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## Central Valley Regional Water Quality Control Board

28 July 2016

Mr. Joe McGahan  
Western San Joaquin River Watershed Coalition  
1201 L Street  
Los Banos, CA 95354

### **WESTERN SAN JOAQUIN RIVER WATERSHED COALITION – MONITORING PROGRAM QAPP AMENDMENT**

Thank you for submitting the 5 January 2016 request to amend the Westside San Joaquin River Watershed Coalition (Coalition) Quality Assurance Project Plan (QAPP), approved on 15 April 2013. The request proposes to amend Table 4 to add piperonyl butoxide (PBO) and deltamethrin, Table 7 to add PBO, deltamethrin and fenprothrin including modifications to the reporting limit and method detection limit, and Table B-2b including modifications to laboratory control spike (LCS) and matrix spike (MS) recoveries for various compounds.

Central Valley Regional Water Quality Control Board staff reviewed the current U.S. Environmental Protection Agency (EPA) requirements for acceptable LCS and MS percent recovery limits for carbamate and urea herbicide (EPA 8321), organophosphates (EPA 8141A), organochlorine (EPA 8081A), sediment pesticides (EPA 8270), and chlorinated pesticides in sediment (EPA 8081). In addition, the Quality Assurance Officer for the State Water Resources Control Board reviewed the rationale for the proposed updates by the Coalition's contracted laboratories, and confirmed that the amendments are consistent with the acceptable LCS and MS recovery limit requirements in the QAPP Guidelines (MRP Order No. R5-2014-0002-R2, Attachment C).

Based on the information provided in the Coalition's amendment request and staff's evaluation, I approve the Coalition's request to update its monitoring program QAPP. If you have any questions or comments regarding this letter, please contact Gurbinder Dhaliwal at [gurbinder.dhaliwal@waterboards.ca.gov](mailto:gurbinder.dhaliwal@waterboards.ca.gov) or by phone at 916-464-4601.

Sincerely,

*Original Signed By*

Pamela C. Creedon  
Executive Officer

cc: Renee Spears, State Water Resources Control Board

# QAPP AMENDMENT FORM

## IRRIGATED LANDS REGULATORY PROGRAM

COALITION NAME: WESTSIDE SAN JOAQUIN RIVER WATERSHED COALITION

WDR ORDER #: R5-2014-002-R2

QAPP VERSION: REVISION 2

PREPARED BY: STEPHEN L. CLARK, MONITORING PROGRAM COORDINATOR

DATE PREPARED: MARCH 24, 2016

### AMENDMENT #1

**TITLE:** The Westside QAPP is being updated to reflect:

- addition of PBO to the sediment analyses;
- revised reporting limit and method detection limits for pyrethroids, DDD, DDE, & DDT; and
- correct control limits for APPL and Caltest.

**SECTION OF QAPP AFFECTED:** The following tables of the QAPP have been updated:

- Table A-4 (page 14) - add PBO and deltamethrin
- Table A-7 (page 17) - add PBO, deltamethrin, and fenpropathrin
- B-2b (page 40) – The matrix spike and LCS, and matrix spike and LCS duplicates for some compounds in Table B-2b did not meet the criterion noted in the table. Therefore, a table (Attachment 1) is attached to this QAPP amendment that identifies the recoveries of RPDs for the affected compounds.

**JUSTIFICATION:** *Briefly summarize the reason(s) for the amendment. If necessary, more detailed references may be included as attachments to this document.*

The QAPP was updated to address omissions (e.g., PBO) and the correct control limits for a number of lab analyses.

**DETAIL OF CHANGES:** *Provide the proposed amendments presented within an excerpt or section of the original document. New language shall be highlighted and underlined. Removed language shall be struck out and highlighted. Be sure to provide all areas affected by the proposed amendment. For example, if a new method is proposed, then all sections referencing the method, including any applicable reporting limit, quality*

control frequency and sample handling and preservation sections must be included and updated.

The revisions to the QAAP are provided below.

**Table A- 4. Toxicity Analyses for the Westside Coalition**

Class	Monitoring Constituent	Matrix	Assessment	Core	Rain Event	Source	Follow-up
Screen 1	<i>Selenastrum capricornutum</i>	Water	X		X		
	<i>Ceriodaphnia dubia</i> (acute)	Water	X		X		
	<i>Pimephales promelas</i> (acute)	Water	X		X		
TIE <sup>2</sup>	<i>Selenastrum capricornutum</i>	Water					X
	<i>Ceriodaphnia dubia</i> (acute)	Water					X
	<i>Pimephales promelas</i> (acute)	Water					X
Dil. Series <sup>3</sup>	<i>Selenastrum capricornutum</i>	Water					X
	<i>Ceriodaphnia dubia</i> (acute)	Water					X
	<i>Pimephales promelas</i> (acute)	Water					X
Sed. Tox.	<i>Hyalella azteca</i> (survival only)	Sediment	X				
Supporting Chemical Analysis <sup>4</sup>	Total Organic Carbon	Sediment	X				
	Grain Size	Sediment	X				
	Bifenthrin	Sediment					X
	Cypermethrin	Sediment					X
	Cyfluthrin	Sediment					X
	Deltamethrin	Sediment					X
	Esfenvalerate/Fenvalerate	Sediment					X
	Fenpropathrin	Sediment					X
	Lambda cyhalothrin	Sediment					X
	Permethrin	Sediment					X
	Chlorpyrifos	Sediment					X
	DDD (p,p')	Sediment					X
	Piperonyl butoxide (PBO)	Sediment					X
	DDE (p,p')	Sediment					X
DDT (p,p')	Sediment					X	

**Table A-7. Supporting Sediment Analyses: Laboratory Performance Requirements for Analysis of Sediment Quality Samples for TOC, Grain Size, and Pesticides**

Analyte	Method <sup>(1)</sup>	Laboratory	RL <sup>(3)</sup> (ng/g) <sup>(2)</sup>	MDL <sup>(3)</sup> (ng/g) <sup>(2)</sup>
<b>Physical Parameters</b>				
Total Organic Carbon	Walkley-Black	PTS Labs	200 mg/kg	100
Grain Size	ASTM D4464M	PTS Labs	0.01%	0.01
<b>Pesticides</b>				
Bifenthrin	EPA 8270 NCI	Caltest	0.433	0.104
Chlorpyrifos	EPA 8270 NCI	Caltest	0.433	0.12
Cyfluthrin	EPA 8270 NCI	Caltest	0.433	0.11
<u>Deltamethrin</u>	<u>EPA 8270 NCI</u>	<u>Caltest</u>	<u>0.33</u>	<u>0.12</u>
Lambda-cyhalothrin	EPA 8270 NCI	Caltest	0.433	0.06
Cypermethrin	EPA 8270 NCI	Caltest	0.433	0.104
Esfenvalerate	EPA 8270 NCI	Caltest	0.433	0.13
<u>Fenpropathrin</u>	<u>EPA 8270 NCI</u>	<u>Caltest</u>	<u>0.33</u>	<u>0.07</u>
Permethrin	EPA 8270 NCI	Caltest	0.433	0.11
<u>Piperonyl butoxide (PBO)</u>	<u>EPA 8270 NCI</u>	<u>Caltest</u>	<u>0.33</u>	<u>0.03</u>
DDD (p,p')	EPA 8081A	Caltest	2.00	0.80
DDE (p,p')	EPA 8081A	Caltest	2.00	1.20
DDT (p,p')	EPA 8081A	Caltest	2.00	1.00

(1) SOP or EPA Method number

(2) RL and MDL are ng/g, unless otherwise noted.

(3) RLs and MDLs reflect wet weight analysis and are not converted for percent solids or dry weight reporting.

**Table B-2b. Project Quality Control Requirements for Analysis of Water Quality Samples: Requirements for Carbamate Pesticide and Urea Herbicide Analyses by EPA Method 8321, Organochlorine Pesticide Analyses by EPA Method 8081A, Organophosphorus Pesticide and Select Herbicide Analyses by EPA Method 8141A, EPA 547, and EPA 549.2, and for Sediment Quality Samples: Requirements for Pyrethroid Pesticide Analyses by EPA Method 8270.**

QA Procedure	QA Parameter	Frequency <sup>1</sup>	Criterion	Corrective Action
Field Blanks <sup>2</sup>	Contamination	1 per event and at least 5% of total samples	< RL <i>or</i> < (sample ÷ 5)	Examine field log. Identify contamination source. Qualify data as needed.
Field Duplicate	Precision	1 per event and at least 5% of total samples	RPD ≤ 25% if  Difference  ≥ RL	Reanalyze both samples. Identify variability source. Qualify data as needed.
Method Blank	Contamination	≥1 per batch	< MDL <i>or</i> , if n≥3, avg ± 2 s.d. < RL	Identify contamination source. Reanalyze method blank and all samples in batch.
Matrix Spike & LCS	Accuracy	1 per batch	50-150% REC or control limits at ± 3 S.D. of actual lab data <a href="#">See Attachment 1 of the QAPP amendment 1</a>	Check SRM recovery. Attempt to correct matrix problem and reanalyze sample. Qualify data as needed.
Matrix Spike & LCS Duplicates <sup>3</sup>	Precision	1 per batch	RPD ≤ 25% if  Difference  ≥ RL <a href="#">See Attachment 1 of the QAPP amendment 1</a>	Check lab dup RPD. Attempt to correct matrix problem and reanalyze samples. Qualify data as needed.
Assess percent of data successfully collected	Data Completeness	1 per event	90%	Reschedule sample events as necessary or appropriate.

Notes: MDL = Method Detection Limit; RL = Reporting Limit; RPD = Relative Percent Difference; RSD = Relative Standard Deviation; REC = Recovery; LCS = Laboratory Control Sample; SRM = Standard Reference Material (=Certified Reference Material)

- (1) The term “batch”, as used in this document, refers to an uninterrupted series of analyses.
- (2) Field blank for sediment quality samples not collected.
- (3) MSD may be used as the laboratory measure of precision in place of LCSD if the laboratory opts to not perform a LCSD.

**Attachment 1: Matrix Spike Recoveries, Laboratory Control Spike Recoveries, and Duplicate RPD for Pesticide Analyses**

MS/LCS Recovery for Carbamate and Urea Herbicides by EPA 8321	MS/LCS Recovery for OC Pesticides (EPA 8081)	MS/LCS Recovery for OP Pesticides & Select Herbicides (EPA 8141A)	MS/LCS Recovery for Pyrethroid Pesticides (8270) and Chlorinated Pesticides (EPA 8081) <sup>a</sup>	MSD/LSD for Pyrethroid Pesticides (8270) and Chlorinated Pesticides (EPA 8081) <sup>b</sup>
<u>Aldicarb: 31-133%</u>	<u>a-BHC: 33-111%</u>	<u>Atrazine: 39-156%</u>	Bifenthrin: 25-200% (MS)	<u>Bifenthrin: 40%</u>
<u>Carbaryl: 44-133%</u>	<u>b-BHC: 49-119%</u>	<u>Azinphosmethyl: 36-189%</u>	Cypermethrin: 50-170% (MS)	Chlorpyrifos: 40%
<u>Carbofuran: 36-165%</u>	<u>g-BHC (Lindane): 40-114%</u>	<u>Chlorpyrifos: 61-125%</u>	Esfenvalerate:fenvalerate: 50-175% (MS)	<u>Cyfluthrin: 30%</u>
<u>Diuron: 52-136%</u>	<u>d-BHC: 12-97%</u>	<u>Cyanazine: 22-172%</u>	Fenpropathrin: 50-200% (LCS)	<u>Cypermethrin: 30%</u>
<u>Linuron: 49-144%</u>	<u>Heptachlor: 24-124%</u>	<u>Demeton: 12-85%</u>	Fenpropathrin: 50-200% (MS)	<u>Deltamethrin:tralomethrin: 30%</u>
<u>Methamidophos: 25-136%</u>	<u>Aldrin: 11-138%</u>	<u>Dichlorvos: 46-141%</u>	Lambda-cyhalothrin: 30-160% (MS)	<u>Esfenvalerate:fenvalerate: 30%</u>
<u>Methomyl: 23-152%</u>	<u>a- Chlordane: 44-152%</u>	<u>Diazinon: 57-130%</u>	PBO: 30-150% (LCS)	Fenpropathrin: 40%
<u>Methiocarb: 35-142%</u>	<u>g- Chlordane: 51-115%</u>	<u>Disulfoton: 47-117%</u>	Permethrin: 40-200% (MS)	<u>Lambda-cyhalothrin: 30%</u>
<u>Oxamyl: 10-117%</u>	<u>4,4'-TDE/DDD: 38-135%</u>	<u>Dimethoate: 68-202%</u>		PBO: 35%
<u>Diphenamid (S): 40-122%</u>	<u>4,4'-DDE: 21-134%</u>	<u>EPTC: 39-133%</u>		Permethrin: 40%
<u>Tributylphosphate (S): 36-140%</u>	<u>4,4'-DDT: 18-145%</u>	<u>Malathion: 47-125%</u>		<u>4,4'-DDD: 50%</u>
	<u>Dicofil: 40-135%</u>	<u>Methidathion: 50-150%</u>		<u>4,4'-DDE: 50%</u>
	<u>Dieldrin: 48-121%</u>	<u>Phosmet: 50-150%</u>		<u>4,4'-DDT: 59%</u>
	<u>Endosulfan I: 50-131%</u>	<u>Parathion, ethyl: 62-123%</u>		
	<u>Endosulfan II: 55-128%</u>	<u>Parathion, methyl: 55-164%</u>		
	<u>Endosulfan Sulfate: 63-109%</u>	<u>Phorate: 44-117%</u>		
	<u>Endrin: 24-143%</u>	<u>Prowl (pendimethalin): 63-129%</u>		
	<u>Heptachlor epoxide: 58-109%</u>	<u>Simazine: 21-179%</u>		
	<u>Methoxychlor: 30-163%</u>	<u>Trifluralin: 44-117%</u>		
	<u>Toxaphene: 23-140%</u>	<u>Tributylphosphate (S): 60-150%</u>		
	<u>Decachlorobiphenyl (S): 16-146%</u>	<u>Triphenylphosphate (S): 56-129%</u>		
	<u>TCmX (S): 15-98%</u>			

(S) = surrogate. a – Spike recoveries are 50-150%, except for pesticides noted below. b – RPDs are ≤25%, except for pesticides noted below.

**APPROVAL:** Please include the exact language provided below and fill-in the appropriate Coalition parties for final signature.

The amendment(s) detailed within this document shall be effective upon signature completion of all parties listed below. By signing this amendment, all parties listed below acknowledge and accept these changes. A copy of this document shall be distributed to all parties within the QAPP distribution list and shall be included and/or attached to all distributed copies of the original QAPP. The amendment(s) will be incorporated into the full QAPP document when a formal QAPP revision takes place.

**Watershed Coordinator**

Joseph C. McGahan

Digitally signed by Joseph C. McGahan  
DN: cn=Joseph C. McGahan, o=Summers Engineering, ou,  
email=jcmcgahan@summerseng.com, c=US  
Date: 2016.04.08 08:21:23 -0700

Date:

Joseph McGahan, Summers Engineering:

**Technical Program  
Manager & QA Officer**

Chris Linneman

Digitally signed by Chris Linneman  
Date: 2016.04.08 07:43:55 -0700

Date:

Chris Linneman, Summers Engineering:

**Monitoring Program  
Coordinator**

*Stephen L. Clark*

Digitally signed by Stephen L. Clark  
Date: 2016.03.28 12:41:19 -0800

Date:

Stephen L. Clark, Pacific EcoRisk

**QA Manager**

*Krista Prosser*

Digitally signed by Krista Prosser  
Date: 2016.03.28 12:52:08 -0800

Date:

Krista Prosser, Pacific EcoRisk

**QA Officer**

*Emily C. Volkmar*

Digitally signed by Emily Volkmar  
DN: cn=Emily Volkmar, o=Critical Analytical Laboratory, ou,  
email=emily.volkmar@caltest.com, c=US  
Date: 2016.03.29 16:05:23 -0700

Date:

Emily Volkmar, Caltest Laboratories

**QA Director**

*Sharon Dehmlow*

Digitally signed by Sharon Dehmlow  
DN: cn=Sharon Dehmlow, ou=APPL, inc., ou=QA Director,  
email=sharon.dehmlow@applinc.com, c=US  
Date: 2016.03.31 09:03:40 -0700

Date:

Sharon Dehmlow, APPL Inc.

**ILRP Staff Liaison**

Gurbinder Dhaliwal

Digitally signed by Gurbinder Dhaliwal  
DN: cn=Gurbinder Dhaliwal, ou=CVRWQCB, ou=SWRCB and Implementation,  
c=US, email=Gurbinder.Dhaliwal@stateboards.ca.gov, o=US  
Date: 2016.05.10 12:02:11 -0700

Date:

Gurbinder Dhaliwal, CVRWQCB

**SWRCB or CVRWQCB  
QA Representative\***

*Renee Spears*

Renee Spears, SWRCB

Date:

07.26.2016

**ILRP Monitoring &  
Implementation Unit Chief**

*Susan Fregien*

Susan Fregien, CVRWQCB

Date:

7/26/16