceedances" of Basin Plan objective (SFEI, 1998).
Spatial Representation:	One station.
Temporal Representation:	Samples taken over 143 weeks, October 1992 to January 1997. Samples taken

	consistently in morning (e.g., 8:00 AM).
Environmental Conditions:	Information recorded on air temperature, water temperature, rainfall, weather conditions, water appearance (e.g., related to turbidity), stream depth, and flow rates (visual information).

Region 2

Water Segment:	San Francisquito Creek
Pollutant:	pH
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.2 of the Listing Policy. Under section 3.2 a single line of evidence is necessary to assess listing status. One line of evidence is available in the administrative record to assess this pollutant. A small number of samples exceed the water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 3. Seven of 143 samples exceeded the pH water quality objective and this does not exceed the allowable frequency calculated using the equations in Table 3.2 of the Listing Policy. 3. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because applicable water quality standards for the pollutant are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MI - Fish Migration, SP - Fish Spawning, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	The pH of inland surface waters shall not be raised above 8.5 or depressed below 6.5 as a result of controllable water quality factors (SFBRWQCB, 1995)
Data Used to Assess Water Quality:	Seven of 143 samples exceeded the objective (SFEI, 1998).
Spatial Representation:	Spatial representation is unknown.
Temporal Representation:	Samples taken over 143 weeks, October 1992 to January 1997. Samples taken consistently in morning (e.g., 8:00 AM).

Environmental Conditions:	Information recorded on air temperature, water temperature, rainfall, weather conditions, water appearance (e.g., turbidity), stream depth, and flow rates (visual information).

Region 2

Water Segment:	San Pablo Bay
Pollutant:	Polybrominated Diphenyl Ethers (PBDEs)
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.1 and 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. It cannot be determined if the pollutant is likely to exceed the narrative water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. An evaluation guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because it cannot be determined if applicable water quality standards are exceeded.
Lines of Evidence:	

Line of Evidence	Pollutant-Tissue
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	2004 List Comments: Numeric information, along with circumstantial, anecdotal, and non-specific referenced evidence, was submitted in 2004 with the request that the San Francisco Bay (presumably San Pablo Bay; San Francisco Bay, Central; San Francisco Bay, South; San Francisco Bay, Lower; and/or Suisun Bay) be listed for the PBDE family of flame retardant chemicals. Otherwise informative studies based on findings from other states and other countries (Sweden) cannot, by themselves, provide sufficient evidence to list a pollutant for a California water body. Instead, this data provides background information only.

	Data on contamination by PBDEs of human (breast) tissue from residents in and around the Bay is not usable for listing those water bodies due to the fact that there is no way to meaningfully link such contamination directly to water quality and to a particular water body. Similarly, the presence of PBDEs in eggs and seal tissues is unfortunately inadequate to list. Again, the problem is the relationship between PBDEs and any human health effects. SWRCB staff is unable to determine exactly where birds nests and seal carcasses were sampled in relation to the five Bay area water bodies. Even if specific sample sites could be established, the question remains: how direct is the relationship between the presence of a pollutant, in this case PBDEs in the tissues of a widely ranging species, and the water of a specific water body. This is not the case when filter-feeding organisms (e.g., mussels and clams) or organisms that forage locally exclusively are used. While some data presented was from local fish species, the volume and reliability of the data is questionable. Leopard shark, halibut, striped bass, and other species may move considerable distances before being captured, blurring the relationship between pollutants in the body and the water body of capture. The 'tainted catch' report summarized the problem facing water quality investigators: 'PBDE levels varied widely among fish species and between individuals of the same species,' in part due to 'location in the Bay.'
Non-Numeric Objective:	Basin Plan: Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.
Evaluation Guideline:	None available. SWRCB remains unaware of any reliable criterion or guideline of use in evaluating the magnitude of the data provided.
Spatial Representation:	Unknown.
Temporal Representation:	Multiple studies are cited (e.g., California studies: She et al., 2002). PBDEs in the San Francisco Bay Area: measurements in harbor seal blubber and human breast adipose tissue. Chemosphere 46(2002): 697-707; Petreas et al., 2003. High Body Burdens of 2,2',4,4'-Tetrabromodiphenyl Ether (BDE-47) in California Women. Environ. Heath Perspect. 111(9): 1175-1179; She et al., 2003. High PBDE Levels in Shorebird Eggs from the San Francisco Bay and Washington State. Proceedings. 2003 Georgia Basin/Puget Sound Research Conference.)

Line of Evidence	Pollutant-Tissue
Beneficial Use	ES - Estuarine Habitat
Information Used to Assess Water Quality:	2002 List Fact Sheet Information: PBDEs research literature will be reviewed by the RWQCB to ascertain any new information on actual effects thresholds for these persistent bioaccumulative substances in the next listing cycle. These actions can be conducted regionally through the RMP, the Bay Area Pollution Prevention Group, or other association of dischargers. During the subsequent listing cycle, RWQCB staff evaluation of current research, applicable water quality criteria, and local actions to characterize sources and pollution prevention of PBDEs will determine whether

	a listing is needed.
Non-Numeric Objective:	Basin Plan Narrative Objectives: "Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." "Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life."

Region 2

Water Segment:	Stege Marsh
Pollutant:	Dacthal
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Five lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any

	other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline is available.
Data Used to Assess Water Quality:	Five samples ranging in concentration from ND to 11.1 ng/g (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.

Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot on the SWRCB Consolidated Toxic Hot Spots Cleanup Plan SWRCB Resolution No. 99-065). This plan is being implemented through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Dichlorobenzophenone
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline available.

Data Used to Assess Water Quality:	Three measurements (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean

	species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment: Stege Marsh

Pollutant: Endosulfan

Decision: Do Not List

Weight of Evidence: This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status.

Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard.

Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category.

This conclusion is based on the staff findings that:
1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy.
2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.

SWRCB Staff Recommendation: After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Sediment

Beneficial Use: WE - Wetland Habitat

Matrix: Sediment

Water Quality Objective/ Water Quality Criterion: All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.

There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any

	other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline available.
Data Used to Assess Water Quality:	Three measurements (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.

Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Endosulfan sulfate
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline available.

Data Used to Assess Water Quality:	Three measurements. Concentration ranges from 0.9 ng/g to 163 ng/g (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean

	species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Heptachlor epoxide
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. The RWQCB has adopted a cleanup order that will result in attainment of the water quality standard. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Attained category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any

	other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline available.
Data Used to Assess Water Quality:	Three measurements (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.

Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Hexachlorocyclohexane (mixture)
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity but HCH is not likely to cause or contribute to the toxic effect. It cannot be determined if other HCHs have an impact because there is no applicable guideline. The benthic community is impacted but it is unknown if it is impacted by this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments Being Addressed category. This conclusion is based on the staff findings that: 1. A sediment quality guideline that complies, with the requirements of section 6.1.3 of the Policy is not available. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. None of the samples exceeded the sediment guideline for HCH, 5 of 5 samples exhibit toxicity, and these exceed the allowable frequency listed in Table 3.1 of the Listing Policy. The benthic community in this water body is impacted and this pollutant is not associated with this impact. 5. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.

	Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Sediment guideline for gamma HCH (Lindane) is 0.37 ug/g oc. No applicable sediment guidelines are available for other HCHs.
Data Used to Assess Water Quality:	HCH -- three measurements ranging in concentration from 7.5 ng/g to 19.9 ng/g. alpha HCH -- three measurements ranging in concentration from ND to 292 ng/g. beta HCH -- three measurements ranging in concentration from ND to 56.8 ng/g. gamma HCH (Lindane) -- 0 of 3 measurements exceeded sediment guideline. delta HCH -- three measurements ranging in concentration from 0.25 ng/g to 99.4 ng/g (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat

Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Mirex
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. It is unknown if the impact is due to the pollutant. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list of Water Quality Limited Segments. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline available.

Data Used to Assess Water Quality:	Three measurements range in concentration from ND to 103 ng/g (Hunt et al., 1998b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean

	species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Oxadiazon
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline available.

Data Used to Assess Water Quality:	Three measurements range in concentration from ND to 114 ng/g (Hunt et al., 1998b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean

	species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Selenium
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because if cannot be determined if the applicable water quality standards are exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.

Evaluation Guideline:	No sediment guideline available.
Data Used to Assess Water Quality:	Three measurements. Concentration ranged from 3.8 ug/g to 35.7 ug/g (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed

	by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	Toxaphene
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because if cannot be determined if the applicable water quality standards are exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.

Evaluation Guideline:	No applicable sediment guideline available.
Data Used to Assess Water Quality:	Three measurements ranging in concentration from ND ng/g to 15,700 ng/g (Hunt et al., 1998b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a

	calculated value considering the total fauna, total mollusk species, crustacean species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Stege Marsh
Pollutant:	ppDDE
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.2, 3.6, and 3.10 of the Listing Policy. Under section 3.6 a single line of evidence is necessary to assess listing status while under section 3.10, a minimum of two lines of evidence are needed to assess listing status. Four lines of evidence are available in the administrative record to assess this pollutant. Based on section 3.6 the site has significant sediment toxicity and it cannot be determined if the pollutant is likely to cause or contribute to the toxic effect. The benthic community is impacted but it is unknown if it is impacted by this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. A sediment quality guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information for this recommendation, SWRCB staff conclude that the water body should not be placed on the section 303(d) list because applicable water quality standards are not exceeded.
Lines of Evidence:	

Numeric Line of Evidence	Pollutant-Sediment
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	No applicable sediment guideline available.

Data Used to Assess Water Quality:	Three total DDT samples available. Concentration range from 304 ng/g to 542 ng/g (Hunt et al., 1988b).
Spatial Representation:	Data was synoptically collected with benthic community and toxicity measurements.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Toxicity
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	BPTCP reference envelope approach (SWRCB, 1997).
Data Used to Assess Water Quality:	0-1% amphipod survival in 5 of 5 tests. Three of 3 samples with significant urchin toxicity (Hunt et al., 1988b).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Numeric Line of Evidence	Population/Community Degradation
Beneficial Use:	WE - Wetland Habitat
Matrix:	Sediment
Water Quality Objective/ Water Quality Criterion:	All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.
Evaluation Guideline:	Evaluation of the benthic data were completed using the approaches developed by scientists associated with the BPTCP. The relative benthic index used is a calculated value considering the total fauna, total mollusk species, crustacean

	species and indicator species at a site. The index ranges from 0 to 1.0. An index value of less than or equal to 0.3 is an indication that pollutants or other factors are negatively impacting the benthic community.
Data Used to Assess Water Quality:	Relative benthic index = 0.00 (2 benthic samples); (Hunt et al., 1998).
Spatial Representation:	Data was spatially collected.
Temporal Representation:	Data was collected from 10/97-12/97.
Data Quality Assessment:	Used BPTCP QA/QC. Data evaluation was based on USEPA guidelines for 305(b) reports, that uses a hierarchy of water quality data levels. Only data of higher overall level of information (Levels 3 and 4) were used to list a water body.

Line of Evidence	Remedial Program in Place
Beneficial Use	WE - Wetland Habitat
Information Used to Assess Water Quality:	Stege Marsh is identified as a toxic hot spot in the SWRCB Consolidated Toxic Hot Spot Cleanup Plan (SWRCB Resolution No. 99-065). This plan is being implemented by the San Francisco Bay RWQCB through Cleanup and Abatement Orders.

Region 2

Water Segment:	Suisun Bay
Pollutant:	Polybrominated Diphenyl Ethers (PBDEs)
Decision:	Do Not List
Weight of Evidence:	This pollutant is being considered for listing under sections 2.1 and 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess this pollutant. It cannot be determined if the pollutant is likely to exceed the narrative water quality objective. Based on the readily available data and information, the weight of evidence indicates that there is not sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. An evaluation guideline is not available that complies with the requirements of section 6.1.3 of the Policy. 2. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 3. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be placed on the section 303(d) list because it cannot be determined if applicable water quality standards are exceeded.
Lines of Evidence:	

Line of Evidence	Pollutant-Tissue
Beneficial Use	AQ - Aquaculture, CM - Commercial and Sport Fishing (CA)
Information Used to Assess Water Quality:	2004 List Comments: Numeric information, along with circumstantial, anecdotal, and non-specific referenced evidence, was submitted in 2004 with the request that the San Francisco Bay (presumably San Pablo Bay; San Francisco Bay, Central; San Francisco Bay, South; San Francisco Bay, Lower; and/or Suisun Bay) be listed for the PBDE family of flame retardant chemicals. Otherwise informative studies based on findings from other states and other countries (Sweden) cannot, by themselves, provide sufficient evidence to list a pollutant for a California water body. Instead, this data provides background information only.

	Data on contamination by PBDEs of human (breast) tissue from residents in and around the Bay is not usable for listing those water bodies due to the fact that there is no way to meaningfully link such contamination directly to water quality and to a particular water body. Similarly, the presence of PBDEs in eggs and seal tissues is unfortunately inadequate to list. Again, the problem is the relationship between PBDEs and any human health effects. SWRCB staff is unable to determine exactly where birds nests and seal carcasses were sampled in relation to the five Bay area water bodies. Even if specific sample sites could be established, the question remains: how direct is the relationship between the presence of a pollutant, in this case PBDEs in the tissues of a widely ranging species, and the water of a specific water body. This is not the case when filter-feeding organisms (e.g., mussels and clams) or organisms that forage locally exclusively are used. While some data presented was from local fish species, the volume and reliability of the data is questionable. Leopard shark, halibut, striped bass, and other species may move considerable distances before captured, blurring the relationship between pollutants in the body and the water body of capture. The 'tainted catch' report summarized the problem facing water quality investigators: 'PBDE levels varied widely among fish species and between individuals of the same species,' in part due to 'location in the Bay.'
Non-Numeric Objective:	Basin Plan: Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.
Evaluation Guideline:	None available. SWRCB remains unaware of any reliable criterion or guideline of use in evaluating the magnitude of the data provided.
Temporal Representation:	Multiple studies are cited (e.g., California studies: She et al., 2002). PBDEs in the San Francisco Bay Area: measurements in harbor seal blubber and human breast adipose tissue. Chemosphere 46(2002): 697-707; Petreas et al., 2003. High Body Burdens of 2,2',4,4'-Tetrabromodiphenyl Ether (BDE-47) in California Women. Environ. Heath Perspect. 111(9): 1175-1179; She et al., 2003. High PBDE Levels in Shorebird Eggs from the San Francisco Bay and Washington State. Proceedings. 2003 Georgia Basin/Puget Sound Research Conference.)

Line of Evidence	Pollutant-Tissue
Beneficial Use	AQ - Aquaculture, CM - Commercial and Sport Fishing (CA)
Information Used to Assess Water Quality:	2002 List Fact Sheet Information: PBDEs research literature will be reviewed by the RWQCB to ascertain any new information on actual effects thresholds for these persistent bioaccumulative substances in the next listing cycle. These actions can be conducted regionally through the RMP, the Bay Area Pollution Prevention Group, or other association of dischargers. During the subsequent listing cycle, RWQCB staff evaluation of current research, applicable water quality criteria, and local actions to characterize sources and pollution prevention of PBDEs will determine whether a listing is needed.

Non-Numeric Objective:	Basin Plan Narrative Objectives: "Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish or other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." "Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life."