Fact Sheets Supporting
“Do Not Delist” Recommendations

September 2006

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New or Revised Fact Sheets

New or Revised Fact Sheets

Region 1

Water Segment: Russian River HU, Middle Russian River HA, Laguna de Santa Rosa

Pollutant: Nitrogen

Decision: Do Not Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.11 of the Listing Policy. Under this section a single line of evidence is necessary to assess listing status. Fourteen lines of evidence are available in the administrative record to assess this pollutant. They cover TIN:TP ratio, TIN, Nitrate-Nitrogen, Ammonia-Nitrogen, and Nitrate.

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

This conclusion is based on the staff findings that:
1. While no numeric water quality objective is available for nitrogen, USEPA provided guidelines that were used to assess the magnitude of the observed nitrogen concentrations.
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. Assessment of nitrogen measurements show that many measurements are an order of magnitude higher than the USEPA-provided thresholds.
5. The Laguna is infested with exotic aquatic vegetation (Ludwigia) that thrives in oxygen poor, nutrient rich waters. This plant prevents effective mosquito control efforts.
6. It appears that the nutrient concentrations and loads have a reasonable potential to be a promoting factor in the observed infestation of Ludwigia. Nitrogen therefore poses a risk to the maintenance of the narrative water quality standard in the Laguna.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from the section 303(d) list because applicable narrative water quality standards for the pollutant are exceeded.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: WA - Warm Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such

	growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	USEPA provided testimony that nitrogen levels should be compared to nutrient assessment guidelines for the protection of aquatic life (USEPA, 2006). Many values are available and potentially could be used to evaluate Laguna de Santa Rosa nitrogen data. The threshold values ranged from 0.22 to 1.5 mg/L.
Data Used to Assess Water Quality:	Data were provided in comments by USEPA (Strauss, 2006). Data were evaluated from two sources (Whickhan and Rawson, 2000 and Scoles, 2006 as referenced in USEPA, 2006). Nitrogen levels are significantly higher than the range of assessment levels provided by USEPA (USEPA, 2006). Approximately 30% of the samples exceeded the thresholds. At least 18 samples exceeded by a factor 10. The nitrogen data reported by Scoles also was expressed in terms of individual nitrogen components, Forty-three percent of the samples exceeded the screening threshold and about 10% of samples exceeded this threshold by a factor or at least 4.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Data is recorded as TIN:TP ratio. TIN:TP ratio is considered in the narrative objective for biostimulatory substances. However, there is no numeric water quality objective for TIN:TP ratio. Therefore, it is difficult to determine that the concentration of TIN:TP ratio exceeds standards.
Data Used to Assess Water Quality:	Twenty-five sampling events were completed by the City of Santa Rosa NPDES Program. The TIN:TP ratios for the 101 samples taken ranged from 2.5 to 29.1667 with an average value of 4.365 and a standard deviation of 3.282. There was a 99% confidence interval of 0.841. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare to the TIN:TP ratios. Therefore, it is difficult to determine whether the decrease in dissolved oxygen is due solely to the TIN:TP ratio levels (Scoles, 2004).
Spatial Representation:	Samples were collected from 4 sampling sites: Laguna at Todd Road, Upstream at Delta, Laguna upstream of D-Pond Incline pump, and Laguna approximately 100 feet upstream of Llano Rd. Bridge.
Temporal Representation:	Samples were collected between 1/2003 and 12/2003.
Data Quality Assessment:	City of Santa Rosa Quality Assurance Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	WA - Warm Freshwater Habitat

Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Total Inorganic Nitrogen was measured and is considered in the narrative objective for biostimulatory substances. However, there is no numeric water quality objective for total inorganic nitrogen. Therefore, it is difficult to determine that the concentration of total inorganic nitrogen exceeds standards.
Data Used to Assess Water Quality:	Sixty sampling events were completed by the City of Santa Rosa NPDES Program. The values of the total inorganic nitrogen ranged from 0.3 to 12.2. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare to the concentration of total inorganic nitrogen (Scoles, 2004).
Spatial Representation:	Samples were collected from 12 sites: Laguna at Llano Road, Laguna at Todd Road, Laguna at Hwy 12, and Laguna at Occidental Bridge, Laguna 100 feet upstream of D-Pond incline Pump, Laguna 150 feet downstream of D-Pond Incline Pump, Laguna at La Franchi, Laguna-approximately 100 feet upstream of Llano Rd. Bridge, Laguna upstream of D-Pond 36, upstream Laguna at Delta, Russian River at Wohler Bridge, Russian River at Mirabel, upstream Roseland Cr. at Llano Rd., downstream Roseland Cr. at Summer Crossing/South of Alpha Bldg., upstream Kelly-downstream confluence of Duer Creek and Kelly Farm Drainage, downstream Duer Creek at Kelly, Colgan Creek upstream confluence with Laguna.
Temporal Representation:	Samples were collected between 10/1995 and 3/2004.
Data Quality Assessment:	City of Santa Rosa Quality Assurance Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Total Organic Nitrogen was measured and is considered in the narrative objective for biostimulatory substances. However, there is no numeric water quality objective for total organic nitrogen. Therefore, it is difficult to determine that the concentration of total organic nitrogen exceeds standards.
Data Used to Assess Water Quality:	Twenty-five sampling events were conducted by the City of Santa Rosa NPDES Program. The samples ranged from values of 0.2 mg/L to 2.3 mg/L total organic nitrogen. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare to the concentration of total organic nitrogen (Scoles, 2004).
Spatial Representation:	Sample were collected from 4 sites: Laguna at Todd Road, Upstream at Delta, Laguna upstream of D-Pond Incline pump, and Laguna upstream of Llano Rd. Bridge.

Temporal Representation:	Samples were collected between 1/2003 and 12/2003.
Data Quality Assessment:	City of Santa Rosa Quality Assurance Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Data is reported in TIN: 0.80 TP (Bioavailable N:P ratio). TIN: 0.80 TP is considered in the narrative objective for biostimulatory substances. However, there is no numeric water quality objective for TIN: 0.80 TP. Therefore, it is difficult to determine that the concentration of TIN: 0.80 TP exceeds standards.
Data Used to Assess Water Quality:	Sixty sampling events were completed by the City of Santa Rosa NPDES Program. The range of measured values for the ratio of TIN: 0.80 TP was from 0.3 to 16.9. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare to the concentration of TIN: 0.80 TP (Scoles, 2004).
Spatial Representation:	Samples were collected from 12 sites: Laguna at Llano Road, Laguna at Todd Road, Laguna at Hwy 12, and Laguna at Occidental Bridge, Laguna 100 feet upstream of D-Pond incline Pump, Laguna 150 feet downstream of D-Pond Incline Pump, Laguna at La Franchi, Laguna-approximately 100 feet upstream of Llano Rd. Bridge, Laguna upstream of D-Pond 36, upstream Laguna at Delta, Russian River at Wohler Bridge, Russian River at Mirabel, upstream Roseland Cr. at Llano Rd., downstream Roseland Cr. at Summer Crossing/South of Alpha Bldg., upstream Kelly-downstream confluence of Duer Creek and Kelly Farm Drainage, downstream Duer Creek at Kelly, Colgan Creek upstream confluence with Laguna.
Temporal Representation:	Samples were collected between 10/1995 and 3/2004.
Data Quality Assessment:	City of Santa Rosa Quality Assurance Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	WA - Warm Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Data is reported in TIN: 0.80 TP (Bioavailable N:P ratio). TIN: 0.80 TP is considered in the narrative objective for biostimulatory substances. However, there is no numeric water quality objective for TIN: 0.80 TP. Therefore, it is difficult to determine that the concentration of TIN: 0.80 TP exceeds standards.

Data Used to Assess Water Quality:	Eighty-six sampling events were conducted by the RWQCB Nutrient TMDL Program. The values of the TIN: 0.80 TP recorded ranged from 0.03 up to 20.02. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare to the measurement of TIN: 0.80 TP (Scoles, 2004).
Spatial Representation:	Four sample sites: Laguna at Guerneville Road, Laguna at Occidental Road, Laguna at Stony Point Road and Laguna at Trenton-Healdsburg Road.
Temporal Representation:	Samples were collected between 7/1997 and 11/2000.
Data Quality Assessment:	Nutrient TMDL Program.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Nitrate-Nitrogen is considered in the narrative objective for biostimulatory substances. However, there is no numeric water quality criterion for nitrate-nitrogen. Therefore, it is difficult to determine that the concentration of nitrate-nitrogen exceeds standards.
Data Used to Assess Water Quality:	Sixty sampling events were conducted by the City of Santa Rosa NPDES Program. The sample values ranged from 0.2 mg/L to 9.7 mg/L and the values were presented as monthly averages of weekly observations. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare to the concentration of nitrate-nitrogen (Scoles, 2004).
Spatial Representation:	Samples were collected from up to 12 sites: Laguna at Llano Road, Laguna at Todd Road, Laguna at Hwy 12, and Laguna at Occidental Bridge, Laguna 100 feet upstream of D-Pond incline Pump, Laguna 150 feet downstream of D-Pond Incline Pump, Laguna at La Franchi, Laguna-approximately 100 feet upstream of Llano Rd. Bridge, Laguna upstream of D-Pond 36, upstream Laguna at Delta, Russian River at Wohler Bridge, Russian River at Mirabel, upstream Roseland Cr. at Llano Rd., downstream Roseland Cr. at Summer Crossing/South of Alpha Bldg., upstream Kelly-downstream confluence of Duer Creek and Kelly Farm Drainage, downstream Duer Creek at Kelly, Colgan Creek upstream confluence with Laguna.
Temporal Representation:	Samples were collected between 10/1995 and 3/2004.
Data Quality Assessment:	City of Santa Rosa QA Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	MU - Municipal & Domestic, R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	There are no applicable criteria available for Ammonia-Nitrogen.
Data Used to Assess Water Quality:	Twenty-five sampling events were completed by the City of Santa Rosa NPDES Program. There were 101 samples taken for Ammonia-Nitrogen, the values ranged from 0.2 mg/L to 1.1mg/L. The number of exceedances of the standard was not possible to calculate due to the lack of an applicable criterion for Ammonia-Nitrogen to compare to the measured values (Scoles, 2004).
Spatial Representation:	Samples were collected at up to 4 sampling sites: Laguna at Todd Road, Upstream at Delta, Laguna upstream of D-Pond Incline pump, and Laguna upstream of Llano Rd. Bridge.
Temporal Representation:	Samples were collected between 1/2003 and 12/2003.
Data Quality Assessment:	City of Santa Rosa QA Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	There are no applicable criteria available for Ammonia-Nitrogen.
Data Used to Assess Water Quality:	There were 86 sampling events completed by the RWQCB TMDL Monitoring Program. The range of values measured was from 0.025 mg/L to 3.24 mg/L. There is not a numeric objective or criteria to compare to the concentration of ammonia-nitrogen in the samples. Therefore, it is difficult to determine whether the decrease in dissolved oxygen is due solely to the ammonia-nitrogen concentration levels (Scoles, 2004).
Spatial Representation:	Up to four sample sites: Laguna at Guerneville Road, Laguna at Occidental Road, Laguna at Stony Point Road and Laguna at Trenton-Healdsburg Road.
Temporal Representation:	Samples were collected between 7/1997 and 11/2000.
Data Quality Assessment:	RWQCB Nutrient TMDL Program.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	There are no applicable criteria available for Ammonia-Nitrogen.
Data Used to Assess Water Quality:	Twenty-five sampling events were conducted by the City of Santa Rosa NPDES Program. The values of the measurements ranged from 0.2 mg/L to 1.1 mg/L. The number of exceedances of the standard was not calculated due to the lack of an applicable criterion for Ammonia-Nitrogen to compare to the measured values (Scoles, 2004).

Spatial Representation:	Samples were collected at up to 4 sites: Laguna at Todd Road, Upstream at Delta, Laguna upstream of D-Pond Incline pump, and Laguna upstream of Llano Rd. Bridge.
Temporal Representation:	Samples were collected between 1/2003 and 12/2003.
Data Quality Assessment:	City of Santa Rosa QA Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	There are no applicable criteria available for Ammonia-Nitrogen.
Data Used to Assess Water Quality:	There were sixty samples events from the City of Santa Rosa NPDES Program. The measured values ranged from 0.1 mg/L to 6.8 mg/L. The number of exceedances of the standard was not calculated due to the lack of an applicable criterion for Ammonia-Nitrogen to compare to the measured values (Scoles, 2004).
Spatial Representation:	Samples were collected from 12 sites: Laguna at Llano Road, Laguna at Todd Road, Laguna at Hwy 12, and Laguna at Occidental Bridge, Laguna 100 feet upstream of D-Pond incline Pump, Laguna 150 feet downstream of D-Pond Incline Pump, Laguna at La Franchi, Laguna-approximately 100 feet upstream of Llano Rd. Bridge, Laguna upstream of D-Pond 36, upstream Laguna at Delta, Russian River at Wohler Bridge, Russian River at Mirabel, upstream Roseland Cr. at Llano Rd., downstream Roseland Cr. at Summer Crossing/South of Alpha Bldg., upstream Kelly-downstream confluence of Duer Creek and Kelly Farm Drainage, downstream Duer Creek at Kelly, Colgan Creek upstream confluence with Laguna.
Temporal Representation:	Samples were collected between 12/1995 and 3/2004.
Data Quality Assessment:	City of Santa Rosa QA Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Nitrate is considered in the narrative objective for biostimulatory substances. There is no a nitrate numeric water quality criterion for the Cold Water Beneficial Use. However, for the beneficial use of Municipal and Domestic Supply (MUN), the MCL Criteria for Nitrates is 45 mg/L (ppm) can be considered.
Data Used to Assess Water Quality:	Eighty-six sampling events were conducted by the RWQCB Nutrient TMDL Monitoring Program. There were no samples that exceeded the 45 mg/L MCL criterion (Scoles, 2004).

Spatial Representation:	Samples were collected from 4 sample sites: Laguna at Guerneville Road, Laguna at Occidental Road, Laguna at Stony Point Road, and Laguna at Trenton-Healdsburg Road.
Temporal Representation:	Samples were collected between 7/1997 and 11/2000.
Data Quality Assessment:	RWQCB TMDL Monitoring Program.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat, MU - Municipal & Domestic
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Nitrite is considered in the narrative objective for biostimulatory substances. However, there is no applicable numeric water quality criterion for nitrite. Therefore, it is difficult to determine that the concentration of nitrite exceeds standards.
Data Used to Assess Water Quality:	Eighty-six sampling events were completed by the RWQCB Nutrient TMDL Program. The nitrite values ranged from 0.025mg/L to 0.28 mg/L. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective/criteria to compare the concentration of nitrite (Scoles, 2004).
Spatial Representation:	Up to four sample sites: Laguna at Guerneville Road, Laguna at Occidental Road, Laguna at Stony Point Road, and Laguna at Trenton-Healdsburg Road.
Temporal Representation:	Samples were collected between 7/1997 - 11/2000.
Data Quality Assessment:	Nutrient TMDL Program.

Line of Evidence	Narrative Description Data
Beneficial Use	WA - Warm Freshwater Habitat
Information Used to Assess Water Quality:	Ludwigia hexapetala, an exotic vegetation, is a direct threat to the diversity of native plant and animal communities in the Laguna by growing over surrounding vegetation to produce thick mats of woody perennial stems and decaying plant matter (Sears et al., 2005). This mat inhibits the recovery and recruitment of other plants, and eliminates open-water habitats that are important foraging grounds for bird and other wildlife. As Ludwigia tissue decomposes, microbes reduce dissolved oxygen in water, impacting fish and invertebrate populations. Ludwigia is adapted to low-oxygen (anaerobic) conditions, through specialized root structures that extract oxygen and nutrients from the water column. These root structures also provide a conduit for atmospheric gases to the plant in anaerobic conditions. Along with the ability to tolerate low oxygen levels, Ludwigia appears to grow well in nutrient-rich waters. In general for this species, increased nitrogen and phosphorus concentrations in water result in increased growth and

	greater plant biomass.
Non-Numeric Objective:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Spatial Representation:	Ludwigia hexapetala covers at least 150 acres of shallow-water areas in the Laguna de Santa Rosa.

Region 1

Water Segment:	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa
Pollutant:	Phosphorus
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 4.11 of the Listing Policy. Under this section at least single line of evidence is necessary to assess listing status. Six lines of evidence are available in the administrative record to assess this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list in the Water Quality Limited Segments category. This conclusion is based on the staff findings that: 1. While no numeric water quality objective is available for phosphorus, USEPA provided guidelines that were used to assess the magnitude of the observed phosphorus concentrations. 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. Assessment of phosphorus measurements show that many measurements are an order of magnitude higher than the USEPA-provided thresholds. 5. The Laguna is infested with exotic aquatic vegetation (Ludwigia) that thrives in oxygen poor, nutrient rich waters. This plant prevents effective mosquito control efforts. 6. It appears that the nutrient concentrations and loads have a reasonable potential to be a promoting factor in the observed infestation of Ludwigia. Phosphorus therefore poses a risk to the maintenance of the narrative water quality standard in the Laguna.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from the section 303(d) list because applicable narrative water quality standards for the pollutant are exceeded.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	USEPA provided testimony that phosphorus levels should be compared to nutrient assessment guidelines for the protection of aquatic life (USEPA, 2006). These values range from 0.010 to 0.2 mg/L.
Data Used to Assess Water Quality:	Data were provided in comments by USEPA (USEPA, 2006). Data were evaluated from two sources (Whickhan and Rawson, 2000 and Scoles, 2006 as referenced in USEPA, 2006). Total phosphorus data were presented in both sources and were compared to the guideline levels from USEPA. Approximately 95% of phosphorus measurements exceeded the least conservative screening threshold. Approximately 20% of measurements exceeded the 0.1 mg/L threshold by a factor of 10.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Phosphorus is considered in the narrative objective for biostimulatory substances. Without a numeric water quality objective it is difficult to determine whether the concentration of total phosphorus exceeded standards.
Data Used to Assess Water Quality:	There were 86 sampling events conducted by the RWQCB TMDL Monitoring Program at the 3 to 4 sampling sites between 7/1997 and 11/2000. The data range for values of total phosphorus was between 0.113 mg/L and 1.87 mg/L. Even though there is a narrative objective for biostimulatory substance, there is not a numeric objective or criteria to compare to the concentration of total phosphorus measured (Scoles, 2004).
Spatial Representation:	Three to four sample sites (Laguna at Guerneville Road, Laguna at Occidental Road, Laguna at Stony Point Road and Laguna at Trenton-Healdsburg Road.
Temporal Representation:	Samples were collected between 7/1997 and 11/2000.
Data Quality Assessment:	Nutrient TMDL Program.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Phosphorus is considered in the narrative objective for biostimulatory substances. A numeric water quality objective is not available so it is difficult to determine whether the concentration of total phosphorus exceeded standards.
Data Used to Assess Water Quality:	There were sixty sampling events completed by the City of Santa Rosa NPDES Program at up to 12 sample sites between 12/1995 and 3/2004. The data range for values of total phosphorus was between 0.1 mg/L and 3.9 mg/L. Even though there is a narrative objective for biostimulatory substance, there is not a numeric objective or criteria to compare to the concentration of total phosphorus measured (Scoles, 2004).
Spatial Representation:	Samples were collected from 2 to 12 sites (Laguna at Llano Road, Laguna at Todd Road, Laguna at Hwy 12, and Laguna at Occidental Bridge, Laguna 100' upstream of D-Pond incline Pump, Laguna 150' downstream of D-Pond Incline Pump, Laguna at La Franchi, Laguna-approx 100' upstream of Llano Rd. Bridge, Laguna upstream of D-Pond 36", upstream Laguna at Delta, Russian River at Wohler Bridge, Russian River at Mirabel, upstream Roseland Cr. at Llano Rd., downstream Roseland Cr. at Summer Crossing/South of Alpha Bldg., upstream Kelly-downstream confluence of Duer Creek and Kelly Farm Drainage, downstream Duer Creek at Kelly, Colgan Creek upstream confluence with Laguna.
Temporal Representation:	Samples were collected during 12/95 through 3/04.
Data Quality Assessment:	City of Santa Rosa QA Manual.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Data reported in 80% TP (total phosphorus). 80% TP is considered in the narrative objective for biostimulatory substances. There is no numeric water quality objective for 80% TP. Therefore, it is difficult to determine that the concentration of nitrate-nitrogen exceeds standards.
Data Used to Assess Water Quality:	Eighty-six sampling events were conducted by the RWQCB TMDL Program. The range of values of 80% TP was between 0.02 and 2.38. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare the concentration

	of 80% TP. Therefore, it is difficult to determine whether the decrease in dissolved oxygen is solely due to the 80% TP (SWRCB, 2003).
Spatial Representation:	Three to four sample sites (Laguna at Guerneville Road, Laguna at Occidental Road, Laguna at Stony Point Road and Laguna at Trenton-Healdsburg Road.
Temporal Representation:	Samples were collected between 7/1997 and 11/2000.
Data Quality Assessment:	NCRWQCB Nutrient TMDL Program.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Evaluation Guideline:	Phosphorus is considered in the narrative objective for biostimulatory substances. A numeric water quality objective is not available so it is difficult to determine whether the concentration of total phosphorus exceeded standards.
Data Used to Assess Water Quality:	Twenty-five sampling events were completed by the City of Santa Rosa NPDES at up to 5 sample sites between 1/2003 and 12/2003. The range of values for total phosphorus measured was between 0.4 mg/L and 1.6 mg/L. Even though there is a narrative objective for biostimulatory substance there is not a numeric objective or criteria to compare to the concentration of total phosphorus (Scoles, 2004).
Spatial Representation:	Samples were collected at 4 sites: Laguna at Todd Road, upstream at Delta, Laguna upstream of D-Pond Incline pump, and Laguna upstream of Llano Rd. Bridge.
Temporal Representation:	Samples were collected between 1/2003 and 12/2003.
Data Quality Assessment:	City of Santa Rosa QA Manual.

Line of Evidence	Narrative Description Data
Beneficial Use	WA - Warm Freshwater Habitat
Information Used to Assess Water Quality:	Ludwigia hexapetala, an exotic vegetation, is a direct threat to the diversity of native plant and animal communities in the Laguna by growing over surrounding vegetation to produce thick mats of woody perennial stems and decaying plant matter (Sears et al., 2005). This mat inhibits the recovery and recruitment of other plants, and eliminates open-water habitats that are important foraging grounds for bird and other wildlife. As Ludwigia tissue decomposes, microbes reduce dissolved oxygen in water, impacting fish and invertebrate populations. Ludwigia is adapted to low-oxygen (anaerobic) conditions, through specialized root structures that extract oxygen and nutrients from the water column. These root structures also provide a conduit for atmospheric gases to the plant in anaerobic conditions. Along with the

	ability to tolerate low oxygen levels, Ludwigia appears to grow well in nutrient-rich waters. In general for this species, increased nitrogen and phosphorus concentrations in water result in increased growth and greater plant biomass.
Non-Numeric Objective:	Basin Plan: Water shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
Spatial Representation:	Ludwigia hexapetala covers at least 150 acres of shallow-water areas in the Laguna de Santa Rosa.

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Original Fact Sheets

Fact Sheets Not Changed
from September 2005 Version

Region 1

Water Segment: Eel River HU, Middle Fork HA

Pollutant: Temperature, water

Decision: Do Not Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess temperature consistent with the Listing Policy section 6.1.5.9. A large number of samples exceed the water quality objective. 321 of 339 temperature measurements (total) exceeded the 14.8°C coho guideline and 17.0°C steelhead evaluation guidelines.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list.

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. There were 321 of 339 temperature samples exceeded the 14.8°C coho and 17.0°C steelhead evaluation guidelines and this exceeds the allowable frequency calculated from the equation in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: Basin Plan: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California" including any revisions thereto. A copy of this plan is included verbatim in the Appendix Section of this Plan. In addition, the following temperature objectives

	apply to surface waters: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of any COLD water be increased by more than 5 degrees F above natural receiving water temperature. At no time or place shall the temperature of WARM intrastate waters be increased more than 5 degrees F above natural receiving water temperature.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the 7-day mean (maximum value of the 7-day moving average of the daily mean temperature) upper threshold criterion for coho salmon as 14.8°C and for steelhead trout as 17.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that the 7-day average upper threshold of a 14.8°C for coho and a 17.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	The data submitted was for the Middle fork of the Eel River. Three sampling locations were provided. There were a total of 339 samples taken at the three sampling locations from May 27 to September 16, 2003. 321 temperature samples exceeded the 14.8°C coho guideline and 17.0°C steelhead evaluation guideline (North Coast RWQCB, 2003c).
Spatial Representation:	There were 3 sampling locations in the Middle Fork Eel River. These locations were: Middle Fork Eel near the mainstream at Rowland Bar, Middle Fork at Cable Creek, and Middle Fork near Dos Rios Bridge.
Temporal Representation:	Samples were collected hourly over the period of May 27 to September 16, 2003.
Environmental Conditions:	The Middle Fork of the Eel River is currently listed for temperature.
Data Quality Assessment:	No QAPP provided. Data collected from the Mendocino County Water Agency.

Region 1

Water Segment: Eel River HU, South Fork HA

Pollutant: Temperature, water

Decision: Do Not Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess temperature consistent with Listing Policy section 6.1.5.9. A large number of samples exceed the water quality objective. When compared to the 14.8 °C coho threshold, there were 4,184 exceedances out of 10,476 total samples taken over all the sampling years. When compared to the 17.0°C steelhead threshold there were 1,350 exceedances found.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list.

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. At a minimum, 4,184 of 10,476 samples exceeded the Sullivan 14.8 °C coho evaluation guideline used to interpret the water quality objective and this exceeds the allowable frequency calculated from the equation in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: Basin Plan: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal

	and Interstate Waters and Enclosed Bays of California" including any revisions thereto. A copy of this plan is included verbatim in the Appendix Section of this Plan. In addition, the following temperature objectives apply to surface waters: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature. At no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the 7-day Mean (maximum value of the 7-day moving average of the daily mean temperature) upper threshold criterion for coho salmon as 14.8°C and for steelhead trout as 17.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that the 7-day average upper threshold of a 14.8°C for coho and 17.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	When the data was compared to the 14.8°C threshold for coho, there were 4,184 exceedances out of 10,476 total samples taken over all of the years at the sampling locations. When compared to the 17°C threshold for steelhead there were 1,350 exceedances found (Hawthorne Timber Company, 2003).
Spatial Representation:	Data was collected in-stream from the Eel River. The sampling sites were located along the main stem of the South Fork Eel River, Indian Creek, Moody Creek, Anderson Creek, Piercy Creek, Standley Creek, Bear Pen Creek, Wildcat Creek, Hollow Tree Creek, Dutch Charlie Creek and Redwood Creek. A total of 10,476 sampling measurements were taken at 13 sampling locations from 1994 to 2003. In-stream and riparian measurements were taken at all monitoring locations.
Temporal Representation:	Data was recorded for 10 years, from 1994 through 2003. Water temperature data were recorded at ninety-minute intervals, generally from June until Mid-October. Stream temperatures were measured continuously with temperature data loggers (Onset Computer Corp. model HOBO-Temp and OST temperature loggers) in Class 1 streams throughout the property from 1994 to 2004. Hobo-temps allowed uninterrupted data collection to occur throughout the critical summer period.
Environmental Conditions:	The Eel River HU, South Fork HA is currently listed for temperature. The USEPA will develop a TMDL for Eel River, South Fork. Sediment and temperature TMDLs will be developed for the area tributary to and including the South Fork of the Eel River above Garberville and the area tributary to an including the South Fork of the Eel River below Garberville.
Data Quality Assessment:	QA/QC Information Summary submitted. Installation of the temperature data logger (Onset Computer Corp. model HOBO-Temp and OST temperature loggers in Class 1 streams throughout the property devices occurred one day before the first day logged on the continuous

temperature monitoring figures. This was done to allow the data loggers to reach equilibrium with the instream temperature regimes and to capture complete daily cycles. No information on equipment calibration, standard operating procedures or data protocols were included with the submittal.

Region 1

Water Segment:	Eel River HU, Upper Main HA, Lake Pillsbury HSA, Lake Pillsbury
Pollutant:	Mercury
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 4.5 of the Listing Policy. One line of evidence is available in the administrative record to assess this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of removing this water segment-pollutant combination from 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. Forty-eight out of 51 samples exceeded the OEHHA Screening Value and this exceeds the allowable frequency listed in Table 4.1 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 removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Tissue
Beneficial Use:	CM - Commercial and Sport Fishing (CA)
Matrix:	Tissue
Water Quality Objective/ Water Quality Criterion:	North Coast RWQCB Basin Plan: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Evaluation Guideline:	0.3 µg/g OEHHA Screening Value (Brodberg & Pollock, 1999).
Data Used to Assess Water Quality:	Forty-eight out of 51 samples exceeded. Filet composite and individual samples were collected for the following species: largemouth bass collected in 1992-95 and 1999-2001; Sacramento pike minnow collected in 1992-93, 1995, 1999, and 2000; bluegill collected in 1999; and rainbow

	trout collected in 2000. All but two rainbow trout samples and one Sacramento pike minnow sample exceeded the guideline (TSMP, 2002).
Spatial Representation:	Four stations were sampled: near Lake Pillsbury Resort, along shoreline just north of the Scott Dam (Dam), in the Eel River Arm (Eel River Arm), and in Horsepasture Gulch near inflow (Horsepasture Gulch).
Temporal Representation:	Samples were collected annually in 1992-95 and 1999-2000.
Data Quality Assessment:	Toxic Substances Monitoring Program 1992-93 and 1994-95 Data Reports. Environmental Chemistry Quality Assurance and Data Report for the Toxic Substances Monitoring Program, 1996-2000. Department of Fish and Game.

Region 1

Water Segment:	Mendocino Coast HU, Big River HA, Big River
Pollutant:	Temperature, water
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section a single line of evidence is necessary to assess listing status. Two lines of evidence are available in the administrative record to assess temperature consistent with Listing Policy section 6.1.5.9. A large number of samples exceed the water quality objective. This delisting decision only applies to the section of the Big River at Daugherty Creek, 50 feet above the confluence with the South Fork Big River and 100 feet below Orr Springs Road Bridge. Compared to the 14.8°C threshold there were 2,498 exceedances out of 3,925 samples taken over all of the sampling years at this location. When compared to the 17°C threshold there were 1,686 exceedances out of the 3,925 samples. Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list. 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. At a minimum 2,498 of 3,925 samples exceeded the 14.8 degree evaluation guideline used to interpret the water quality objective and this exceeds the allowable frequency calculated from the equation in Table 4.2 of the Listing Policy. 4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California" including any revisions thereto. A copy of this plan is included verbatim in the Appendix Section of this Plan. In addition, the following temperature objectives apply to surface waters: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature. At no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the 7-day Mean (maximum value of the 7-day moving average of the daily mean temperature) upper threshold criterion for coho salmon as 14.8°C and for steelhead trout as 17.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the for the 7-day average of 14.8°C for coho and 17.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	The Daugherty Creek near Big River sampling site had 114 total measurements with 108 exceedances of the Sullivan 14.8°C evaluation guideline (Mendocino County Water Agency, 2003). Of these 108 exceedances, 74 exceeded the 17.0°C evaluation guideline. The South Fork Big River site below Orr Springs Road Bridge had 114 total measurements with 108 exceedances of the Sullivan 14.8°C Evaluation guideline. Of these 108 exceedances, 73 exceeded the 17.0°C evaluation guideline (North Coast RWQCB, 2003b).
Spatial Representation:	Samples were taken from two sites. One site was at Daugherty Creek site 50 feet above the confluence with South Fork Big River. The other site was at South Fork Big River 100 feet below the Orr Springs Road Bridge.
Temporal Representation:	Samples were collected hourly from May 23, 2003 through September 7, 2003. MWATs were provided from the hourly data.
Environmental Conditions:	The Big River is currently listed for temperature.
Data Quality Assessment:	No QAPP information was provided. The data were submitted by the Mendocino County Water Agency.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California" including any revisions thereto. A copy of this plan is included verbatim in the Appendix Section of this Plan. In addition, the following temperature objectives apply to surface waters: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature. At no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the 7-day Mean (maximum value of the 7-day moving average of the daily mean temperature) upper threshold criterion for coho salmon as 14.8°C and for steelhead trout as 17.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the for the 7-day average of 14.8°C for coho and 17.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	When compared to the 14.8 °C coho threshold, were 2,498 exceedances out of 3,925 total samples taken over the all of the sampling years at this location. When compared to the 17°C steelhead threshold there were 1,686 exceedances out of the 3,925 total samples (Hawthorne Timber Co., 2003).
Spatial Representation:	There were 7 sampling locations over 9 years. Hobo-Temps were placed in the pools near the bottom and towards the deepest portion to record the in-stream temperatures. In stream and riparian measurements were taken at all monitoring locations.
Temporal Representation:	Data was recorded for 1994,1995,1996,1998,1999, 2000, 2001, 2002, and 2003. Water temperature data were recorded at ninety-minute intervals, generally from June until Mid-October. Stream temperatures were measured continuously with temperature data loggers (Onset Computer Corp. model HOBO-Temp and OST temperature loggers) in Class 1 streams throughout the property from 1994 to 2003. Hobo-temps allowed uninterrupted data collection to occur throughout the critical summer period.
Environmental Conditions:	Mendocino Coast HU, Big River HA, Big River is currently listed for temperature on the section 303(d) list. For the 2002 listing submittal data was collected over 4 years (1996-2000), with at least two years of record at 15 locations. Data showed exceedances of the Basin Plan Water

	Quality Objectives and the Sullivan 2000 Published Temperature Thresholds-Peer Reviewed Literature. The most sensitive beneficial uses supported by the Big River include uses associated with the cold water fishery and municipal and domestic supply. The Big River provides habitat for coho salmon and steelhead trout, which are listed as a threatened species under the federal Endangered Species Act. Populations of coho salmon and steelhead trout in the Big River are extremely low compared to historical levels. Recent (1996-2000) temperature data gathered in the Big River watershed indicate that high temperature levels may be a source of impairment of cold water fisheries in the river. This listing is specific to the area of the watershed from the confluence with the North Fork Big River, including the watersheds of the mainstem Big and the North Fork Big.
Data Quality Assessment:	QA/QC Information Summary was submitted. Installation of the temperature data logger (Onset Computer Corp. model HOBO-Temp and OST temperature loggers in Class 1 streams throughout the property devices occurred one day before the first day logged on the continuous temperature monitoring figures. This was done to allow the data loggers to reach equilibrium with the instream temperature regimes and to capture complete daily cycles. No information on equipment calibration, standard operating procedures or data protocols were included with the submittal.

Region 1

Water Segment: Mendocino Coast HU, Rockport HA, Ten Mile River HSA

Pollutant: Temperature, water

Decision: Do Not Delist

Weight of Evidence: This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section a single line of evidence is necessary to assess listing status.

One line of evidence is available in the administrative record to assess temperature consistent with Listing Policy section 6.1.5.9. A large number of samples exceed the water quality objective. When compared to the 14.8 °C threshold, were 10,776 exceedances out of 41,187 total samples taken over all the sampling years at this location. When compared to the 17°C threshold there were 639 exceedances found.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list.

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. At a minimum 10,776 of 41,187 samples exceeded the Sullivan 14.8 degree coho evaluation guideline selected to interpret the water quality objective and this exceeds the allowable frequency calculated from the equation in Table 4.2 of the Listing Policy.
4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.

SWRCB Staff Recommendation: After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence Pollutant-Water

Beneficial Use: CO - Cold Freshwater Habitat

Matrix: Water

Water Quality Objective/ Water Quality Criterion: Basin Plan: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal

	and Interstate Waters and Enclosed Bays of California" including any revisions thereto. A copy of this plan is included verbatim in the Appendix Section of this Plan. In addition, the following temperature objectives apply to surface waters: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of any COLD water be increased by more than 5 F above natural receiving water temperature. At no time or place shall the temperature of WARM intrastate waters be increased more than 5 F above natural receiving water temperature.
Evaluation Guideline:	The guideline used was from Sullivan et al. (2000) Published Temperature Thresholds-Peer Reviewed Literature which includes reviewed sub-lethal and acute temperature thresholds from a wide range of studies, incorporating information from laboratory-based research, field observations, and risk assessment approaches. This report calculated the 7-day Mean (maximum value of the 7-day moving average of the daily mean temperature) upper threshold criterion for coho salmon as 14.8°C and for steelhead trout as 17.0°C. The risk assessment approach used by Sullivan et al. (2000) suggests that an upper threshold for the for the 7-day average of 14.8°C for coho and 17.0°C for steelhead will reduce average growth 10% from optimum.
Data Used to Assess Water Quality:	When compared to the 14.8 °C coho threshold, there were 10,776 exceedances out of 41,187 total samples taken over all the sampling years at this location. When compared to the 17°C steelhead threshold there were 639 exceedances found (Hawthorne Timber Co., 2003).
Spatial Representation:	Data was collected from the North Fork, Clark Fork, South Fork and mainstem of the Ten Mile River. Sampling measurements were taken from a total of 54 instream sampling locations. Hobo-Temps were placed in the pools near the bottom and towards the deepest portion to record the in-stream temperatures. In stream and riparian measurements were taken at all monitoring locations.
Temporal Representation:	Data was recorded between 1994 and 2003. Water temperature data were recorded at 90-minute intervals, generally from June until Mid-October. Stream temperatures were measured continuously with temperature data loggers (Onset Computer Corp. model HOBO-Temp and OST temperature loggers) in Class 1 streams throughout the property from 1994 to 2003. Hobo-temps allowed uninterrupted data collection to occur throughout the critical summer period.
Environmental Conditions:	Mendocino Coast HU, Rockport HA, Ten Mile River HSA is currently listed for temperature. It was placed on the list during the 2002 listing cycle. The data showed that 31 out of the 37 locations exceeded the standards and uses of the Basin Plan Water Quality Objectives and Sullivan 2000 Published Temperature Thresholds-Peer Reviewed Literature.
Data Quality Assessment:	QA/QC Information Summary was submitted. Installation of the temperature data logger (Onset Computer Corp. model HOBO-Temp and OST temperature loggers in Class 1 streams throughout the property devices occurred one day before the first day logged on the continuous temperature monitoring figures. This was done to allow the data loggers to reach equilibrium with the instream temperature regimes and to capture complete daily cycles. No information on equipment calibration,

standard operating procedures or data protocols were included with the submittal.

Region 1

Water Segment:	Russian River HU, Middle Russian River HA, Geyserville HSA
Pollutant:	Turbidity
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section 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. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list for sedimentation/siltation. 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. Ten of the 18 samples exceeded the evaluation guideline used to interpret the water quality objective. At least 28 samples are needed before a pollutant can be considered for removal from the list using the frequencies presented in Table 4.2 of the Listing Policy. 4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	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. Turbidity shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. Water shall not contain substances in concentrations that result in deposition of material that causes

	nuisance or adversely affect beneficial uses.
Evaluation Guideline:	The evaluation guideline that has been 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 (1984). The guideline is "In our studies, as little as 25 NTUs of turbidity caused a reduction in fish growth."
Data Used to Assess Water Quality:	By combining the data from the three sampling sites there were 10 samples out of the 18 samples that were above the evaluation guideline. The exceedances ranged from 30.5 NTU up to 356 NTU (Sandler, 2004).
Spatial Representation:	There were three sampling locations along the Russian River, one at Healdsburg, and two at Cloverdale. They are as follows: -Sample site RUS070 is located at the Healdsburg Veteran's beach, Healdsburg. -Sample site RUS080 is located at the Cloverdale 1st St. bridge, Cloverdale. -Sample site RUS090 is located at the Cloverdale River Park, Cloverdale.
Temporal Representation:	RUS070 was sampled once a month January through April 2003. RUS080 and RUS090 were sampled once a month, January through May 2003, and in July and August 2003. Samples were taken on the same days of the month at each location.
Data Quality Assessment:	Draft QAPP for Volunteer Water Quality Monitoring Project for the Community Clean Water Institute.

Region 1

Water Segment:	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa
Pollutant:	Oxygen, Dissolved
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section 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 the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list in the Water Quality Limited Segments 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. The data collected from 1995-2001 had 1612 of 1792 samples that were below the minimum dissolved oxygen objective. The data from 2003 had 6 of 9 samples at one location, and 1 of 2 samples at the other locations, that were below the minimum dissolved oxygen objective. These samples exceed the allowable frequency listed in Table 4.2 of the Listing Policy. 5. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Dissolved oxygen- is 7.0mg/L as a minimum; and the water must meet the 50% Upper Limit of 10 mg/L and 90% Upper Limit of 7.5 mg/L.
Data Used to Assess Water Quality:	The total number of samples taken were 1792 with 1612 samples below the Dissolved Oxygen water quality objective (SWRCB, 2003).

Spatial Representation:	Data were collected at 4 points along the water body.
Temporal Representation:	The data were collected over 5 to 6 years between 1995 and 2001 over 4 seasons.
Data Quality Assessment:	Data came from the NCRWQCB 2002 Listing Update.

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	Basin Plan: Dissolved oxygen- is 7.0mg/L as a minimum; and the water must meet the 50% Upper Limit of 10 mg/L and 90% Upper Limit of 7.5 mg/L.
Data Used to Assess Water Quality:	At sampling station LAG030 5 out of 9 samples were below the minimum 7.0 mg/L objective, this sampling locations samples were in exceedance Upper Limit 50% and Upper Limit 90% objectives as well. At sampling station LAG040 1 out of 2 samples were below the minimum 7.0 mg/L objective. At sampling station LTL010 1 out of 2 samples were below the minimum 7.0 mg/L objective. At sampling station LAG050 the only sample was below the minimum 7.0 mg/L objective (Sandler, 2004).
Spatial Representation:	There are 5 sampling locations for Laguna de Santa Rosa. Sampling station LAG030 is located at Permanent gage behind Community Center in Sebastopol. Sampling station LAG040 is located at By bridge at Todd Rd. South of Sebastopol. Sampling station LTL010 is located at North of LAG050 on Llano Rd., by bridge. Sampling station LAG050 is located at By bridge at Llano Road south of Sebastopol.
Temporal Representation:	Sampling station LAG030 was sampled once a month, with one measurement for that day of the month during 2003, with no samples collected for May, July and September. Sampling station LAG040 was sampled once in June and once in August 2003. Sampling station LTL010 was sampled once in June and once in August 2003. Sampling station LAG050 was sampled once in June 2003.
Data Quality Assessment:	Draft QAPP for Volunteer Water Quality Monitoring Project for the Community Clean Water Institute.

Region 1

Water Segment:	Russian River HU, Middle Russian River HA, Laguna de Santa Rosa
Pollutant:	Turbidity
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section 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 the readily available data and information, the weight of evidence indicates that there is sufficient justification against removing this water segment-pollutant combination from the section 303(d) list in the Water Quality Limited Segments category for sedimentation/siltation. 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. The data collected from 2003 had 8 of 15 samples that were in exceedance of the turbidity evaluation guideline used to interpret the water quality objective. These samples exceed the allowable frequency listed in Table 4.2 of the Listing Policy. 5. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	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. Turbidity shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of

	discharge permits or waiver thereof. Water shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.
Evaluation Guideline:	The evaluation guideline that has been 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 (1984). The guideline is "In our studies, as little as 25 NTUs of turbidity caused a reduction in fish growth."
Data Used to Assess Water Quality:	There were 15 turbidity samples taken in total, of those there were 8 samples that were above the Sigler turbidity evaluation guideline of 25 NTU. Each sampling location had at least one sample in exceedance, above the evaluation guideline (Sandler, 2004).
Spatial Representation:	There were 4 sampling locations for Laguna de Santa Rosa. Sampling station LAG030 is located at permanent gage behind Community Center in Sebastopol. Sampling station LAG040 is located by bridge at Todd Rd. South of Sebastopol. Sampling station LTL010 is located north of LAG050 on Llano Rd., by bridge. Sampling station LAG050 is located by bridge at Llano Road south of Sebastopol.
Temporal Representation:	Sampling station LAG030 was sampled once a month for ten months in 2003, no samples were taken in May and September. Sampling station LAG040, LAG050, and LTL010 were sampled once a month in June and August 2003.
Data Quality Assessment:	Draft QAPP for Volunteer Water Quality Monitoring Project for the Community Clean Water Institute.

Region 1

Water Segment:	Russian River HU, Middle Russian River HA, Warm Springs HAS
Pollutant:	Turbidity
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 4.2 of the Listing Policy. Under this section 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 of the samples exceed the evaluation guideline. The number of samples is insufficient to determine exceedance with the confidence and power required by the Listing Policy. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of removing this water segment-pollutant combination from the section 303(d) list for sedimentation/siltation. 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 two samples exceeded the evaluation guideline used to interpret the water quality objective. At least 28 samples are needed before a pollutant can be considered for removal from the list using the frequencies presented in Table 4.2 of the Listing Policy. 4. Pursuant to section 4.11 of the Listing Policy, no additional data and information are available indicating that standards are met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should not be removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Water
Beneficial Use:	CO - Cold Freshwater Habitat
Matrix:	Water
Water Quality Objective/ Water Quality Criterion:	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. Turbidity shall not be increased more than 20 percent above naturally occurring background

	levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. Water shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.
Evaluation Guideline:	The evaluation guideline that has been 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 (1984). The guideline is "In our studies, as little as 25 NTUs of turbidity caused a reduction in fish growth."
Data Used to Assess Water Quality:	One sample was taken on 1/13/2003 at 45.7 NTU, which is above the Sigler turbidity evaluation guideline of 25 NTU. The other sample was taken on 3/16/2003 at 21.3 NTU below the guideline. Of the two samples one exceeded the guideline (Sandler, 2004).
Spatial Representation:	Sampling was limited to Mill Creek, a tributary to the Russian River. Samples were taken at 2563 Mill Creek Rd., Healdsburg. There were two samples taken from Mill Creek at this one sampling location.
Temporal Representation:	Samples were taken in January and March 2003.
Environmental Conditions:	Warm Springs HSA is currently listed for sedimentation as part of the Russian River HU, Middle Russian River HA, Dry Creek HSA listing for sedimentation/siltation. This segment will be addressed in the Russian River Sedimentation/Siltation TMDL.
Data Quality Assessment:	Draft QAPP for Volunteer Water Quality Monitoring Project for the Community Clean Water Institute.

Region 1

Water Segment:	Russian River HU, Middle Russian River HA, Warm Springs HSA, Lake Sonoma [Reservoir]
Pollutant:	Mercury
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 3.5 of the Listing Policy. One line of evidence is available in the administrative record to assess this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of removing this water segment-pollutant combination from 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. Twenty-three out of 28 samples exceeded the OEHHA Screening Value and this exceeds the allowable frequency listed in Table 4.1 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 removed from on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Tissue
Beneficial Use:	CM - Commercial and Sport Fishing (CA)
Matrix:	Tissue
Water Quality Objective/ Water Quality Criterion:	North Coast RWQCB Basin Plan: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Evaluation Guideline:	OEHHA Screening Value 0.3 µg/g for mercury (Brodberg & Pollock, 1999).

Data Used to Assess Water Quality:	Twenty-three out of 28 samples exceeded. Filet composite and individual samples were collected for the following species: largemouth bass collected in 1992-93, 1995-97, and 2000-01; redear sunfish collected in 1993 and 2001; and black crappie collected in 2001. All but three redear sunfish (2001) samples and two black crappie samples exceeded the guideline (TSMP, 2002).
Spatial Representation:	Three stations were sampled: from the Rockpile Road Bridge upstream 1/2 mile in the Warm Springs Creek arm, in Dry Creek Arm about 3 miles upstream Warm Springs Dam, and at mouth of Warm Springs Creek.
Temporal Representation:	Samples were collected annually in 1992-93, 1995-97 and 2000-01.
Data Quality Assessment:	Toxic Substances Monitoring Program 1992-93 and 1994-95 Data Reports. Environmental Chemistry Quality Assurance and Data Report for the Toxic Substances Monitoring Program, 1996-2000. Department of Fish and Game. Environmental Chemistry Quality Assurance and Data Report for the Toxic Substances Monitoring Program, 2001-2002. Department of Fish and Game.

Region 1

Water Segment:	Russian River HU, Upper Russian River HA, Coyote Valley HSA, Lake Mendocino [Reservoir]
Pollutant:	Mercury
Decision:	Do Not Delist
Weight of Evidence:	This pollutant is being considered for removal from the section 303(d) list under section 3.5 of the Listing Policy. One line of evidence is available in the administrative record to assess this pollutant. Based on the readily available data and information, the weight of evidence indicates that there is insufficient justification in favor of removing this water segment-pollutant combination from 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. Nine of the 16 samples exceeded the OEHHA Screening Value but the number of samples is insufficient to determine with the confidence and power required by 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 removed from the section 303(d) list because it cannot be determined if applicable water quality standards are attained.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Tissue
Beneficial Use:	CM - Commercial and Sport Fishing (CA)
Matrix:	Tissue
Water Quality Objective/ Water Quality Criterion:	North Coast RWQCB Basin Plan: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Evaluation Guideline:	0.3 µg/g (OEHHA Screening Value) (Brodberg & Pollock, 1999).
Data Used to Assess Water Quality:	Nine out of 16 samples exceeded. Seven filet composite samples of largemouth bass, 4 filet individual samples of channel catfish, 2 filet individual samples of rainbow trout, 2 filet composite redear sunfish, and

	1 individual sample of striped bass were collected. Largemouth bass were collected in 1993, 2000-01, channel catfish, rainbow trout, striped bass in 2001,and redear sunfish in 1992-93. Six largemouth bass samples, 2 channel catfish samples, and the striped bass sample exceeded the guideline (TSMP, 2002).
Spatial Representation:	Two stations were sampled: in the Marina off Highway 20 on the north end of the lake and in cove to the east across from dam (South End).
Temporal Representation:	Samples were collected annually in 1992-93, 1999, and 2001.
Data Quality Assessment:	Toxic Substances Monitoring Program 1992-93 Data Report. Environmental Chemistry Quality Assurance and Data Report for the Toxic Substances Monitoring Program, 1996-2000. Department of Fish and Game. Environmental Chemistry Quality Assurance and Data Report for the Toxic Substances Monitoring Program, 2001-2002. Department of Fish and Game.

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