Appendix B-5

Sonoma County Water Agency
Revised Temperature and Water Quality Monitoring Plan
For the Russian River during April – October 2009
May 22, 2009

Background

This revised Temperature and Water Quality Monitoring Plan (Plan) is submitted in accordance with State Water Resources Control Board (State Board) Division of Water Rights Order WR 2009-0027-DWR (Order), approving a Temporary Urgency Change in Permits 12947A, 12949, 12950, and 16596 for Sonoma County Water Agency (Agency). Provision 8 of the Order required the Agency to prepare a Temperature Monitoring Plan and Provision 9 required the Agency to prepare a Water Quality Monitoring Plan for the Russian River and Lake Mendocino. On April 20, 2009, the Agency submitted a plan to meet the requirements of Order WR 2009-0027-DWR. Following public comment during a public workshop on May 6, 2009 and comments relative to the original plan, the State Board asked the Agency to revise the plan in consultation with the North Coast Regional Water Quality Control Board (NCRWQCB), NOAA National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (DFG).

On May 14, 2009, the Agency consulted with staff from the Sonoma County Environmental Health Department (DEH), NCRWQCB, NMFS, DFG with staff from the State Board and DFG also present via teleconference. The review of comments received and consultation with all parties noted above has resulted in this revised water quality sampling and monitoring plan.

Summary

The Plan incorporates the collection of data through permanent and seasonal instrumentation to collect both real time and baseline water quality information and provides for the analysis of water quality through sampling for public health guidance and overall water quality condition.

The revised water quality and temperature sampling locations are shown in Attachment A. A more detailed summary of the revised sampling program is provided in Attachment B. The individual components are explained below.

Agency Permanent and Seasonal Sondes

In coordination with the United States Geological Survey (USGS) the Agency maintains five multi-parameter water quality sondes on the Russian River located at Hopland, Diggers Bend in Healdsburg, the Agencies river diversion facility (RDS) at Mirabel, Hacienda Bridge and Johnson's Beach. These five sondes are referred to as "permanent" as the Agency maintains them as part of its early warning detection system. The sondes take real time readings of water pH, temperature, dissolved oxygen content (DO), specific conductivity, turbidity, and depth, every 15 minutes and transmit the raw data via telemetry to the Agencies operations center. In addition, the Hopland, Diggers Bend and Hacienda Beach data is provided in cooperation with the USGS on its "Real-time Data for California" website. For those interested in the complete

set of water quality data, the Agency offers an "email subscription" available to the public via the Agencies website.

In addition to the permanent sondes, the Agency seasonally deploys sondes at various locations within the watershed. This year the Agency in cooperation with the USGS is installing seasonal sondes with real-time telemetry at the USGS river gauge station north of Cloverdale at Commisky Station Road and at new gauge stations at the Alexander Valley Road Bridge and at Riverfront Park. However, the USGS is heavily burdened with ongoing activities in many of the coastal watersheds and these three sondes may not be installed until July. Once installed, the Agency will update its website links to include these three new seasonal stations.

In consultation with the NCRWQCB the Agency is deploying two seasonal sondes in the upper reach of the Russian River just below Coyote Dam. These sondes will be deployed at the Lake Mendocino outfall and just below the westfork confluence. The westfork confluence location is pending access over private property and thus collection of data will commence upon access and installation.

As part of its estuary monitoring program the Agency installs seasonal sondes in the lower portion of the Russian River below Duncans Mills. Sondes are deployed at Freezeout Creek, Heron Rookery, Sheephouse Creek, Bridgehaven, Patty's Rock and at the mouth of the Russian River at Jenner. These sondes take readings on water pH, temperature, DO, specific conductivity, salinity, and depth, every hour. Three of these sites are boat in only and thus data are stored in the unit until it can be retrieved by field personnel. SCWA personnel download the data in the field every two to three weeks.

Water Quality Sampling

The NCRWQCB in cooperation with the DEH conducts seasonal bacteriological and general water quality sampling at Russian River beaches which experience the greatest body contact recreation. In consultation with the NCRWQCB and DEH, the Agency will supplement the seasonal program with a bacteriological and biostimulatory response sampling program.

The NCRWQCB seasonal sampling locations consist of: Camp Rose; Memorial Beach; Steelhead Beach; Forestville Access Beach; Johnson's Beach; and Monte Rio Beach. In addition to the seasonal sampling locations noted above, the Agency will conduct supplemental weekly bacteriological sampling at: the Russian River near Commisky Station Road (aka Russian R NR Cloverdale); Cloverdale River Park; Geyserville Hwy 128 bridge; Alexander Valley Road bridge; and at the Hacienda Bridge, these locations were selected as additional public recreational sites. Bacteriological samples will be collected weekly beginning May 28, 2009 continuing until October 1, 2009 and during the Labor Day weekend. The samples will be analyzed using the Colilert-18 quantitray MPN method for total coliform and *E. coli* and the Enterolert quantitray method for Enterococcus. Daily sampling will be conducted following an acute exceedance of the California Department of Health Services – Draft Guidance for Fresh Water Beaches and continue until a "less than" result is confirmed.

In addition to the bacteriological sampling and in consultation with the NCRWQCB, NMFS and DFG, the Agency will conduct biostimulatory response water quality monitoring at the following locations: Lake Mendocino outfall; Russian River near Commisky Station Road (aka Russian R NR Cloverdale); Alexander Valley Road bridge; Healdsburg Veterans Memorial Beach; Hacienda bridge; and Monte Rio Beach. Water samples will be collected weekly and analyzed for: Ammonia-N; Nitrate-N; Total Organic Nitrogen; and Total Phosphorous. In addition, chlorophyll-a will be analyzed for at all stations except the Lake Mendocino outfall.

The Agency will also be conducting a separate but related estuary bacteriological and nutrient sampling program. Agency staff will collect bacteriological and nutrient samples once every three weeks at three locations in the estuary: (1) Freezeout Creek below Duncans Mills; (2) Bridgehaven; and (3) River mouth at Jenner. Similar to the previously described bacteriological and nutrient constituents the estuary samples will be analyzed for total coliform and *E.* coli using the Colilert-18 quantitray MPN method and Enterococcus using the Enterolert quantitray method for Enterococcus. Nutrients analyzed will be consistent as described previously.

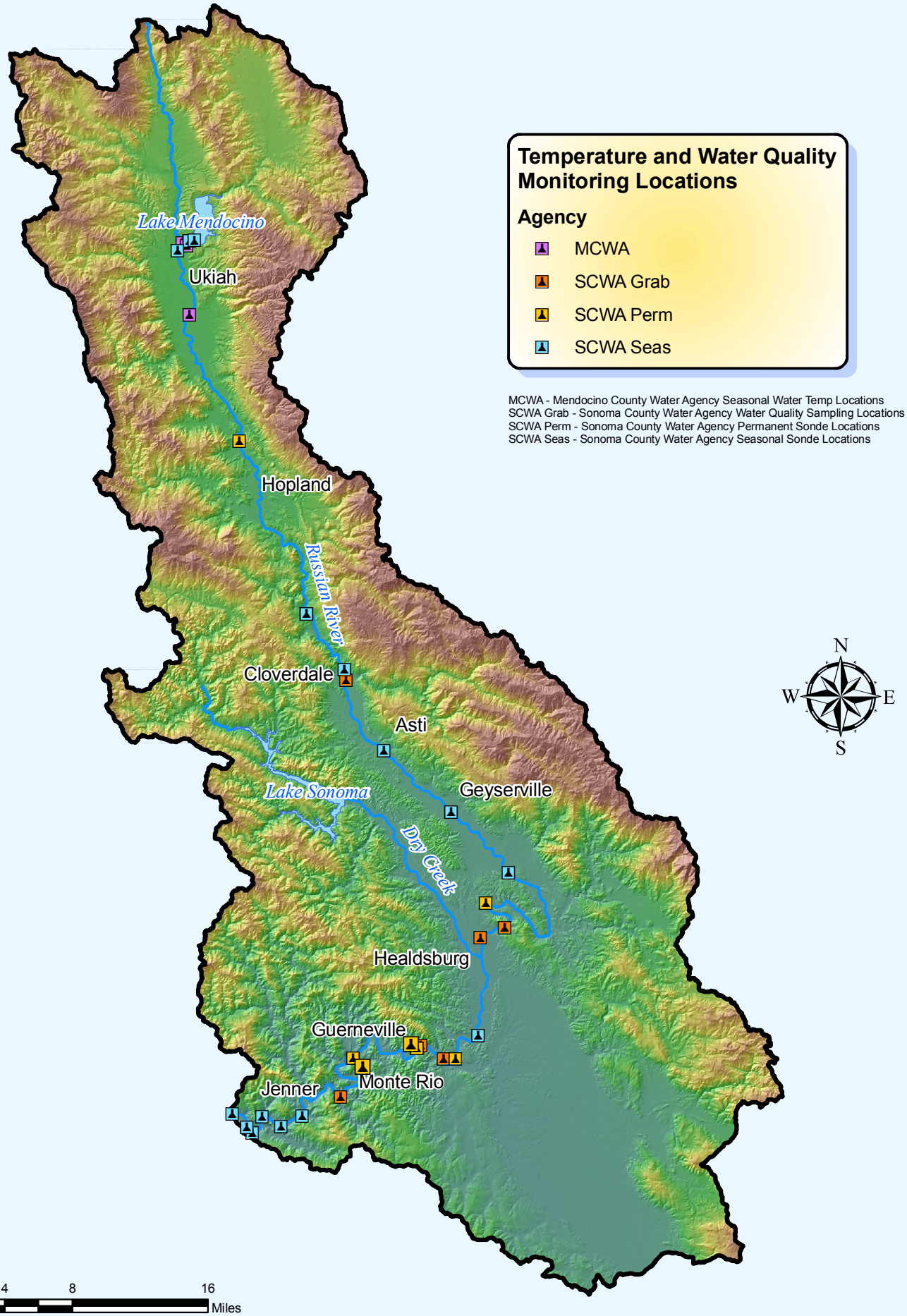
The NCRWQCB and the Agency will also collaborate on vertical profiling of Lake Mendocino water quality at or near the tower structure. The profiling will be conducted on a monthly basis and alternate between Agency and NCRWQCB staff.

Sonoma and Mendocino County Water Agency Seasonal Water Temperature Collection

In addition to temperature data collected by the sondes, the Agency will deploy seasonal water temperature sensors with data logging capabilities at Preston, Asti and Geyserville. The data will be downloaded and compiled every two to three weeks. The Mendocino County Water Agency deploys seasonal water temperature sensors with data logging capabilities at numerous locations throughout the watershed. In the Russian River they expect to deploy sensors in the East Fork of the Russian River below Coyote Dam, in the West Fork of the Russian River below Lake Mendocino Drive, in the Russian River at Talmage Road and in the Russian River at Commisky Station Road. The Mendocino County Water Agency has agreed to provide the raw data as downloads become available.

Data Analysis and Reporting

Results from bacteriological samples will be transmitted to both the DEH and NCRWQCB within one business day for posting to their respective websites and potential beach postings. The Agency will also update its website to include links to the DEH and NCRWQCB websites. The Agency will also submit results within one business day to the Mendocino County Environmental Health Department which expects to report exceedances on its beach hotline. Laboratory results from the nutrient and chlorophyll-a sampling will be posted on the Agencies website upon receipt of the written laboratory report. Online stream gauge and sonde data is evaluated by Agency staff multiple times daily and upon weekly consultation with DFG, NMFS, NCRWQCB and the DEH may result in the adaptive management of flows. A written report will be submitted to the NCRWQCB and DEH summarizing all collected data within three months of the end of the Order.



Temporary Urgency Change Order WR 2009-0027-DWR

Russian River Watershed, CA

Attachment A revised

p:\projects\special projects\russian river\3310\Water Quality Monitoring\WR 2009027DWR_revised.mxd

Attachment B - revised

May 22, 2009

Summary of Water Quality and Temperature Monitoring for Order 2009-0027-DWR

Instrument or sensor based sampling

Location	depth	temperature	DO	pH	turbidity	specific conductance	salinity	sampling frequency	telemtry?	duration
SCWA Permanent and Seasonal Sonde YSI Water Quality Samplers										
Lake Mendocino Outfall	x	x	x	x		x	x	1 hour	n	May - Oct
Westfork Confluence***	x	x	x	x		x	x	1 hour	n	upon install - Oct
Hopland USGS site	x	x	x	x	x	x		15 min	y	permanent
RR near Cloverdale USGS site*	x	x	x	x	x	x		15 min	y	upon install - Oct
Alexander Valley Road Bridge*	x	x	x	x	x	x		15 min	y	upon install - Oct
Digger's Bend	x	x	x	x	x	x		15 min	y	permanent
Riverfront Park*	x	x	x	x	x	x		15 min	y	upon install - Oct
Mirabel (SCWA RDS Facility)	x	x	x	x	x	x		15 min	y	permanent
Hacienda Bridge	x	x	x	x	x	x		15 min	y	permanent
Johnson's Beach	x	x	x	x	x	x		15 min	y	permanent
Freezeout Creek	x	x	x	x		x	x	1 hour	n	April - Dec**
Heron Rookery	x	x	x	x		x	x	1 hour	n	April - Dec**
Sheephouse Creek	x	x	x	x		x	x	1 hour	n	April - Dec**
Bridgehaven	x	x	x	x		x	x	1 hour	n	May - Dec**
Patty's Rock	x	x	x	x		x	x	1 hour	n	April - Dec**
Mouth @ Jenner	x	x	x	x		x	x	1 hour	n	April - Dec**

***sondes at RR near Cloverdale, Alexander Valley Road Bridge and Riverfront Park are pending USGS installations**

****Dec removal is storm and high river dependant**

***** sonde at Westfork confluence is pending site access**

SCWA Seasonal water temp locations										
Preston		x						15 min	n	June - Oct
Asti		x						15 min	n	June - Oct
Geyserville		x						15 min	n	June - Oct

MCWA Seasonal water temp locations										
EF Russian River below dam		x						90 min	n	June - Oct
WF Russian River		x						90 min	n	June - Oct
Russian River at Talmage Rd		x						90 min	n	June - Oct
Russian River at Commisky		x						90 min	n	June - Oct

Grab Sampling Program

Location	total coliform / *E. coli*	enterococcus	chlorophyll-a	temperature	DO	pH	turbidity	nutrients*	conductivity	Duration
SCWA Urgency Change Order Bacterialogical, Nutrient and Water Quality Grab Sampling										
Lake Mendocino Outfall								x		May 28 - Oct 1
RR near Cloverdale USGS site	x	x	x	x	x			x		May 28 - Oct 1
Cloverdale River Park	x	x		x	x					May 28 - Oct 1
Geyserville Hwy 128 Bridge	x	x		x	x					May 28 - Oct 1
Alexander Valley Road Bridge	x	x	x	x	x			x		May 28 - Oct 1
Camp Rose Rd. (Fitch Mountain)**	x	x		x	x					May 28 - Oct 1
Healdsburg Veterans Memorial Beach**	x	x	x	x	x			x		May 28 - Oct 1
Steelhead Beach**	x	x		x	x					May 28 - Oct 1
Forestville Access Beach**	x	x		x	x					May 28 - Oct 1
Hacienda Bridge	x	x	x	x	x			x		May 28 - Oct 1
Johnson's Beach**	x	x	x	x	x			x		May 28 - Oct 1
Monte Rio Beach (multiple sites)**	x	x		x	x					May 28 - Oct 1

***nutrients include Ammonia-N, Nitrate-N, Total Organic Nitrogen, Total Phosphorous**

Note - SCWA samples Thursday weekly following Memorial Day until end of Order, and Labor Day weekend, daily sampling will follow acute exceedance of the California Department of Health Services - Draft Guidance for Fresh Water Beaches

****The NCRWQCB and Sonoma County Environmental Health Department conduct seasonal bacterialogical sampling at these locations weekly from the Tuesday following Memorial Day until the Tuesday following Labor Day**

SCWA Seasonal Estuary bacterial and nutrient grab sampling										
Freezeout Creek (below Duncans Mills)	x	x	x	x	x			x		June - Oct
Bridgehaven	x	x	x	x	x			x		June - Oct
Mouth @ Jenner	x	x	x	x	x			x		June - Oct

Note - SCWA samples once every three weeks for nutrients and total / *E. coli* and Enterococcus

SCWA/NCRWQCB Vertical Temperature Profiles										
Lake Mendocino (2-4 locations)				x	x	x			x	May - September

Note - SCWA and NCRWQCB alternate conducting monthly vertical temperature profiles