PW ENVIRONMENTAL

WATER QUALITY MANAGEMENT PLAN

NURSERY GROWERS ASSOCIATION
LOS ANGELES COUNTY
IRRIGATED LANDS GROUP

July 26, 2013

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July 26, 2013

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CWIL Order No. R4-2010-0186

LIST OF COMMONLY USED ACRONYMS

ABC	ABC Laboratories
ALB	Aquatic Life Benchmark
AMR	Annual Monitoring Report
BMP	Best Management Practice
CCRWQCB	Central Coast Regional Water Quality Control Board
COC	Chain of Custody; Constituent of Concern
CRG	CRG Marine Laboratories
CWH	Council for Watershed Health
CWIL	Conditional Waiver Irrigated Lands
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DO	Dissolved Oxygen
DPR	Department of Pesticide Regulations
GPS	Global Positioning System
gal/acre	Gallons per Acre
IPM	Integrated Pest Management
	Potassium, molecular formulation, fertilizer
LAILG	Los Angeles County Irrigated Lands Group
LADWP	Los Angeles Department of Water and Power
LARWQCB	Los Angeles Regional Water Quality Control Board
lb/acre	Pounds per Acre
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/L	Milligrams per Liter, parts per million
MRP	Method Reporting Limit
ng/l	Nanograms per Liter, parts per trillion
NGA	Nursery Growers Association
NOI	Notice of Intent
NPK	Nitrogen/Phosphorous/Potassium, fertilizer formulation
NTU	Nephelometric Turbidity Unit
OC	Organochlorinated
OP	Organophosphorus
	Phosphorous, molecular formulation, fertilizer
PBO	Piperonyl Butoxide
PGE	Pacific Gas and Electric
PUR	Pesticide Use Report
PW	PW Environmental
QA	Quality Assurance
QC	Quality Control
QAPP	Quality Assurance Project Plan
RLs	Reporting Limits
SCE	Southern California Edison
TDS	Total Dissolved Solids
TIE	Toxic Identification Evaluation
TSS	Total Suspended Solids
TUc	Toxicity Unit
USEPA	United States Environmental Protection Agency
WQB	Water Quality Benchmarks
WQMP	Water Quality Management Plan

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NURSERY GROWERS ASSOCIATION
LOS ANGELES COUNTY IRRIGATED LANDS GROUP

1.0 INTRODUCTION

The LARWQCB is a State of California Agency that regulates water quality within the Los Angeles Region. The Los Angeles Region includes coastal watersheds of Los Angeles and Ventura Counties, as well as very small portions of Santa Barbara, Kern and Orange Counties. The LAILG operates in the portion of the Los Angeles Region that is within the County of Los Angeles.

The LAILG has members within the Dominguez Channel LA/Long Beach Harbors WMA, the Los Angeles River Watershed, the San Gabriel River Watershed, the Santa Monica Bay WMA, and the eastern portion of the Santa Clara River Watershed. AMRs submitted by the LAILG reported runoff water quality that exceeded established WQBs. All five Watersheds and WMAs have impacted waterbodies that appear on the Federal 303(d) list, and listed contaminants include constituents that could be related to agricultural uses.

In the Los Angeles Region, irrigated crops are the dominant agricultural land use. Water quality impacts associated with agriculture can be primarily traced to discharges resulting from irrigation or storm water. These discharges typically contain pollutants that have been imported or introduced into the irrigation or storm water; in addition, irrigation practices can mobilize and or concentrate some pollutants. In order to mitigate these potentially polluted discharges from impacting the beneficial uses of water bodies within the Los Angeles Region, the LARWQCB adopted Order No. R4-2005-0080 on November 3, 2005, as mandated by state law and policy.

On October 7, 2010, the LARWQCB updated the previous Waiver for the Los Angeles Region (Order No. R4-2010-0186; Waiver). Under the new Waiver, water quality monitoring is to be continued throughout the Los Angeles Region. The goal of this program is to protect and improve water quality, and to attain water quality objectives in the receiving water bodies. As a condition of the Waiver, dischargers are required to implement monitoring programs to assess the impacts of discharges from irrigated lands. A MRP and QAPP, both dated April 7, 2011, were developed to outline the monitoring efforts and accepted methodology to collect and analyze runoff water samples in compliance with the new Waiver. This program was adopted in its previous form for four years.

A WQMP must be developed if water quality monitoring data indicates exceedances of applicable Water Quality Benchmarks as stated in the Waiver. The purpose of this WQMP is to outline specific steps with milestones that work to attain WQBs through the use of management practices.

2.0 BACKGROUND

2.1 Program History

During the previous Waiver period, samples were collected from sixteen sampling locations during each sampling event; two events were conducted during the wet season and two events were conducted during the dry season each year. The program existed in this state for the entirety of the 2007 and 2008 monitoring years, and a working WQMP was submitted to the LARWQCB on July 8, 2009. The LAILG placed the program on hold after this time due to financial constraints from growers abandoning the program and a lack of enforcement being pursued by the LARWQCB. A discussion of the suspension of the LAILG can be found in the letter from the LAILG to the LARWQCB dated August 12, 2009.

The program was reinstated briefly before the new Waiver was released, and one round of reduced sampling was conducted in March of 2011. Following the release of the new Waiver, LAILG prepared a revised MRP and QAPP to address updated requirements. The new MRP presented a reduced sampling schedule in order to offset costs associated with the lack of growers enrolling in the Waiver program. Based on exceedances detected in sampling results, an updated WQMP was required.

2.2 Current Sampling Program

As of December 2012, the LAILG was comprised of 193 sites. A regional map showing sampling locations, group boundaries, and all growers currently associated with the LAILG is presented as Figure 1. Maps displaying enrolled growers within each watershed of the LAILG region are presented as Figures 1.1 through 1.5. A complete list of the enrolled growers in the LAILG is included in Appendix A.

As outlined in the newest version of the MRP, dated April 7, 2011, LAILG collects water quality data at 20 sampling sites throughout each year. Samples are collected from sites on a rotating schedule of five sites per monitoring event, with four events taking place each year. Fourteen of the sampling locations were previously established by LAILG and the LARWQCB during Order No. R4-2005-0080, and have historical data associated with the location. Two additional sampling sites were added due to the loss of members, totaling sixteen fixed sites. Four additional revolving sites are selected randomly for sampling on a yearly basis. A summary of historical sampling locations and current sampling locations associated with the LAILG are presented on Table 1. A complete discussion of sampling methodologies can be found in the MRP, dated April 7, 2011.

Figure 1.1 Los Angeles County Irrigated Lands Group
Santa Monica Bay WMA

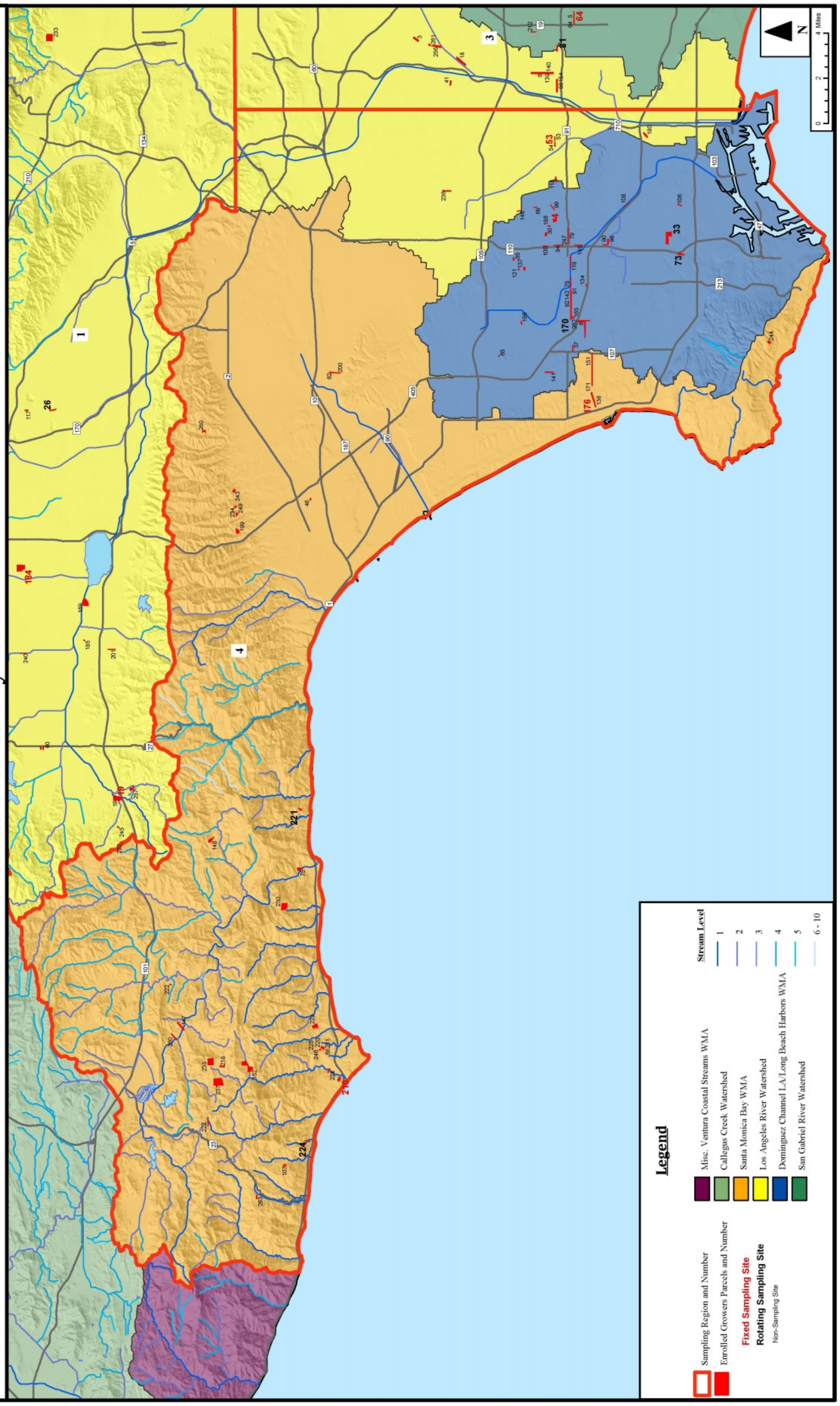
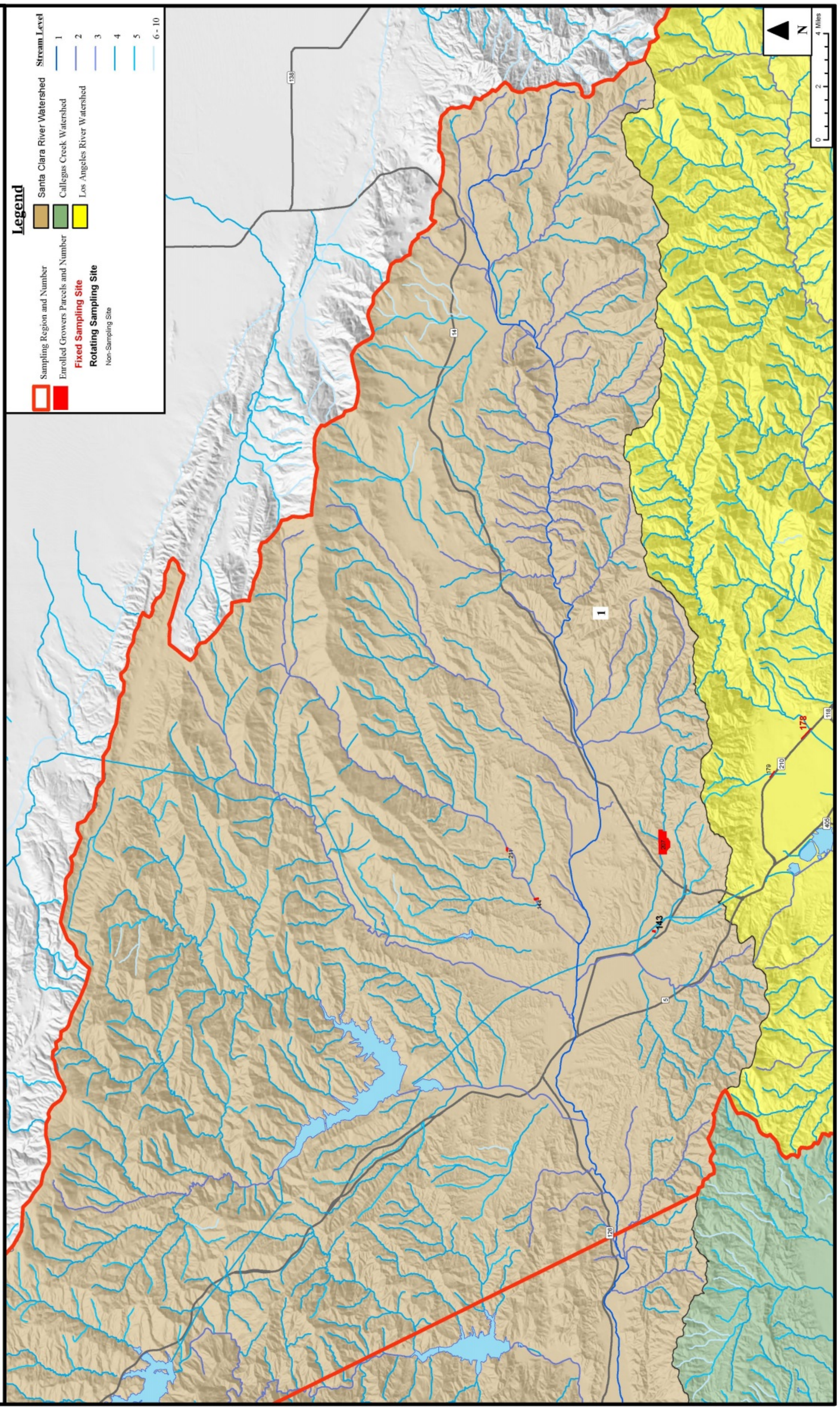


Figure 1.2 Los Angeles County Irrigated Lands Group
Santa Clara River Watershed



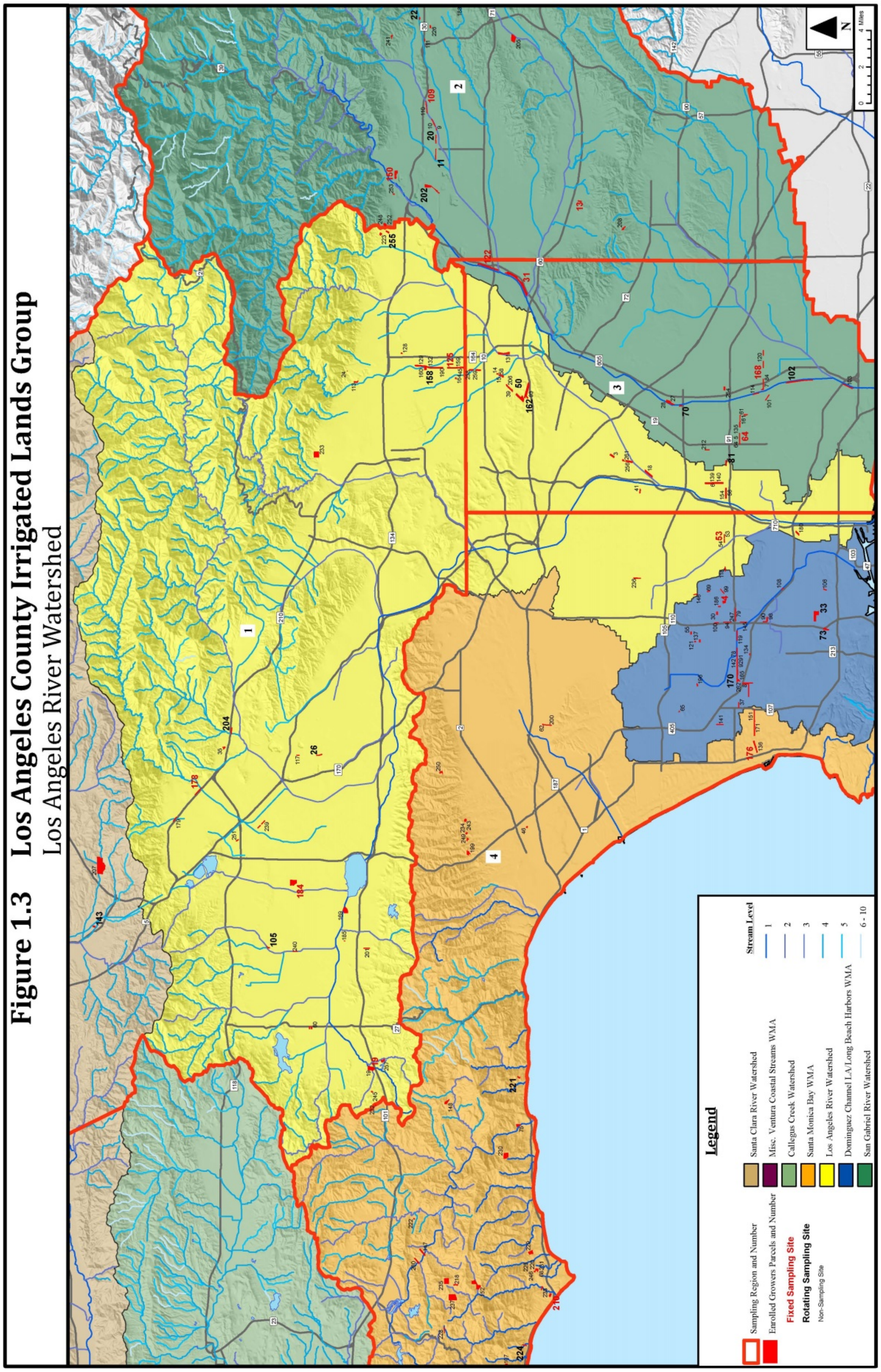


Figure 1.3 Los Angeles County Irrigated Lands Group
Los Angeles River Watershed

Figure 1.4 Los Angeles County Irrigated Lands Group
Dominguez Channel LA/Long Beach Harbors WMA

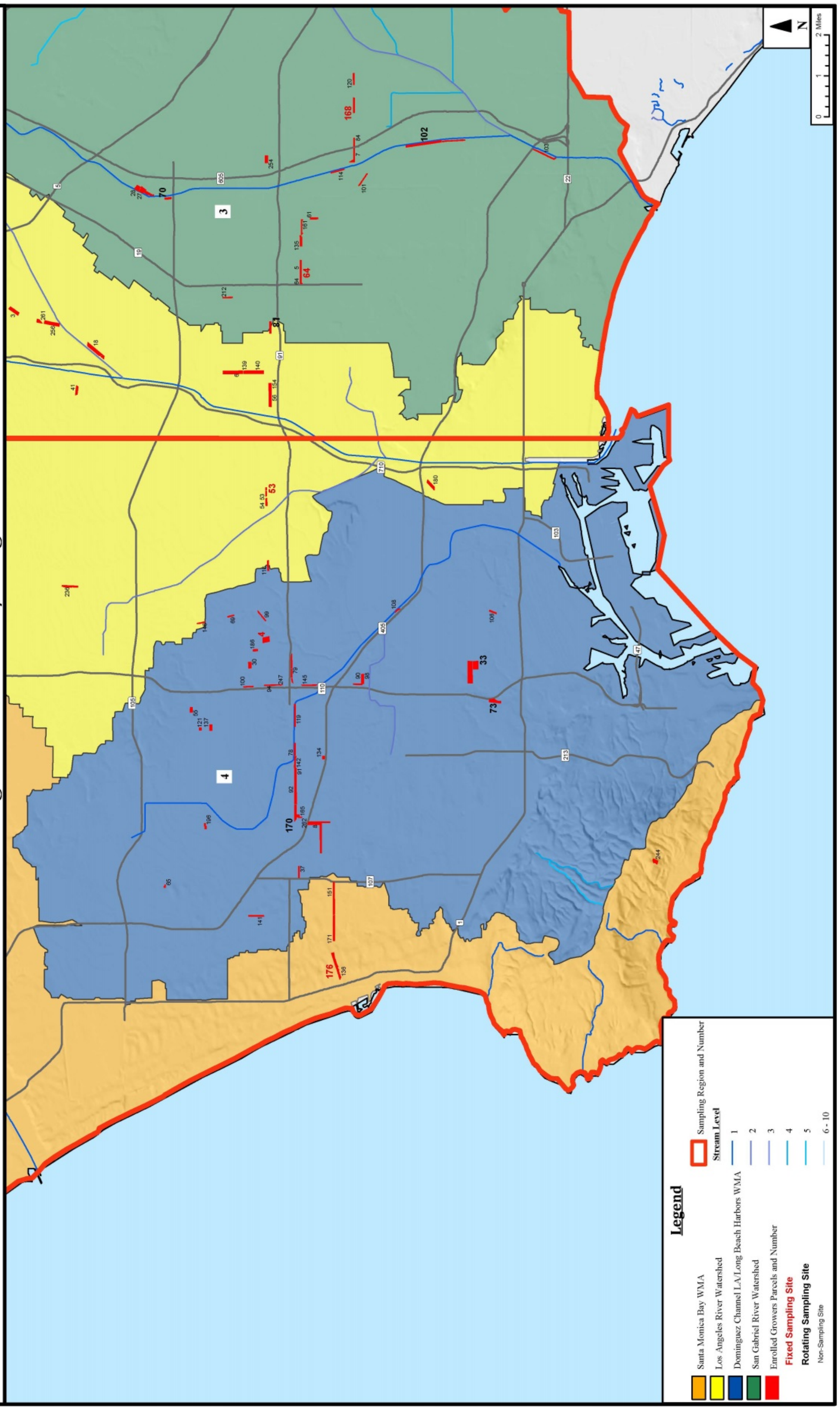


Figure 1.5 Los Angeles County Irrigated Lands Group

San Gabriel Watershed

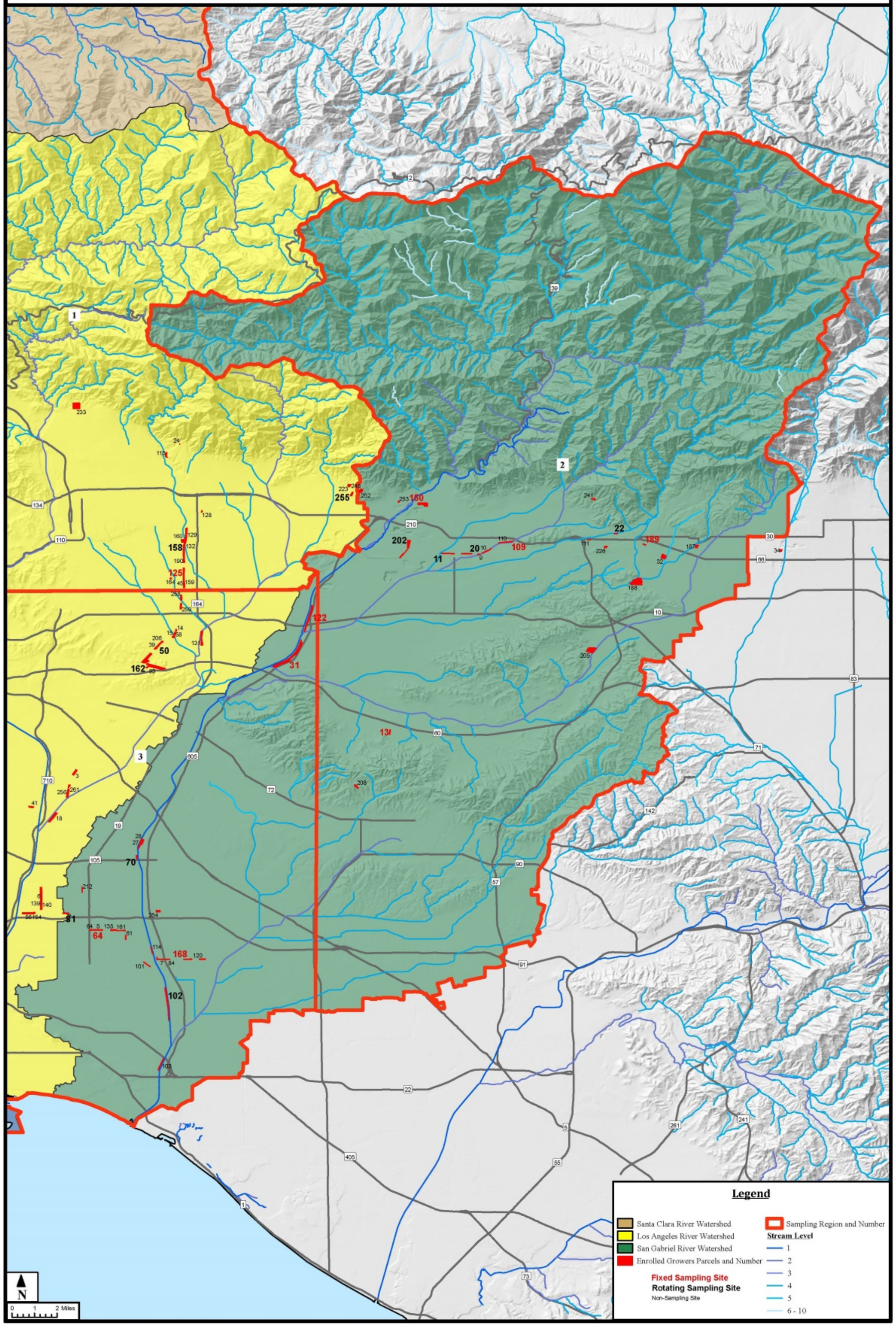


Table 1 - Fixed Sampling Locations

NAME	SITE#	APPROXIMATE GPS LOCATION	ADDRESS	ACRES IRRIGATED	CROP TYPE
GROUP 1					
Boething Treeland Farms, Inc.	19	N 34° 09' 51.1" W 118° 38' 20.7"	23475 Long Valley Road Woodsland Hills, CA	14.68	General Ornamentals
Norman's Nursery	125	N 34° 05' 42.3" W 118° 04' 53.5"	8550 E Broadway San Gabriel, CA	7.00	General Ornamentals
Ultra Greens Nursery	178	N 34° 17' 57.4" W 118° 25' 06.5"	13102 Maclay Street Sylmar, CA	8.50	General Ornamentals
Valley Sod Farms, Inc.	184	N 34° 13' 23.1" W 118° 29' 34.5"	16405 Chase Street North Hills, CA	36.00	Sod Farms
GROUP 2					
~~Acosta Growers, Inc.~~	~~13~~	~~N 33° 59' 50.9" W 117° 56' 56.9"~~	~~16412 Wedgeworth Drive Hacienda Heights, CA~~	~~4.50~~	~~General Ornamentals~~
Acosta Growers, Inc.	11	N 34° 06' 38.0" W 117° 54' 19.9"	669 S. Azusa Ave Azusa, CA	7.50	General Ornamentals
Rainbow Garden Nursery	110	N 34° 07' 05.5" W 117° 52' 19.8"	1132 S Grand Avenue Glendora, CA	3.75	Retail / Multiple
Colorama Wholesale Nursery	150	N 34° 08' 27.5" W 117° 55' 35.9"	1025 N. Todd Ave. Asuza, CA	15.30	Color Plants
West Covina Wholesale	189	N 34° 06' 58.1" W 117° 47' 05.1"	3425 Damien Ave La Verne, CA	1.25	General Ornamentals
GROUP 3					
Coiner Nursery	31	N 34° 02' 19.1" W 118° 01' 28.4"	285 San Fidel La Puente, CA	48.00	General Ornamentals
H&H Nursery	64	N 33° 52' 07.1" W 118° 08' 32.4"	6220 Lakewood Boulevard Lakewood, CA	2.50	Retail / Multiple
Centeno's Nursery and Landscaping	81	N 33° 52' 46.9" W 118° 09' 20.7"	6850 Paramount Blvd Long Beach , CA	3.00	General Ornamentals
~~Norman's Nursery~~	~~122~~	~~N 34° 04' 12.2" W 118° 00' 02.9"~~	~~12500 Ramona Blvd Baldwin Park, CA~~	~~39.93~~	~~Multiple Crop~~
SY Nursery Inc.	168	N 33° 50' 59.2" W 118° 04' 36.0"	19900 S Pioneer Blvd Cerritos, CA	4.75	General Ornamentals
GROUP 4					
ABC Nursery, Inc.	4	N 33° 52' 55.7" W 118° 16' 06.0"	424 E. Gardena Boulevard Gardina, CA	11.51	General Ornamentals
New West Growers	53	N 33° 52' 51.1" W 118° 12' 56.3"	1601 S. Santa Fe Ave Compton, CA	1.70	General Ornamentals
T-Y Nursery	176	N 33° 51' 18.7" W 118° 23' 10.9"	Between Flagler/Paulina Redondo Beach, CA	7.50	General Ornamentals
Church Estate Vineyards	210	N 34° 01' 10.0" W 118° 49' 05.6"	6415 Busch Drive Malibu, CA	2.75	Vineyard

Table 1 - Rotating Sampling Locations

NAME	SITE#	APPROXIMATE GPS LOCATION	ADDRESS	ACRES IRRIGATED	CROP TYPE
GROUP 1					
Canyon Way Nursery	26	N 34° 12' 04.9" W 118° 13' 22.3"	11745 Sherman Way Studio City, CA	4.25	General Ornamentals
Live Art Plantscapes, Inc.	105	N 34° 14' 34.3" W 118° 32' 36.1"	18809 Plummer St Northridge, CA	1.80	Greenhouse
Green Landscape Nursery	143	N 34° 23' 01.2" W 118° 31' 34.1"	22216 1/2 Placerita Canyon Rd Newhall, CA	4.00	General Ornamentals
Sakaida Nursery, Inc.	158	N 34° 06' 49.0" W 118° 04' 54.8"	8538-8601 Longden Ave San Gabriel, CA	6.89	General Ornamentals
Worldwide Exotics Inc	204	N 34° 16' 23.8" W 118° 22' 06.1"	11157 Orcas Avenue Lake Terrace, CA	2.00	General Ornamentals
GROUP 2					
~~Brothers Nursery, Inc.~~	~~20~~	~~N 34° 06' 37.9" W 117° 53' 55.8"~~	~~Cerritos & Newburgh St Azusa, CA~~	~~2.98~~	~~Multiple Crop~~
~~Brothers Nursery, Inc.~~	~~22~~	~~N 34° 7' 24.5" W 117° 48' 10.3"~~	~~Foothill Blvd and Walnut Ave San Dimas, CA~~	~~1.00~~	~~Multiple Crop~~
Coiner Nursery	32	N 34° 6' 25.9" W 117°46' 19.7"	3000 B Street La Verne, CA	15.00	General Ornamentals
West Covina Wholesale	188	N 34° 05' 38.0" W 117° 47' 31.3"	West end of Puddingstone La Verne, CA	15.25	General Ornamentals
El Nativo Growers, Inc.	202	N 34° 06' 34.8" W 117°56' 29.8"	200 S. Peckham Azusa, CA	7.00	General Ornamentals
Choji Matsushita	226	N 34° 06' 52.9" W 117°48' 41.1"	724 N. Cataract Avenue San Dimas, CA	1.70	Cutflower
Organicado	255	N 34° 08' 55.0" W 117°58' 24.4"	460 Old ranch Road Bradbury, CA	1.00	Orchard
GROUP 3					
Carreon Nursery	50	N 34° 03' 10.6" W 118° 05' 48.5"	7900 La Merced Road Rosemead, CA	6.00	General Ornamentals
Humedo Nursery	70	N 33° 55' 00.5" W 118° 06' 44.3"	10040 Imperial Highway Downey, CA	2.20	General Ornamentals
~~Jauregui Nursery, LLC~~	~~102~~	~~N 33° 49' 07.3" W 118° 05' 31.5"~~	~~7200 E. Wardlow Road Long Beach, CA~~	~~13.00~~	~~General Ornamentals~~
San Gabriel Nursery & Florist	162	N 34° 02' 27.4" W 118° 06' 20.5"	2015 Potrero Grande Monterey Park, CA	6.00	General Ornamentals
Lam Farms	212	N 33° 53' 34.5" W 118° 08' 49.9"	8600 Jefferson Street Paramount, CA	1.00	Row Crop
ABC Rhubarb Farms	261	N 33° 57' 44.0" W 118° 09' 19.3"	6208 Clara Street Bell Gardens, CA	5.00	Row Crop
GROUP 4					
Color Spot Nurseries, Inc.	33	N 33° 48' 28.6" W 118° 16' 59.9"	321 W. Sepulveda Blvd Carson, CA	18.50	Color Plants
International Plant Growers, Inc.	73	N 33° 47' 55.4" W 118° 17' 26.0"	24500 Vermont Ave Harbor City, CA	5.00	Color Plants
Toro Nursery Inc.	170	N 33° 52' 15.3" W 118° 19' 35.9"	17585 Crenshaw Blvd Torrance, CA	15.78	Color Plants
The Malibu Vineyard	221	N 34° 02' 36.5" W 118° 38' 47.5"	3222 Rambla Pacifico Malibu, CA	2.00	Vineyards
Schoelkopf Vineyard	224	N 34° 02' 19.6" W 118° 51' 36.9"	31499 Pacific Coast Hwy Malibu, CA	0.80	Vineyards

Table 1. Historical Sampling Locations

NAME	FORMER SITE#	APPROXIMATE GPS LOCATION	ADDRESS	ACRES IRRIGATED	CROP TYPE
Carlos Soto, Jr	25	N 33° 53' 07.0" W 118° 17' 05.3"	600 W. Alondra Blvd, Gardena	3.50	General Ornamentals
Norman's Nsy-Rosemead	130	N 34° 02' 03.2" W 118° 04' 10.9"	475 Rosemead Blvd, S. El Monte	16.56	Tree
Valley Crest Tree Company	182	N 34° 18' 56.7" W 118° 28' 50.3"	16202 Yarnell St. and 16222 Filbert St, Sylmar	16.00	Tree
Valley Sod Farms, Inc.	183	N 34° 10' 45.5" W 118° 30' 05.9"	6301 Balboa Boulevard, Encino	60.00	Sod

A total of 64 samples have been collected by LAILG from during the life of the program. The majority of the samples were collected during the first two years of the CWIL, prior to the suspension of the monitoring group. Samples were primarily from storm water runoff during the wet season; irrigated runoff from the dry season has not been encountered since 2008. This is in part due to a concerted effort by LAILG to educate growers on field conditions that were observed during sampling events, to eliminate dry season runoff A summary of the sample collection timeline is presented on Table 2.

Table 2. Sampling Timeline

	CWIL Order # R4-2005-0080												Total
	YEAR 1 [1]				YEAR 2 [2]				YEAR 3		YEAR 4		
	Dry Season		Wet Season		Dry Season		Wet Season		Dry Season	Wet Season	Dry Season	Wet Season	
	Event #1	Event #2	Event #1	Event #2	Event #1	Event #2	Event #1	Event #2	Event #1	Event #1	Event #1	Event #1	
Number of Samples Collected	5	3	14	8	2	1	8	11	0	ns*	0	ns*	52
Total Number of Sites Visited	16	16	16	16	14	14	18	18	18	N/A	18	N/A	164

1 Wet Season sampling events took place over five storms due to localized rain patterns and a general lack of uniform storm intensity and duration.

2 Wet Season sampling events took place during two storm days where all sites were visited.

	CWIL Order # R4-2010-0186					Total
	Interim Sampling Event [3]	YEAR 1				
		Dry Season		Wet Season		
	March 2011	Event #1	Event #2	Event #1	Event #2	
Number of Samples Collected	4	0	0	4	4	12
Total Number of Sites Visited	4	5	5	5	5	24

3 The previous CWIL (Order R4-2005-0080) was replaced on October 7, 2010 with the adoption of a new Waiver (Order R4-2010-0186). As a good faith measure, the LAILG conducted a sampling event during the wet season between the execution of the new CWIL and the required submittal date of an MRP on April 7, 2011.

LAILG analyzes for the constituents listed on Table 3.

Table 3. List of Constituents for Testing

CONSTITUENT	UNITS	FIELD/LABORATORY TEST
Flow	Cubic feet per second	Field
pH	pH units	Field
Temperature	°F	Field
Dissolved Oxygen	mg/L	Field
Turbidity	NTU	Field
Total Dissolved Solids	mg/L	Laboratory
Total Suspended Solids	mg/L	Laboratory
Hardness (as)	mg/L	Laboratory
Chloride	mg/L	Laboratory
Ammonia	mg/L	Laboratory
Nitrate-Nitrogen	mg/L	Laboratory
Phosphate	mg/L	Laboratory
Sulfate	mg/L	Laboratory
Total Copper	ng/L	Laboratory
Organophosphate	ng/L	Laboratory
Organochlorines	ng/L	Laboratory
Toxaphene	ng/L	Laboratory
Pyrethroids	ng/L	Laboratory
Toxicity		Laboratory
Trash	Observations	Field

[1] Organophosphate Suite: Bolstar, Chlorpyrifos, Demeton, Diazinon, Dichlorvos, Dimethoate, Disulfoton, Ethoprop, Fenchlorophos, Fensulfothion, Fenthion, Malathion, Merphos, Methyl Parathion, Mevinphos, Phorate, Tetrachlorvinphos, Tokuthion, Trichloronate.
[2] Organochlorine Suite: 2.4' - DDD, 2,4' - DDE, 2,4' DDT, 4,4' -DDD, 4,4' -DDE, 4,4' -DDT, Aldrin, BHC-alpha, BHC-beta, BHC-delta, BHC-gamma, Chlordane-alpha, Chlordane-gamma, Dieldrin, Endosulfan sufate, Endosulfan-I, Endosulfan-II, Endrin, Endrin Aldehyde, Endrin Ketone.

[3] Chronic Toxic Unit is the reciprocal of the sample concentration that caused no observable effect on the test organism by the end of a chronic toxicity test.

mg/l	milligrams per liter
ng/L	nanograms per liter
	degrees Fahrenheit
TUc	chronic toxic unit
NTU	nephalitic turbidity units

2.3 Current Requirements

Results from group wide sampling are reported to the LARWQB on a yearly basis. As reported in previous annual monitoring reports, a number of water quality benchmarks established by the CWIL and other regulatory programs (i.e. Aquatic Life Benchmarks) have been exceeded during the program at multiple sampling locations, which mandated the development of this WQMP.

This WQMP is designed to do the following:

- Summarize monitoring objectives and sample location
- Assess benchmark exceedances and impacts of waste discharges
- Identify likely waste sources and correlations between sampling conditions and water quality results
- Discuss existing BMPs
- Identify priority areas for BMP implementation
- Describe the BMP implementation plan, and explain methodology behind the plan and how it will improve water quality
- Develop a strategy and timeline for plan implementation, including tracking and effectiveness of the plan implementation

3.0 ASSESSMENT OF EXISTING CONDITIONS

3.1 Water Quality Benchmarks

The following tables present water quality benchmarks that apply to this program. They are derived from language included in Appendix 1 and Appendix 2 of the Waiver, along with the Water Quality Control Plan Los Angeles Region (Basin Plan) objectives, California Toxics Rule benchmarks, USEPA ALB guidelines, and CCR Title 22 maximum contamination levels for municipal water (organic chemicals).

For the purpose of analysis, benchmarks are broken into four general groups: general chemistry (including nutrients), pesticides, toxicity, and field monitoring results.

General Chemistry

General Chemistry water quality objectives for each site were obtained from the *Water Quality Control Plan, Los Angeles Region*, dated June 13, 1994. To choose the most appropriate water quality objectives for each site, all sites were assumed to drain through storm drains that ran perpendicularly to the closest blue line stream. The most relevant stream reach and related water quality objectives were chosen for each site using this assumption. Table 4 outlines the site-specific water quality objectives and associated fixed sampling sites used to evaluate general chemistry results for this report. Rotating sites are evaluated on a case-by-case basis.

Table 4. Water Quality Benchmarks, General Chemistry

Watershed/stream reach	NGA Site #	Ammonia	TDS	Sulfate	Chloride	Nitrogen	TSS	Copper (µg/L)	Phosphate
Los Angeles River:									
Between Figueroa and Willow St.	53	a)	1,500	350	150	8	–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	–
Above Figueroa St.	19, 105, 184	a)	950	300	150	8	–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	—
Rio Hondo above Santa Ana Freeway	124, 162	a)	750	300	150	8	–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	—
Pacoima Wash above Pacoima spreading grounds	178	a)	250	30	10	MUN	–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	—
San Gabriel River:									
Between Firestone Blvd. and San Gabriel River Estuary	168, 64	a)	MUN				–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	—
Between Ramona and Firestone Blvd.	13, 20, 31, 122, 189, 109	a)	750	300	150	8	–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	–
Between Morris Dam and Ramona Blvd.	150	a)	450	100	100	8	–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	—
Dominguez Channel	4, 170	a)	MUN				–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	—
Santa Monica Bay	176, 210	a)	MUN				–	CCC=0.960e$^{[(0.8545(in\ (hardness)))+(-1.702)]}$	—
USEPA Municipal Drinking Water Standard		a)	500	250	400	10	–	1.3 (mg/L)	—

* All limits are recorded for milligrams per liter (mg/L)
a) Limit varies as a factor of temperature and pH. Objectives based on corresponding field readings for WARM water (One-hour average concentration), as outlined in the Water Quality Control Plan, Los Angeles Region
MUN No site specific objectives have been established. Objectives are based on USEPA guidelines for municipal drinking water standards.
— No numeric benchmarks, water quality benchmarks shall be based on the surface water and groundwater basin objectives currently contained in the Water Quality Control Plan Los Angeles Region (Basin Plan) or other applicable water quality standards established for the Los Angeles Region.

Pesticides

Pesticide water quality objectives were taken from the Waiver, USEPA ALB guidelines, and the California Toxics Rule. Table 5 presents pesticide benchmarks outlined in the Waiver.

Table 5. Water Quality Benchmarks, Pesticides, CWIL

CONSTITUENT	UNITS	WATER QUALITY BENCHMARK
Chlordane	µg/L	0.00059
4,4' - DDT	µg/L	0.00059
4,4' - DDD	µg/L	0.00084
DDE	µg/L	0.00059
Dieldrin	µg/L	0.00014
Toxaphene	µg/L	0.00075
Chlorpyrifos	µg/L	0.025
Diazinon	µg/L	0.10

µg/L micrograms per liter

Table 6 presents ALB benchmarks for pesticides. Any pesticide that exceeded the value reported for acute invertebrates were considered a water quality exceedance for LAILG evaluation purposes. The guidelines for acute invertebrates were chosen because historically the most sensitive species n toxicity testing was Ceriodaphna dubia, a species of water flea. The CWIL does not directly cover benchmarks for these constituents, and does not specifically require ALB benchmarks to be considered as WQBs.

Table 6. Water Quality Benchmarks, Pesticides, Aquatic Life Benchmarks

Pesticides	Footnote	CAS Number	Fish		Invertebrates		Nonvascular Plants	Vascular Plants	Office of Water Aquatic Life Criteria	
			Acute 1	Chronic 2	Acute 3	Chronic 4	Acute 5	Acute 6	Maximum Concentration (CMC)	Continuous Concentration (CCC)
OP Pesticides										
Azinphos Methyl	9	86-50-0	0.18	0.055	0.080	0.036	—	—	—	—
Coumaphos	10	56-72-4	140.00	11.700	0.037	0.037	—	—	—	—
Dichlovos (DDVP)		62-73-7	79.50	5.200	0.035	0.006	14000	—	—	—
Dimethoate	9	60-51-5	3100	430	21.5	0.5	84	—	—	—
Disulfoton	9	298-04-4	19.50	4.000	1.950	0.010	—	—	—	—
Ethoprop		13194-48-4	150.00	24.000	22.000	0.800	8,400	—	—	—
Fenthion	8	55-38-9	415.00	7.500	2.600	0.013	400	> 2,800	—	—
Malathion		121-75-5	16.40	8.600	0.300	0.035	2,400	—	—	0.1
Methyl Parathion	13	298-00-0	925.00	< 10	0.490	0.250	15,000	18000	—	—
Naled		300-76-5	46.00	2.900	—	0.045	25	> 1,800	—	—
Phorate	8	298-02-2	1.18	0.340	0.300	0.210	> 1,300	—	—	—
Pyrethroid Pesticides										
Allethrin		584-79-2	9.500	—	1.05	—	—	—	—	—
Bifenthrin		82657-04-3	0.075	0.04	0.8	0.0013	—	—	—	—
Cyfluthrin		68359-37-5	0.034	0.01	0.0125	0.007	—	—	—	—
Cypermethrin		52315-07-8	0.195	0.14	0.21	0.069	—	—	—	—
Fenpropathrin (Danitol)		64257-84-7	1.100	0.091	0.265	0.064	—	—	—	—
Deltamethrin		52918-63-5	0.290	0.017	0.055	0.0041	—	—	—	—
Esfenvalerate	9	66230-04-4	0.035	0.035	0.025	0.017	—	—	—	—
Lambda-cyhalothrin		91465-08-6	0.105	0.031	0.0035	0.002	> 310	—	—	—
Pendimethalin		40487-42-1	69	6.3	140	14.5	5.2	12.5	—	—
Permethrin	16	52645-53-1	0.395	0.0515	0.01	0.0014	68	—	—	—
Prallethrin		23031-36-9	6	3	3.1	0.325	—	—	—	—
Resmethrin		10453-86-8	0.14	0.32	1.55	—	—	—	—	—
Sumithrin		26002-80-2	7.9	1.1	2.2	0.47	—	—	—	—

Limits Reported in ug/L

[8] Because the underlying toxicity value is a "greater-than" value (such as >265,000), this benchmark may overestimate toxicity.

[9] The chronic benchmark is based on the acute toxicity value (which was lower than the lowest available chronic toxicity value), and therefore may underestimate chronic

[10] Although the underlying acute toxicity value is greater than or equal to the chronic toxicity value, the acute benchmark is lower than the chronic benchmark because acute and chronic toxicity values were multiplied by LOC values of 0.5 and 1, respectively.

[13] Because the underlying toxicity value is a "less-than" value (such as <1,500), this benchmark may underestimate toxicity.

[16] Toxicity values and benchmarks apply to permethrin. If monitoring data represent only the *cis* isomer of permethrin in water, comparison with benchmarks may underestimate potential toxicity.

Toxicity

Toxicity water quality objectives were determined as outlined in the MRP and QAPP, and through communications with ABC laboratory. Because tests are run on 100% concentration of samples (no dilution water), numerical values of TUc cannot be accurately determined. Due to the lack of TUc values, a TIE was generally run on samples that exhibited a high mortality. Chronic toxicity testing was conducted for *Pimephales promelas* (fathead minnow), *Ceriodaphnia* (water flea), and *Selenastrum capricornutum* (green algae).

Adequate sample volume was collected during sampling events so that TIE procedures could be initiated as soon as possible after toxicity was observed. TIE testing was only initiated if initial testing indicated the presence of significant toxicity in the sample. For the purpose of triggering TIE procedures, significant toxicity was defined as at least 50 percent mortality or a 50 percent reduction in growth. The 50 percent threshold is consistent with the approach recommended in guidance published by the EPA for conducting TIEs, which recommends a minimum threshold of 50 percent mortality because the probability of completing a successful TIE decreases rapidly for samples with less than this level of toxicity.

Field Monitoring

For field monitoring results, the Basin Plan for the Los Angeles Region contains narrative objectives for certain chemicals, most notably: biostimulatory substances, temperature, pH, turbidity, and Total Suspended Solids. Table 7 presents field monitoring and toxicity benchmarks, as outlined in the Los Angeles Basin Plan. These narrative objectives contain verbiage stating that the natural or ambient conditions of receiving waters are not to be altered by discharges, including some of the constituents listed above. This is problematic, as natural or ambient conditions have not been established in many receiving waters, and discharges from growing operations in the urban Los Angeles Region drain primarily to storm drains. The ultimate endpoint of these storm drains are not well mapped or established, and are comingled with discharges from a number of land use types. Due to the difficulty in ascertaining the impacts to receiving waters, it is assumed in this report that discharges do not affect the receiving water bodies in a large enough magnitude to alter natural or ambient conditions.

Table 7. Water Quality Benchmarks, Field Monitoring and Toxicity

Constituent	Narrative Objective	Applicable Benchmarks
pH	The pH of inland surface water shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed by more than 0.5 pH units from natural conditions as a result of waste discharges.	6.5 ≤ pH ≤ 8.5 Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
Temperature	For water designated WARM, water temperature shall not be altered by more than 5°F above natural temperature. At no time shall WARM-designated waters be raised above 80°F as a result of water discharge	WARM: ≤ 80°F Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established
	For waters designated as COLD, water temperature shall not be altered by more than 5°F above the natural temperature.	COLD: No numeric benchmark. Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established.
Dissolved Oxygen	No single dissolved oxygen determintation shall be less than 5 mg/L, except when natural conditions cause lesser concentrations.	≥ 5 mg/L
	The dissolved owygen content of all surface waters designated as WARM shall not be depressed below 5 mg/L as a result of waste discharge.	WARM: ≥ 5 mg/L
	The dissolved owygen content of all surface waters designated as COLD and SPWN shall not be depressed below 7 mg/L as a result of waste discharge.	COLD, SPWN: ≥ 7 mg/L
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attribute to contrallable water quality factors shall not exceed the following limits: Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%. Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.	No Numeric benchmarks. Changes to ambient receiving water conditions are not assessed; "ambient" or "natural" conditions have not been established.
Toxicity	All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal or aquatic life. There shall be no chronic toxicity in smbient waters outside mixing zones.	≤ 1.0 Tuc[3]

3.2 Summary of Water Quality Benchmark Exceedances

Water quality benchmarks, as established in section 3.1, have been exceeded throughout the life of the program. For the purpose of analysis, benchmarks are broken into four general groups: general chemistry (including nutrients), pesticides, toxicity, and field monitoring. A discussion of the exceedances follows.

3.2.1 General Chemistry

Based on laboratory analytical results, general chemistry water quality benchmarks were exceeded in samples collected at 7 of the 19 sites sampled during Year 1 under Order No. R4-2005-0080, 11 of the 33 sites sampled during Year 2 under Order No. R4-2005-0080, and 5 of the 12 sites sampled during Year 1 under Order No. R4-2010-0186. Table 8 summarizes general chemistry exceedances reported throughout the life of the program. A summary of analytical results for general chemistry constituents is included for each site in Appendix B.

Total Dissolved Solids

Laboratory results reported TDS exceedances in 21 of the 64 total samples collected throughout the life of the program.

Chloride

Laboratory results reported Chloride exceedances in 5 of the 64 total samples collected throughout the life of the program.

Sulfate

Laboratory results reported Sulfate exceedances in 8 of the 64 total samples collected throughout the life of the program.

Nutrients (Nitrate/Ammonia/Phosphorus)

Laboratory results reported Nitrogen as Nitrate exceedances in 33 of the 64 total samples collected throughout the life of the program. Laboratory results reported Nitrogen as Ammonia exceedances in 4 of the 64 total samples collected throughout the life of the program. MCLs for Phosphate have not been established.

Table 8. Water Quality Exceedances, General Chemistry

Constituent	CWIL Order # R4-2005-0080												Total	% of samples
	YEAR 1				YEAR 2				YEAR 3		YEAR 4			
	Dry Season		Wet Season		Dry Season		Wet Season		Dry Season	Wet Season	Dry Season	Wet Season		
	Event #1	Event #2	Event #1	Event #2	Event #1	Event #2	Event #1	Event #2	Event #1	Event #1	Event #1	Event #1		
Ammonia	1	1	0	1	0	0	1	0	ns	ns	ns	ns	4	7.7%
TDS	4	3	5	2	1	0	2	2	ns	ns	ns	ns	19	36.5%
Sulfate	0	0	1	1	0	0	2	2	ns	ns	ns	ns	6	11.5%
Chloride	1	0	2	1	0	0	0	1	ns	ns	ns	ns	5	9.6%
Nitrogen	3	3	7	2	2	1	4	8	ns	ns	ns	ns	30	57.7%
Total Number of Exceedances	**9**	**7**	**15**	**7**	**3**	**1**	**9**	**13**	**ns**	**ns**	**ns**	**ns**	**64**	
Average # of Exceedances per sample	1.80	2.33	1.07	0.88	1.50	1.00	1.13	1.18	ns	ns	ns	ns	1.23	
Number of Samples Collected	**5**	**3**	**14**	**8**	**2**	**1**	**8**	**11**	**ns**	**ns**	**ns**	**ns**	**52**	

ns Program suspended, no sample collected

Constituents	**CWIL Order # R4-2005-0080**					**Total**	**% of samples**
	Interim Sampling	**YEAR 1**					
		Dry Season		**Wet Season**			
	March 2011	**Event #1**	**Event #2**	**Event #1**	**Event #2**		
Ammonia	0	--	--	0	0	0	0.0%
TDS	3	--	--	1	1	2	16.7%
Sulfate	0	--	--	1	1	2	16.7%
Chloride	0	--	--	0	0	0	0.0%
Nitrogen	2	--	--	2	1	3	25.0%
Total Number of Exceedances	**5**	**0**	**0**	**4**	**3**	**7**	
Average # of Exceedances per sample	1.25	--	--	1.00	0.75	0.58	
Number of Samples Collected	**4**	**0**	**0**	**4**	**4**	**12**	

-- No sample collected

3.2.2 Pesticides

Based on laboratory analytical results, pesticide water quality objectives, as outlined in Section 3.1, were exceeded in samples collected at 11 of the 19 sites sampled during Year 1 under Order No. R4-2005-0080, 25 of the 33 sites sampled during Year 2 under Order No. R4-2005-0080, and 6 of the 12 sites sampled during Year 1 under Order No. R4-2010-0186. Table 9 summarizes pesticide exceedances reported throughout the life of the program. A summary of analytical results for the analyzed pesticide constituents is included for each site in Appendix B.

OC Pesticides

Laboratory results reported the following exceedances: Chlordane in 19 of the 64 total samples collected, 4,4' DDT in 8 of the 64 total samples collected, 4,4' DDD in 9 of the 64 total samples collected, 4,4' DDE in 20 of the 64 total samples collected, Dieldrin in 1 of the 64 total samples collected, and Toxaphene in 1 of the 64 total samples collected throughout the life of the program.

OP Pesticides

Laboratory results reported the following exceedances, based on Waiver and ALB Benchmarks: Chlorpyriphos in 11 of the 64 total samples collected, Diazinon in 6 of the 64 total samples collected, and Malathion in 7 of the 64 total samples collected throughout the life of the program.

Pyrethroids

Laboratory results reported the following exceedances, based on ALB Benchmarks: Bifenthrin in 12 of the 64 total samples collected, Cyfluthrin in 18 of the 64 total samples collected, Deltamethrin in 8 of the 64 total samples collected, λ-Cyhalothrin in 12 of the 64 total samples collected, and Permethrin in 17 of the 64 total samples collected throughout the life of the program. Fenpropathrin and Fluvalinate were only included in the laboratory analytical suite during the first Waiver period. For these two pyrethroids, laboratory results reported the following exceedances, based on ALB Benchmarks: Fenpopathrin (Danitol) in 11 of the 52 total samples collected, and Fluvalinate in 7 of the 52 total samples collected.

Table 9. Water Quality Exceedances, Pesticides

Constituent	CWIL Order # R4-2005-0080												Total	% of samples
	YEAR 1				YEAR 2				YEAR 3		YEAR 4			
	Dry Season		Wet Season		Dry Season		Wet Season		Dry Season	Wet Season	Dry Season	Wet Season		
	Event #1	Event #2	Event #1	Event #2	Event #1	Event #2	Event #1	Event #2	Event #1	Event #1	Event #1	Event #1		
Waiver Limitations														
OC Pesticides														
Clordane	1	0	6	1	2	1	4	3	ns	ns	ns	ns	18	34.62%
4,4' DDT	2	2	2	1	0	0	0	0	ns	ns	ns	ns	7	13.46%
4,4' DDD	2	2	2	1	0	0	0	2	ns	ns	ns	ns	9	17.31%
4,4' DDE	2	1	5	2	0	1	2	4	ns	ns	ns	ns	17	32.69%
Dieldrin	0	0	0	0	0	0	0	0	ns	ns	ns	ns	0	0.00%
Toxaphene	0	0	0	0	0	0	0	1	ns	ns	ns	ns	1	1.92%
Waiver, OC Pesticide # of Exceedances	**7**	**5**	**15**	**5**	**2**	**2**	**6**	**10**	**0**	**0**	**0**	**0**	**52**	
OP Pesticides														
Chlorpyrifos	0	0	2	1	0	0	1	3	ns	ns	ns	ns	7	13.46%
Diazinon	0	0	2	1	1	0	0	1	ns	ns	ns	ns	5	9.62%
Waiver, OP Pesticide # of Exceedances	**0**	**0**	**4**	**2**	**1**	**0**	**1**	**4**	**0**	**0**	**0**	**0**	**12**	
Aquatic Life Guidelines														
OP Pesticides														
Malathion	0	0	1	1	1	0	0	2	ns	ns	ns	ns	5	9.62%
ALB, OP Pesticide # of Exceedances	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**5**	
Pyrethroid Pesticides														
Bifenthrin	1	2	4	0	0	0	2	3	ns	ns	ns	ns	12	23.08%
Cyfluthrin	2	1	4	2	0	0	5	4	ns	ns	ns	ns	18	34.62%
Fenpropathrin (Danitol)	1	0	3	2	1	0	2	2	ns	ns	ns	ns	11	21.15%
Fluvalinate	0	1	0	0	1	0	2	3	ns	ns	ns	ns	7	13.46%
Deltamethrin	0	0	2	2	1	0	0	2	ns	ns	ns	ns	7	13.46%
Lambda-cyhalothrin	1	0	1	1	1	0	6	2	ns	ns	ns	ns	12	23.08%
Permethrin	1	1	4	0	1	0	3	4	ns	ns	ns	ns	14	26.92%
ALB, Pyrethroid Pesticide # of Exceedances	**6**	**5**	**18**	**7**	**5**	**0**	**20**	**20**	**0**	**0**	**0**	**0**	**81**	
Total Number of Exceedances	**13**	**10**	**38**	**15**	**9**	**2**	**27**	**36**	**ns**	**ns**	**ns**	**ns**	**150**	
Average # of Exceedances per sample	2.60	3.33	2.71	1.88	4.50	2.00	3.38	3.27	ns	ns	ns	ns	2.88	
Number of Samples Collected	**5**	**3**	**14**	**8**	**2**	**1**	**8**	**11**	**ns**	**ns**	**ns**	**ns**	**52**	

ni Not included in laboratory analytical suite during this Waiver period
ns Program suspended, no sample collected

Table 9, cont. Exceedances, Pesticides

Constituents	CWIL Order # R4-2010-0186					Total	% of samples
	Interim Sampling	YEAR 1					
		Dry Season		Wet Season			
	March 2011	Event #1	Event #2	Event #1	Event #2		
Waiver Limitations							
OC Pesticides							
Clordane	1	--	--	0	0	1	8.33%
4,4' DDT	1	--	--	0	0	1	8.33%
4,4' DDD	0	--	--	0	0	0	0.00%
4,4' DDE	1	--	--	1	1	3	25.00%
Dieldrin	1	--	--	0	0	1	8.33%
Toxaphene	0	--	--	0	0	0	0.00%
Waiver, OC Pesticide # of Exceedances	**4**	**0**	**0**	**1**	**1**	**6**	
OP Pesticides							
Chlorpyrifos	3	--	--	0	1	4	33.33%
Diazinon	1	--	--	0	0	1	8.33%
Waiver, OP Pesticide # of Exceedances	**4**	**0**	**0**	**0**	**1**	**5**	
Aquatic Life Guidelines							
OP Pesticides							
Malathion	1	--	--	0	1	2	16.67%
ALB, OP Pesticide # of Exceedances	**1**	**0**	**0**	**0**	**1**	**2**	
Pyrethroid Pesticides							
Bifenthrin	0	--	--	0	0	0	0.00%
Cyfluthrin	0	--	--	0	0	0	0.00%
Fenpropathrin (Danitol)	ni	--	--	ni	ni	ni	ni
Fluvalinate	ni	--	--	ni	ni	ni	ni
Deltamethrin	0	--	--	1	0	1	8.33%
Lambda-cyhalothrin	0	--	--	0	0	0	0.00%
Permethrin	2	--	--	0	1	3	25.00%
ALB, Pyrethroid Pesticide # of Exceedances	**2**	**0**	**0**	**1**	**1**	**4**	

Total # of Exceedances	**11**	**0**	**0**	**2**	**4**	**17**
Average # of Exceedances per sample	2.75	--	--	0.50	1.00	1.42
Number of Samples Collected	**4**	**0**	**0**	**4**	**4**	**12**

ni Not included in laboratory analytical suite during this Waiver period
-- No samples collected

3.2.3 Toxicity

Based on laboratory analytical results, toxicity was significant enough to initiate a TIE in 9 of the 17 sites sampled during Year 1 under Order No. R4-2005-0080, 10 of the 26 sites sampled during Year 2 under Order No. R4-2005-0080, and 4 of the 8 sites sampled during Year 1 under Order No. R4-2010-0186.

TIE results indicated a variety of reasons for toxicity, including non-polar organic compounds, particulate-bound toxicants, volatile compounds, organophosphates, metals, and a combination of the previously listed toxicants. Comparing TIE results to laboratory data in corresponding samples did not show a correlation between pesticide results and reported toxicity, except at NGA site #4, where elevated levels of pesticides corresponded with organophosphate and particulate bound toxicity. To date, results from TIE testing have not provided significant evidence of a prevailing issue across sites, and does not appear to correlate strongly with laboratory analytical results. A historical summary of analytical results for toxicity testing is included for each site in Appendix B.

3.2.4 Field Monitoring Results

Field Monitoring Water Quality Benchmarks are based on the surface water and groundwater basin objectives currently contained in the Basin Plan or other applicable water quality standards established for the Los Angeles Region. Field monitoring readings did not exceed Basin Plan objectives at any site sampled during the Waiver Period. A historical summary of results for field measurements is included for each site in Appendix B.

4.0 EVALUATION OF LIKELY WASTE SOURCES, CONSTITUENT SPECIFIC

Each sampling site was divided into basic subgroups, and laboratory analytical results and field monitoring parameters collected thus far were compared to operational practices to evaluate if there was any correlation between data from runoff results and basic site use patterns.

4.1 General Chemistry(Including Fertilizers)

Chloride

Chloride is not applied to nursery crops in any significant quantity and the likely source of the exceedances are from the water supply. Based on Los Angeles Department of Water and Power water quality reports, treated supply water in the region contains average levels of Chloride ranging from 42 mg/L to 93 mg/L (LADWP 2010). Extended use of municipal water may concentrate Chloride in soil, as plants take up the water and leave salts behind. These salts may then be flushed off the site during irrigation or during storm events. Most sites operate on the municipal water supply system, with a few sampling sites that run on well water or recycled water. Detections of Chloride were below USEPA Municipal Drinking Water Standards.

Currently, Chloride is not considered a primary constituent of concern for the program due to its widespread presence in drinking water and the relatively few exceedances observed. As Chloride is a dissolved ion, any BMPs addressed towards this constituent would involve minimizing site runoff, lowering water use at sites in order to minimize the accumulation in soils, utilizing a source of water that is lower in Chloride concentrations, or treating the water prior to application with a filtering or osmosis system.

Sulfate

Sulfate can be found in both fertilizers and pesticides, and has been reported to be applied as ammonium sulfate and magnesium sulfate at a number of sites. Generally speaking, application of fertilizers containing sulfate are lower in frequency than the primary Nitrogen-Phosphorous-Potassium fertilizers that are applied. Sulfate is also present in the water supply. Based on Los Angeles Department of Water and Power water quality reports, treated supply water in the region contains average levels of Sulfate ranging from 33 mg/L to 230 mg/L (LADWP 2010). The current recommended USEPA Municipal Drinking Water Standards is 250 mg/L of sulfate, and the secondary MCL in California for drinking water is 500 mg/L. Extended use of municipal water and overuse of fertilizers or pesticides containing sulfate may concentrate Sulfate in soil, as plants take up the water and leave salts behind. These salts may then be flushed off the site during irrigation or during storm events. Most sites operate on the municipal water supply system, with a few sampling sites that run on well water or recycled water.

Currently, Sulfide is not considered a primary constituent of concern for the program due to its widespread presence in drinking water and the relatively few exceedances observed. As Sulfate is a dissolved ion, any BMPs addressed towards this constituent would involve minimizing site runoff, decreasing the use of sulfate containing materials, lowering water use at sites in order to minimize the accumulation in soils, utilizing a source of water that is lower in Sulfate concentrations, or treating the water prior to application or discharge with a filtering or purification system.

Nutrients (Nitrate/Ammonia/Phosphorus)

Both primary sources of Nitrogen can be found in different types of fertilizers, and are widely applied in both dry, liquid, organic, and inorganic forms. Nitrogen as nitrate and nitrite is also present in low levels in the municipal water supply. Overuse of nitrogen may leach any unused nitrogen out of the primary growing mediums, where is can concentrate in surface soils at a site. Applying Nitrogen prior to a rain event may also leach directly from the potting mediums before it can be absorbed by plants, causing the nitrogen to leave the site in surface water runoff. Nitrogen poses a potential threat to groundwater, as it can leach through surface soils and impact underlying aquifers.

Elevated levels of nitrogen in both surface and ground water pose a number of threats to both human health and the environment. When present in surface waters in higher concentrations, it may lead to excessive aquatic plant growth, which subsequently leads to lower levels of dissolved oxygen, which may impact aquatic organisms. Nitrogen in the form of ammonia-nitrogen has also been shown to be toxic to aquatic life. Nitrogen that has leached to the groundwater may pose an eventual drinking water risk. Nitrite levels reduce the ability of white blood cells to carry oxygen, and elevated levels in drinking water have been linked to “blue-baby syndrome” in infants.

Phosphate can be found in different types of fertilizers, and is widely applied in both dry, liquid, organic, and inorganic forms. Although MCLs have not currently been established for phosphate, phosphate is often the limiting nutrient in aquatic environments. Excess phosphate entering surface waters can lead to algal blooms and excessive plant growth, which subsequently leads to lower levels of dissolved oxygen. This may cause eutrophication, which has a number of biological and aesthetic impacts.

Fertilizer application practices between sites varied considerably, with most sites applying fertilizers through a combination of practices. Fertilizer was reported to be applied primarily as topdress at five of the sites, as a combination of irrigation water and soil and/or topdress at five of the sites, and as a combination of soil incorporation and topdress at six of the sites. The only site to use a general broadcast method of fertilizer are the two sod farms sampled. The vineyard sampled primarily applied fertilizer in irrigation water, with a small percentage coming from topdress, when required. LAILG did not receive information regarding fertilizer application practices at two of the sites where sample have been collected. The majority of sampling sites reported primary fertilizer application type rather than a percentage breakdown of all application types used, and thus only primary application methods were evaluated.

Fertilizer use for both dry and liquid fertilizer was converted to dry pounds used per acre per year for each nutrient at each site that reported the NPK values for their fertilizer use. The NPK values report nitrogen as an elemental value, but phosphorus and potassium are reported as their oxides, which are P_2O_5 and KO_2, respectively. Values for all of the fertilizers in both soil and irrigation water had to be converted to their elemental values for comparison purposes, utilizing the following formulas:

Dry Fertilizer Used

$$Total\ N = F \times \%N$$
$$Total\ P = F \times \%P \times 0.436$$
$$Total\ K = F \times \%K \times 0.83$$

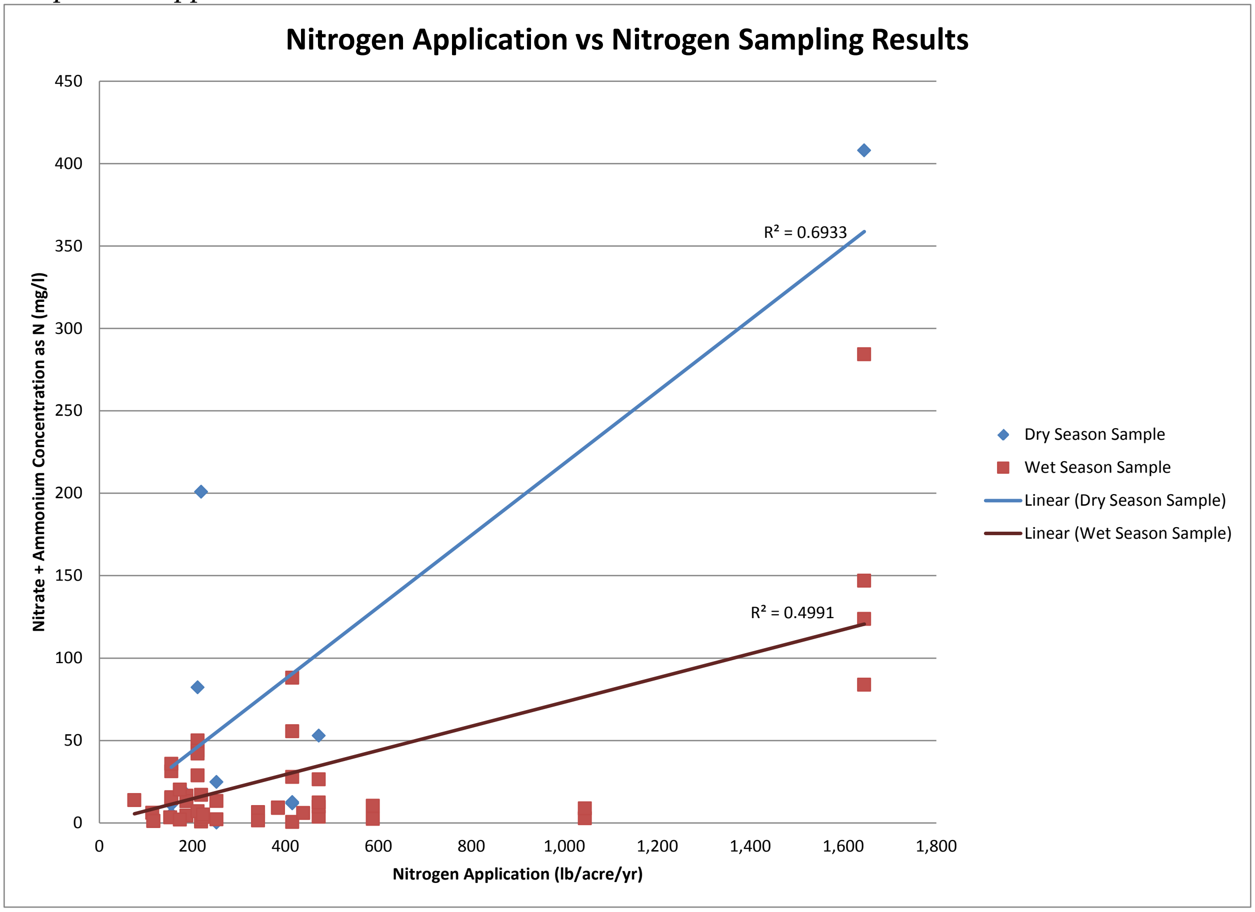
Liquid Fertilizer Used

$$Total\ N = L \times D \times \%N$$
$$Total\ P = L \times D \times \%P \times 0.436$$
$$Total\ K = L \times D \times \%K \times 0.83$$

$F = Dry\ Fertilizer\ Applied\ (lbs)$
$\%\ N\ P\ K = Percent\ Reported\ in\ Fertilizer\ Applied$
$L = Liquid\ Fertilizer\ Applied\ (gal)$
$D = Density\ of\ Liquid\ \left(\frac{lb}{gal}\right), assumed\ to\ be\ 11.65$

To evaluate any correlation between the intensity of fertilizer use at site and concentrations of nutrients in samples collected from sites, total Nitrogen (ammonia, nitrate, and nitrite as N) application rates were plotted versus sampling results from the corresponding sample location. Fertilizer application data was used from the period of January 2011 to March 2012. A simple linear regression analysis was performed on the results. The raw data used for this analysis is included in Appendix C, and results are presented on Graph 1.

Graph 1. N Application v N Detected



Based on sampling results and reported fertilizer use, there appears to be a correlation between nitrogen application rates and reported concentrations in sampling results. With the intercept set at 0 (no nitrogen application equals no nitrogen runoff), the coefficient of determination (value) was reported at 0.69 for samples collected during irrigation events, and was reported at 0.50 for samples collected during storm events. This indicates that for irrigation samples, 69 percent of the variation in the y-axis (N Concentrations) is due to variation in the x-axis (fertilizer use), and for stormwater samples, 50 percent of the variation in the y-axis (N Concentrations) is due variation in the x-axis (fertilizer use). This does not imply that the two are directly related, but makes a relatively strong case that they may be. This trend will be monitored continually throughout the life of the program.

Currently, Nitrogen is considered a primary constituent of concern for the program, and phosphate is considered a secondary contaminant of concern. BMPs addressed towards Nitrogen, and all compounds associated with fertilization, would focus on either source BMPs, such as reducing or optimizing fertilizer use and application, or runoff BMPs. Runoff BMPs can include vegetative filter strips, reducing or eliminating runoff, and ground cover of the areas.

TDS

TDS is the measurement of minerals, salts, metals, cations, and anions dissolved in water. This is essentially everything present in the sample other than pure water molecules and suspended solids. It includes a number of constituents that are monitored during this program and are applied at agricultural areas, along with other minerals and salts that are not analyzed. Generally speaking, it is a broad based measurement of water quality, or purity. TDS is also present in the water supply. Based on Los Angeles Department of Water and Power water quality reports, treated supply water in the region contains average levels of TDS ranging from 226 mg/L to 590 mg/L (LADWP 2010). The current recommended USEPA Municipal Drinking Water Standards is 500 mg/L. Based on the levels reported by the Los Angeles Department of Water and Power water quality reports, pure tap water would exceed Water Quality Benchmarks in the Los Angeles Basin Plan.

Extended use of municipal water and overuse of fertilizers or pesticides may concentrate dissolvable solids in soil, as plants take up the water and leave unused minerals and salts behind. These dissolvable solids may then be flushed off the site during irrigation or during storm events. Most sites operate on the municipal water supply system, with a few sampling sites that run on well water or recycled water.

Currently, TDS is not considered a primary constituent of concern for the program due to its widespread presence in the supply water. Examples of BMPs addressed towards this constituent could involve minimizing site runoff, minimizing the application of chemicals at a site, minimizing site erosion, lowering water use at sites in order to minimize the accumulation in soils, utilizing a source of water that is lower in TDS concentrations, and treating the water prior to application or discharge with a filtering or purification system.

4.2 Pesticides

LAILG evaluated PURs for each current sampling site for the period of January 1, 2011 through March 31, 2012 (15 months). Historical data was utilized for sites that had samples previously collected, but were no longer enrolled as a sampling site for the program. From this point forward in the document, the term “chemicals” will refer to pesticides/miticides/fungicides/herbicides reported on PURs. Chemicals listed for each individual site were cross-referenced to the active ingredient, and compared to the list of laboratory analytical compounds included in the program, as outlined in the QAPP for the group. Data on the physical properties and the environmental persistence of pesticides was referenced from various databases located on-line.

Many applied chemicals had different trade names, but utilized the same active ingredient. The active ingredients used at each site were then correlated to laboratory analytical data collected during sampling events. Although chemical use, amounts applied, and size of area treated for each site was presented in the PURs, the actual application point on each property was not specified. Generally speaking, chemicals were used on sections of each nursery, and were not applied across the whole site. As runoff generally only stemmed from a portion of each nursery, it is not possible to tell if chemicals were applied in that general area or exact spot. For this reason, the chemical use pattern was evaluated as if chemicals were applied universally throughout the property, even though universal application was not generally utilized. Currently there is not a publically available database to evaluate pesticide use in the Los Angeles Region, and the evaluation of the specific amount of pesticides applied and where exactly they are applied on each property is too robust of a dataset to evaluate on a regional, or even site-by-site, basis.

The frequency of chemical application and the number of chemicals used varied significantly between sites. The number of separate applications of any chemical reported on PURs as being used for the 15-month reporting period ranged from 0 to 486. A total of 137 different chemicals were reported as being used throughout all the sampling sites, although some chemicals utilize the same active ingredient. A summary of chemical use patterns obtained from individual PURs at each sampling site are included in Appendix D.

The majority of chemicals reported on PURs were not included in the laboratory analytical program outlined in the CWIL. Of the 137 different applied chemicals, nine active ingredients were included in the laboratory analytical program of the new CWIL: six Pyrethroid pesticides (bifenthrin, cyfluthrin, deltamethrin, λ-cyhalothrin pendimethalin, and permethrin) and three organophosphorus pesticides (chlorpyrifos, diazinon, and malathion). Seven of the nine pesticides were reported in at least one sample collected from the group in samples collected from the same period as the pesticide use reports (January 2011 – March 2012). Legacy Pesticides such as DDT and derivatives and Chlordane and derivatives were also detected during this period. The EPA has banned all these pesticides from use. In addition, the laboratory reported detections of cypermethrin, dichloran, and prallethrin in trace amounts. As these compounds were not reported as being used on PURs and were detected at low levels, they are most likely from past applications or transfers between growing yards.

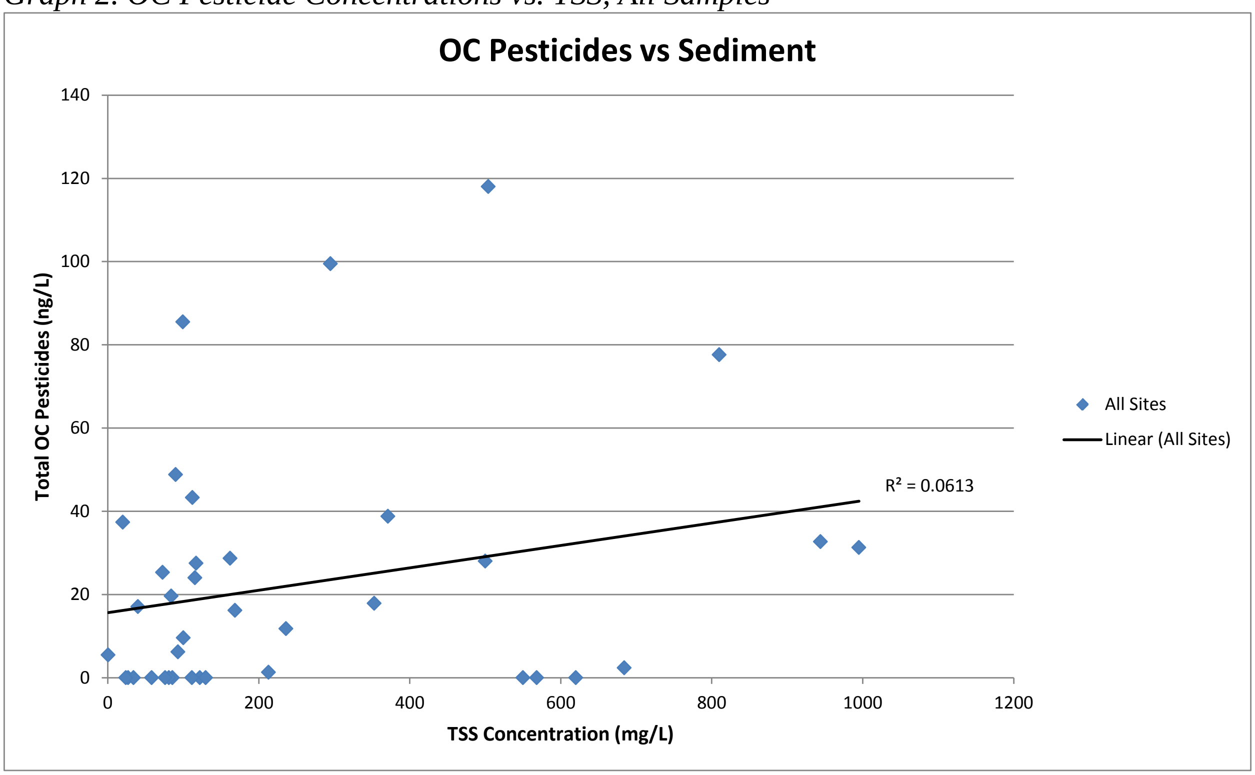
LAILG evaluated PURs from individual sampling sites for possible correlation between the PURs and individual site exceedances. PURs for every site enrolled within the LAILG are not readily available, making any extrapolation of results and BMP effectiveness from individual sampling sites to the entire group as a whole difficult. Pesticide use varied month to month within each site, and only a small fraction of compounds used at sites are included in the laboratory analytical program. PURs are also limiting in the fact that while they report the amount of pesticide utilized each month, they do not present the exact areas that growers apply the pesticides, making individual site evaluation difficult. Currently, the County of Los Angeles Agricultural Commissioner does not maintain a comprehensive database with usable statistics on geographical locations of applied pesticides. Due to these obstacles and the number of variables to consider when evaluating pesticide use, evaluating pesticide application data from PURs does not appear to be feasible throughout the group as a whole. Instead, a general plan for the inclusion of pesticide BMPs, regardless of site use patterns, throughout the group appears to be more practical.

OC Pesticides

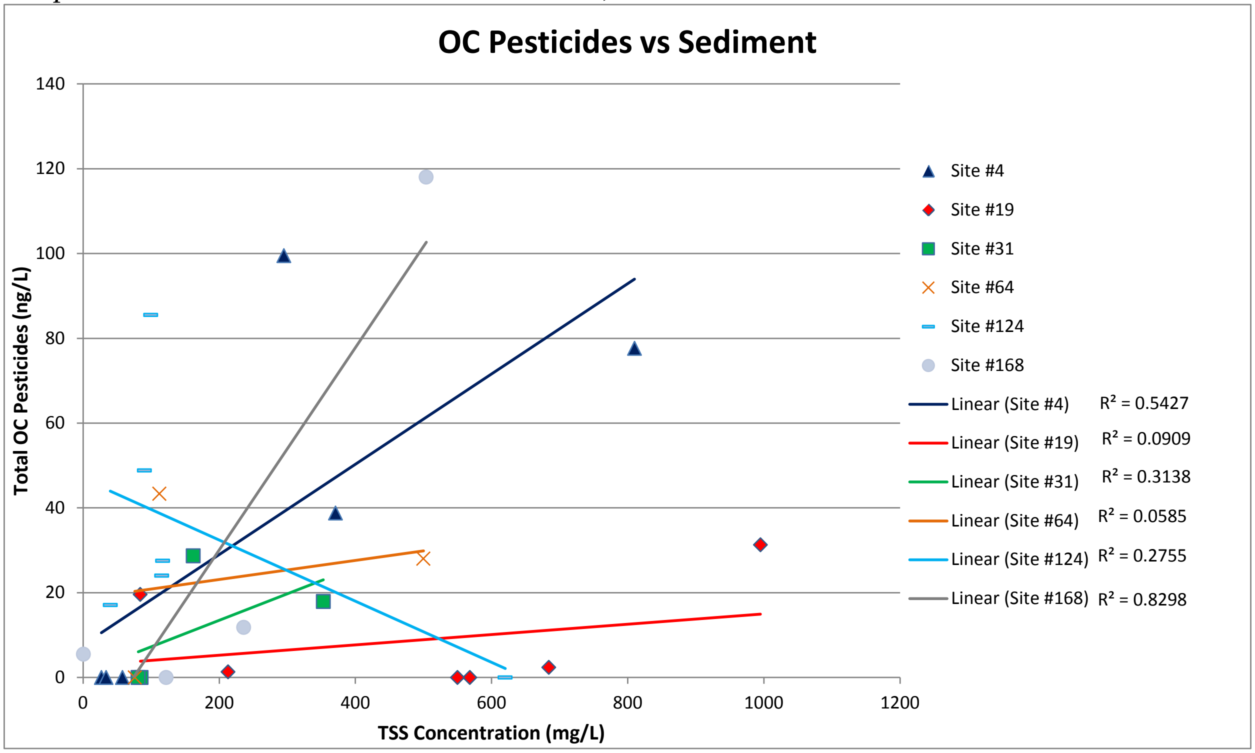
OC Pesticides, such as DDT and Chlordane, have been banned for any use since 1972 and 1988, respectively. Both of these compounds have elevated half-lives; DDT has been shown to have a half-life of up to 30 years, and chlordane has been shown to be persistent for over 20 years. Both substances bioaccumulate, and have earned the term "legacy pesticides" due to their persistence in the environment. All exceedances of banned legacy pesticides originated from previous land uses.

The legacy pesticide compounds have a very low solubility in water, and a high adsorption coefficient to soils. These characteristics indicate that exceedances due to Legacy Pesticides stem from soil particles with the compounds attached to them leaving the site. As such, sites that historically used these pesticides and had relatively high reported values of TSS and turbidity from site erosion were anticipated to have the largest potential to transport these compounds off site. Laboratory analytical results for OC pesticides were compared to values of turbidity and TSS in concurrent samples (Graphs 2 and 3) to evaluate if there was a preliminary correlation between the two reported values. It is not known if there were historical applications of the legacy pesticides at each location, so results were only included for sites that had reported concentrations of OC pesticides in at least one runoff sample. To date there has not been a significant correlation between the sets of data, although regressive trend lines show a positive correlation, albeit somewhat weakly, at most sites. This trend will be tracked in future sampling events.

Graph 2. OC Pesticide Concentrations vs. TSS, All Samples



Graph 3. OC Pesticide Concentrations vs. TSS, Individual Sites



All of the remaining OC pesticides, such as aldrin, dieldrin, dicofol, and toxaphene, were only detected sparsely throughout the group. Aldrin and dieldrin were banned from most uses in 1987, and are no longer produced in the United States. Toxaphene was banned for most uses in 1982, and all registered uses in 1990. These chemicals are similar in physical properties to DDT and Chlordane, in that they break down slowly, are persistent in the environment, bind tightly to soil, and tend to bioaccumulate. BMPs directed towards reducing DDT and Chlordane detected in site runoff should reduce detections of these contaminants.

Currently, legacy pesticides are considered a primary constituent of concern for the program due to their widespread prevalence in the environment and continual detections in runoff from parcels enrolled in the program. Since none of the reported OC pesticides are still used at sampling sites in the group, BMPs will be addressed solely towards runoff water from the sites. As the OC Pesticides are primarily fixed to sediment and organic matter, reducing sediment loads from sites should also reduce OC Pesticide exceedances. Examples of BMPs addressed towards the reduction of sediment loads include: minimizing site runoff; minimizing the speed of water in channels through barriers, riffles, vegetation, etc.; minimizing site erosion through the use of stabilization plants or materials on bare ground; utilizing filtering materials or sediment reducing materials (polyacrylamides) in waterways; installing settling ponds or catch basins, when practical; and protecting stockpiled materials.

OP Pesticides

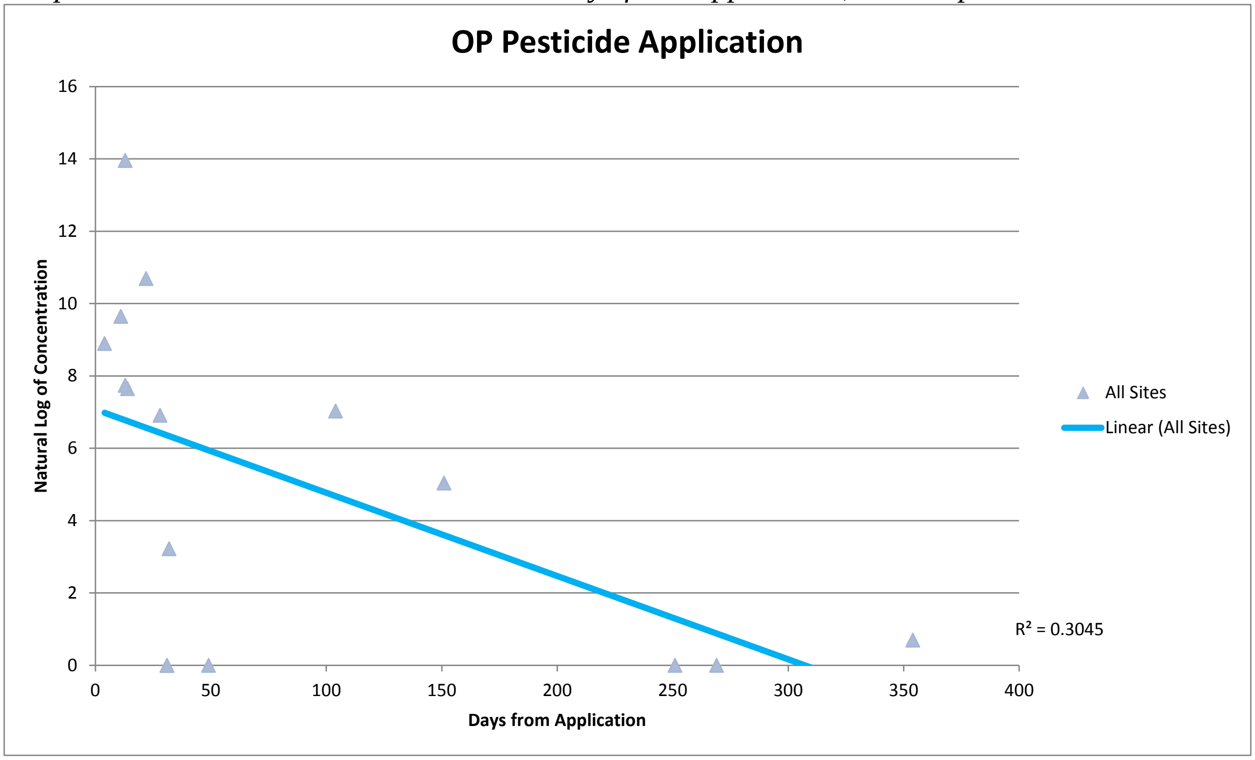
After the banning of a large number of OC pesticides, OP Pesticides generally begin to replace the OC Pesticides for agricultural use in the US. OP Pesticides cover a large group of chemically different pesticides with different physiochemical properties. Most are only slightly soluble in water, and break down to water-soluble byproducts through hydrolysis. They have an affinity to attach to soil particles and organic matter. They are less environmentally persistent than the OC pesticides due to their ability to biodegrade and be broken down by photolysis and chemical hydrolysis. However, they are more acutely toxic than the OC Pesticides, and can pose environmental risks to aquatic organisms if they enter waterways.

OP pesticides of concern detected in runoff samples were chlorpyrifos, diazinon, and malathion. All three of these pesticides reported detections during both Waiver periods. According to PURs, chlorpyrifos was applied at three sites, diazinon was applied at one site, and malathion was applied at seven sites during the first waiver period. During the second waiver period, chlorpyrifos was applied at three sites, diazinon was applied at one site, and malathion was applied at two sites.

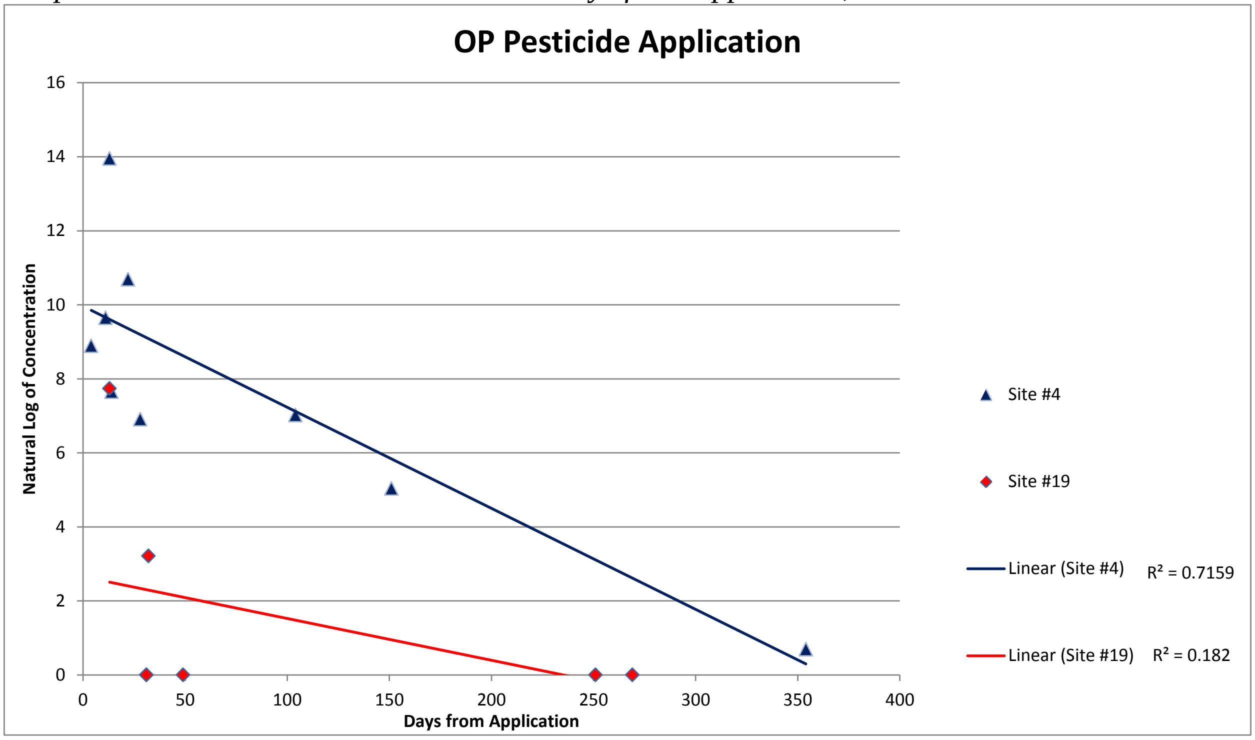
Both diazinon and chlorpyrifos have a medium to low solubility in water, and have average half-lives ranging from 14 to 28 days and 60 to 120 days in soil, respectively, depending on soil conditions and light availability (Extoxnet). Malathion is soluble in water, and has an average half-life of 1 to 25 days in soil and less than a week in water. All three compounds are reported to have a low bioaccumulation potential, but exhibit a high toxicity to aquatic organisms. In general these compounds have a higher runoff potential than pyrethroid pesticides, as they can be transported in water easier due to their high solubility and can also be transported in soil.

Only two sampling sites had a robust enough data set to compare days from reported OP pesticide applications and laboratory analytical results reported in runoff. Graph 4 plots detected concentrations for all OP pesticides in stormwater samples and the accumulated days since the last application date at all sites, and Graph 5 presents the data on a site by site basis. Laboratory analytical results were transformed to the natural log values to flatten out the graphical presentation. Raw data used for the graphical presentation is presented in Appendix C.

Graph 4. OP Pesticide Concentrations vs. Days from Application, All Samples



Graph 5. OP Pesticide Concentrations vs. Days from Application, Individual Sites



Evaluations of PURs for all combined sites only show a weak correlation between application times and laboratory analytical results for OP pesticides (Graph 4). Breaking down the data to individual sites indicates a stronger coefficient of determination between application times and laboratory analytical results at one of the sampling sites (= 0.72) with sufficient data (Graph 5), and all sites showed a downward trend. LAILG will continue to evaluate future data to determine if such a relationship exists throughout the group.

OP pesticides are a primary constituent of concern for the program due to their toxicity to aquatic and some mammalian organisms. BMPs to address exceedances are both source control and runoff control, as growers still utilize a number of these pesticides. Source control BMPs mainly involve the timing and proper application of the OP pesticides, along with eliminating their use where possible. As OC pesticides are also fixed to sediment and organic matter, reducing sediment loads from sites will also reduce OC pesticide exceedances. Examples of BMPs addressed towards the reduction of sediment loads include: minimizing site runoff; minimizing the speed of water in channels through barriers, riffles, vegetation, etc.; minimizing site erosion through the use of stabilization plants or materials on bare ground; utilizing filtering materials or sediment reducing materials (polyacrylamides) in waterways; installing settling ponds or catch basins, when practical; and protecting stockpiled materials.

Pyrethroid Pesticides

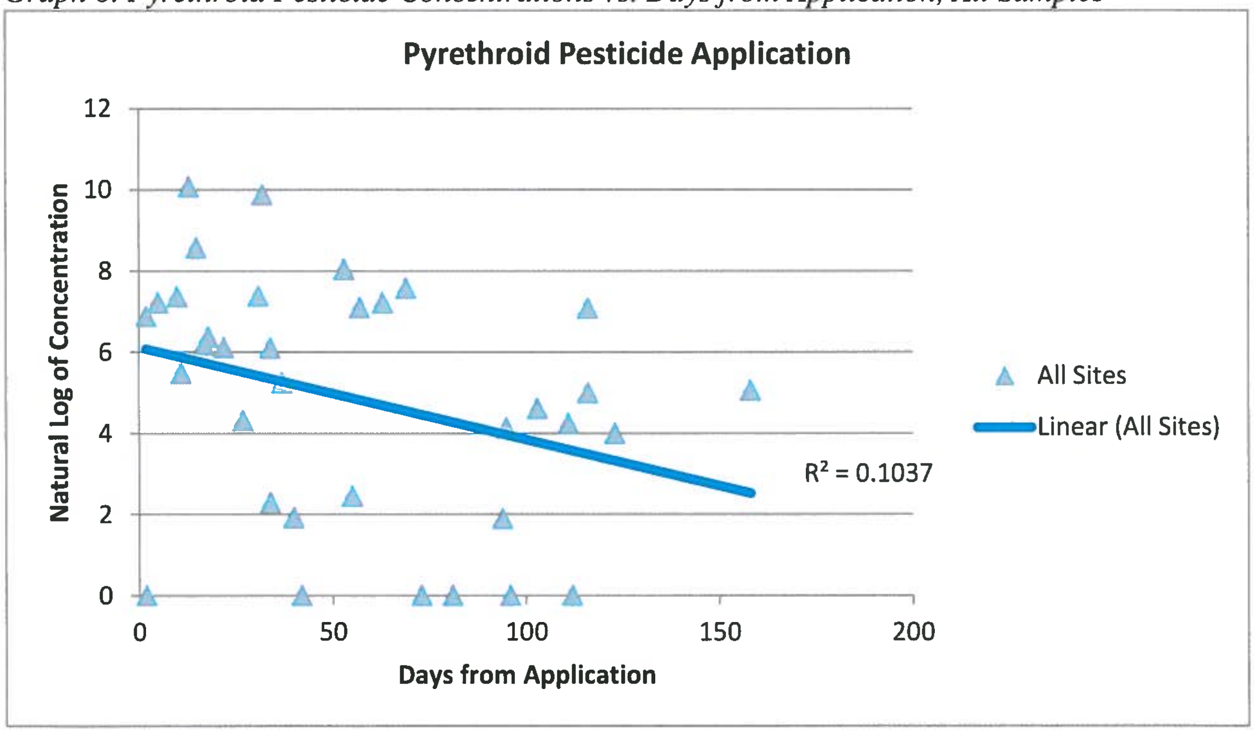
The use of pyrethroid pesticides has generally increased during the last decade, due to the decline of the use of OP pesticides, which are more acutely toxic to birds and mammals. As a whole they are considered safe to most vertebrates, as they are broken down in the body through enzymatic activity. They are highly toxic to invertebrates and aquatic organisms, but are not environmentally persistent and have short half-lives in natural conditions. Pyrethroids are marketed for use in households, as mosquito vector control, and in agriculture, and can be found in products such as Raid and in certain pet sprays and shampoos.

Pyrethroid pesticides detected in runoff samples were deltamethrin, cyfluthrin, fluvalinate, permethrin, λ-cyhalothrin, bifenthrin, and danitol. In addition, cypermethrin and prallethrin were detected in trace amounts once each; these pesticides were not reported as being used on any PURs. According to PURs, the following active ingredients were applied: deltamethrin at three sites, cyfluthrin at six sites, fluvalinate at four sites, permethrin at two sites, λ-cyhalothrin at three sites, bifenthrin at six sites, and danitol at four sites during the first waiver period. During the second waiver period, the following active ingredients were applied: deltamethrin at one site, cyfluthrin at three sites, permethrin at one site, λ-cyhalothrin at one site, bifenthrin at three sites, and pendimethlin at one site during.

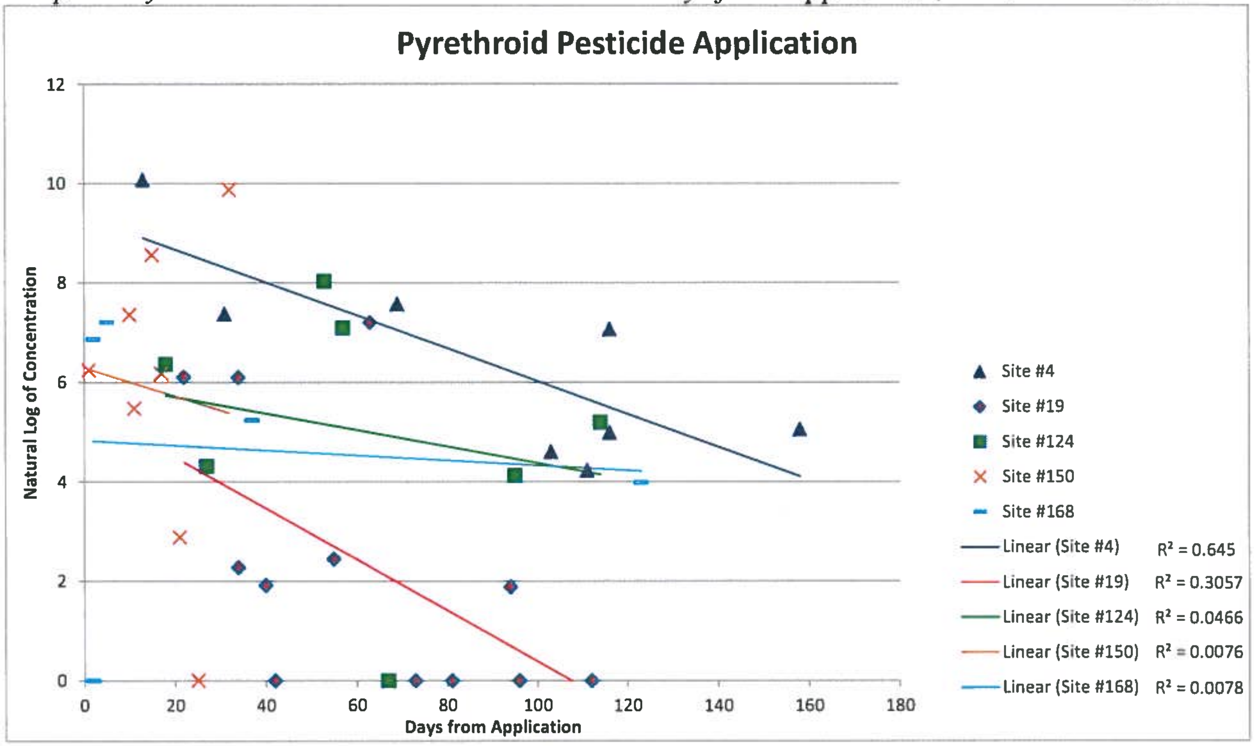
Pyrethroid pesticides as a group all have very low to no solubility in water, and have short half-lives. The majority of Pyrethroid pesticides have half-lives in the order of days to weeks, although under certain conditions may have half-lives up to eight months. Pyrethroids have a high adsorption coefficient to soils. All compounds have been reported to have a low bioaccumulation potential, but exhibit high to very high toxicity to aquatic organisms. As Pyrethroid pesticides have not been shown to have a definite chronic effect on mammals and are relatively non-persistent in the environment, their high acute toxicity to aquatic organisms is the largest concern as they have the potential to adversely affect aquatic ecosystems.

Graph 6 plots detected concentrations for all Pyrethroid pesticides in stormwater samples and the accumulated days since the last application date at all sites, and Graph 7 presents the data on a site by site basis. Laboratory analytical results were transformed to the natural log values to flatten out the graphical presentation. Raw data used for the graphical presentation is presented in Appendix C.

Graph 6. Pyrethroid Pesticide Concentrations vs. Days from Application, All Samples



Graph 7. Pyrethroid Pesticide Concentrations vs. Days from Application, Individual Sites



Evaluations of PURs for all combined sites only show a weak correlation between application times and laboratory analytical results for Pyrethroid pesticides (Graph 6). Breaking down the data to individual sites indicates a stronger coefficient of determination between application times and laboratory analytical results at one of the sampling sites ($r^2 = 0.65$) with sufficient data (Graph 7), and all sites showed a downward trend. LAILG will continue to evaluate future data to determine if such a relationship exists throughout the group.

Several Pyrethroid pesticides have been detected at relatively high levels at sites that did not report them as being used on PURs. Currently the source of these pesticides are unknown, and additional evaluation will be conducted over the course of the program to evaluate if the compounds are associated with a source other than historical pesticide application. It is likely that the transportation of plants between nurseries is contributing to this phenomenon.

Pyrethroid Pesticides are a primary constituent of concern for the program due to their acute toxicity to aquatic organisms. BMPs to address exceedances are both source control and runoff control, as growers still utilize a number of these pesticides. Source control BMPs mainly involve the timing and proper application of the Pyrethroid Pesticides, along with eliminating and reducing their use where possible. As Pyrethroid Pesticides are also fixed to sediment and organic matter, reducing sediment loads from sites should also reduce OC Pesticide exceedances in runoff. Examples of BMPs addressed towards the reduction of sediment loads include: minimizing site runoff; minimizing the speed of water in channels through barriers, riffles, vegetation, etc.; minimizing site erosion through the use of stabilization plants or materials on bare ground; utilizing filtering materials or sediment reducing materials (polyacrylamides) in waterways; installing settling ponds or catch basins, when practical; and protecting stockpiled materials.

4.3 Toxicity

TIE testing that was performed for runoff at sampling sites revealed that non-polar organics were the major source of toxicity. Non-polar organics are a class of chemical compounds that include a large number of constituents that are not covered under the laboratory testing program outlined in the CWIL, in addition to the OP, OC, and Pyrethroid pesticides. PBO addition did not reduce toxicity in samples, indicating that OP compounds did not contribute to the toxicity. However, the addition of PBO has been shown to increase the toxicity of Pyrethroid compounds (Wheeler, et. al.), which could alter results. Currently the cause of non-polar organic toxicity at sites is unknown, although Pyrethroid pesticides are suspected due to their documented high toxicity to aquatic organisms.

4.4 Field Monitoring Results

Instantaneous flow rates of runoff water during recorded irrigation and rain events varied greatly depending on individual site settings, storm intensity at the time of sampling, and the duration of the storm prior to sampling. Irrigation runoff was not consistent throughout the group, and has not been encountered since the first year of the program. This was anticipated from the beginning of the program, since it is not cost effective for growers to over water when utilizing municipal water.

Storm water runoff was encountered at least once at each of the 21 sample sites visited throughout the life of the program. The duration of storm water runoff time was not widely observed, but a number of sites could only be sampled if it was consistently raining and the ground had previously been saturated. Runoff rates varied considerably at each site and between sampling sites depending on weather conditions, and are not evaluated in this report.

Flow rates and field readings indicate that runoff water will not adversely affect the pH, temperature, or dissolved oxygen of receiving surface water from any of the sites sampled in the group. All three parameters were within acceptable ranges as outlined in the Basin Plan.

Although field readings of turbidity and TSS were relatively high in some collected samples, the relatively low flows of runoff in comparison to the watershed as a whole do not appear to be great enough to potentially impact receiving waters after dilution in storm drains. However, a goal of reducing turbidity and TSS has been set for the group as part of the WQMP, as particulate matter can also carry constituents of concern off the sites.

Historical field measurements of estimated irrigation and storm water flow rates leaving individual sampling sites are included in Appendix B.

5.0 EVALUATION OF GROUPING ATTRIBUTES VS EXCEEDANCES

5.1 General Methodology

LAILG collected the following information from sampling sites to evaluate growing practices verses sampling results in collected samples: water use; fertilizer use, in both amounts and formulations; pesticide use (from PURs); total owner acreage, including acreage outside of the Los Angeles Region; plant material transfer information, including shipping between facilities, to northern California, and out of state; the presence or absence of mandatory spray programs; and generalized information on company gross sales. Information on water use, fertilizer use, and pesticide use was normalized to values per acre per year for continuity across the group.

LAILG utilized grower information to evaluate the potential impact of operations based on their growing “intensity,” or how much material (fertilizer, pesticides, irrigation water, etc.) is used on a per acre basis. The general hypothesis of the LAILG is that larger operations, based on sales, total company size, and shipping patterns, would show more intense fertilizer and pesticide use patterns. This level of intensity could correspond to a higher risk of contaminants leaving the property.

5.2 Grouping Methodology

In order to separate sampling sites into groups, LAILG applied a matrix to sampling sites that utilized the following information: sales, acreage, and shipping information.

LAILG utilized the total operator acreage, including acreage both inside and outside LA County and California. Larger growers tend to implement similar growing practices throughout their corporation, regardless of the size of the plot. Thus, a small, 5-acre plot of land operated by a nation-wide company will have different growing practices that a 5-acre plot of land operated by a local only supplier.

LAILG utilized the gross sales for an operator, company-wide. Generally speaking, large-scale growers are held to a higher production standard for a higher quality product. They also tend to ship and grow more products on a tighter production schedule. This leads to a more intensive use of fertilizers, pesticides, herbicides, and fungicides.

Shipping patterns were the final input. Growers that ship both to Northern California and out of California are subject to different pest spraying protocol, and have the potential for a higher use of pesticides and other chemicals. Growers that ship between their own growing locations have the potential to transfer pesticides and fertilizers between locations. This phenomenon has been shown in laboratory analytical results, where pesticides that were not applied on a property were detected in stormwater runoff.

The matrix used to separate sites into large, medium, and small intensity growers is presented on Table 10.

Table 10. Grouping Results

WQMP No.	Operating Acres	Weight 2	Gross Revenue	Weight 2	Shipping Reach	Total Score	Group Number	
1	4	8	4	8	3	19	1	
2	4	8	4	8	3	19	1	
3	4	8	4	8	3	19	1	
4	4	8	4	8	3	19	1	Large
5	4	8	4	8	2	18	1	
6	3	6	4	8	2	16	1	
7	4	8	4	8	1	17	1	
8	3	6	3	6	3	15	1	
9	4	8	3	6	0	14	2	
10	4	8	3	6	0	14	2	Medium
11	2	4	3	6	1	11	2	
12	2	4	2	4	2	10	2	
13	1	2	2	4	1	7	3	
14	1	2	2	4	1	7	3	Small
15	1	2	2	4	1	7	3	
16	0	0	2	4	0	4	3	

	Total Operating Acres		Gross Revenue		Shipping Reach
0	≤ 5 Acres	0	≤ $50k		(cumulative)
1	5 < Acres ≤ 20	1	$50k < $ ≤ $200k	1	Intra company
2	20 < Acres ≤ 50	2	$200k < $ ≤ $1M	1	Northern California
3	50 < Acres ≤ 100	3	$1M < $ ≤ $5M	1	Interstate
4	Acres > 100	4	$ >$5M		

Each sampling site that reported information was given a unique WQMP identification number, separate from their original NGA identification number, to protect the anonymity of their responses. It is LAILG's stance that preserving the anonymity of growers responses to the grouping questions in publically available documents, especially in regards to company gross revenue, will foster a more accurate and complete collection of data across the group. LAILG will maintain a private database that links growers to their respective WQMP and NGA identification numbers.

Currently, growers that scored a 15 to 19 were considered large operations, growers that scored a 10 to 14 were considered medium operations, and growers that scored a 9 or below were considered small operations. This grouping methodology will be continually evaluated as information from the entire group is obtained.

None of the sampling sites are from very small, low revenue growers. It is anticipated that there will be a number of growers that will score a 0 or 1 on the above matrix, and could warrant a "micro" operation subgroup in the future. LAILG will remain in contact with the LARWQCB in regards to this future grouping, and should it appear warranted, will consider shifting or adding sampling sites in the future to obtain water quality data from sites that are grouped into this, or any future, category.

5.3 Grouping Results, Application Intensity

LAILG utilized the self-reported information outlined in Section 5.1 to evaluate growing practices for sampling sites operating within the group. Sampling sites were organized according to the scoring matrix above, and the self-reported values for each group were evaluated. Graphical results of the application rates for nutrients and pesticides, along with basic statistical data, is presented below.

5.3.1 Nutrients Applied

For nutrients, LAILG looked at the total pounds of each specific element applied and the pounds per acre of each element at all sampling sites that reported information. Historical data was utilized, when available. The pounds of each element were determined from fertilizer formulation and total pounds applied, as discussed in Section 4.1.

The data was averaged for each nutrient application characteristic for each size group, and was normalized to a percentage of the maximum value present throughout all of the collected data to present the graph on a single axis. For example, a y-axis results of 30 percent means that the average value for that group was 30 percent of the maximum value reported in all collected information. The normalized group averages are compared in Graph 8, and basic raw statistical data used for this graph and general evaluation purposes is presented on Table 11.

Graph 8. Grouping, Nutrient Application Intensity

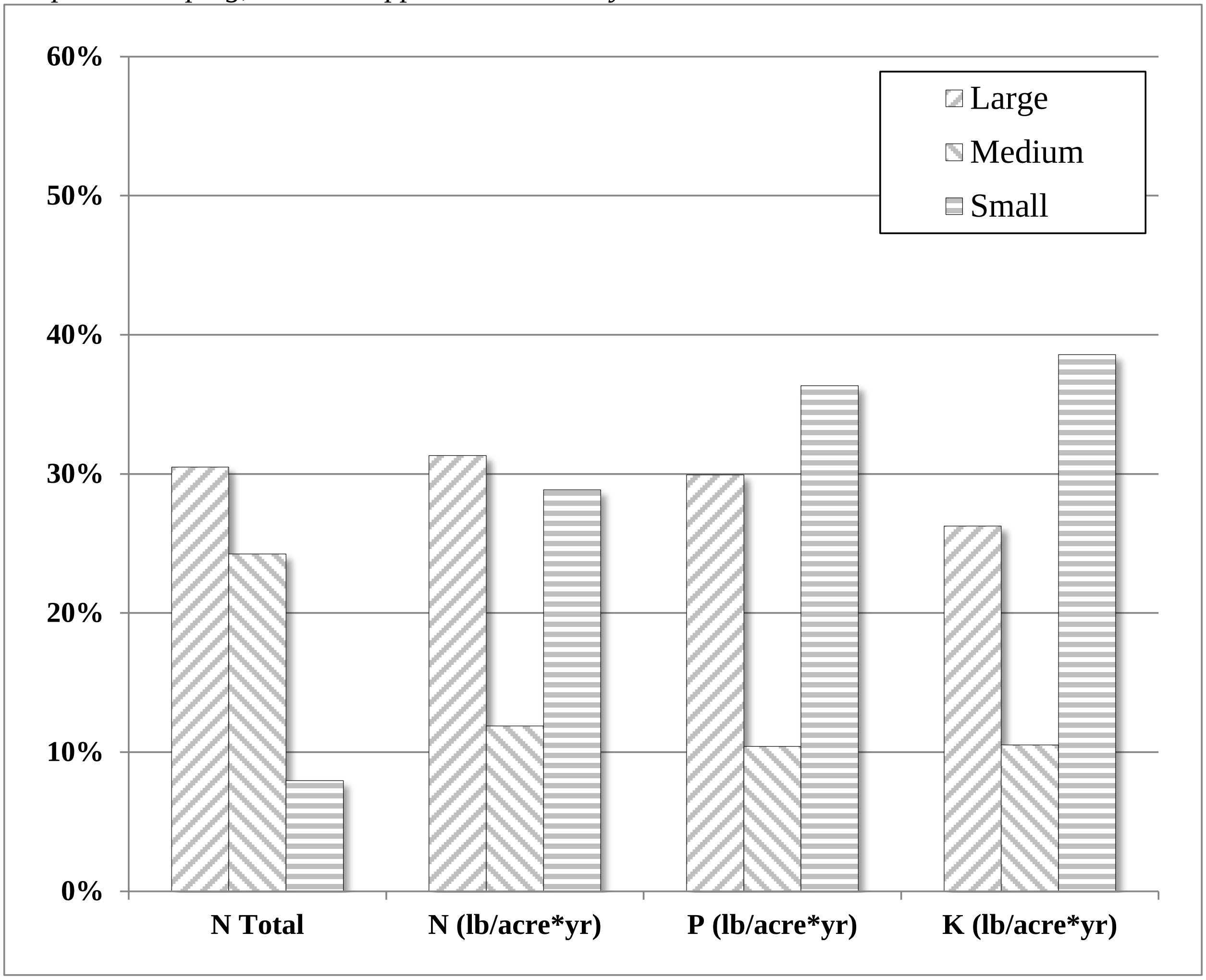


Table 11. Grouping Statistics, Nutrients Applied

All Sites

N Total (lb/year)		N (lbs/Year/Acre)		P (lbs/Year/Acre)		K (lbs/Year/Acre)	
Mean	5864.44	Mean	425.18	Mean	65.06	Mean	194.70
Standard Error	1738.45	Standard Error	99.88	Standard Error	17.25	Standard Error	57.91
Median	2755.00	Median	296.70	Median	39.14	Median	126.56
Standard Deviation	6953.80	Standard Deviation	399.52	Standard Deviation	69.01	Standard Deviation	231.63
Sample Variance	48355290.40	Sample Variance	159612.98	Sample Variance	4762.05	Sample Variance	53650.76
Kurtosis	2.93	Kurtosis	5.67	Kurtosis	3.26	Kurtosis	3.97
Skewness	1.76	Skewness	2.30	Skewness	2.00	Skewness	2.19
Range	24656.00	Range	1569.71	Range	234.89	Range	781.70
Minimum	515.00	Minimum	75.29	Minimum	9.11	Minimum	18.42
Maximum	25171.00	Maximum	1645.00	Maximum	244.00	Maximum	800.12
Count	16.00	Count	16.00	Count	16.00	Count	16.00
Confidence Level(95.0%)	3705.42	Confidence Level(95.0%)	212.89	Confidence Level(95.0%)	37.35	Confidence Level(95.0%)	123.38

Group 1

N Total (lb/year)		N (lbs/Year/Acre)		P (lbs/Year/Acre)		K (lbs/Year/Acre)	
Mean	7675.13	Mean	515.22	Mean	73.04	Mean	198.36
Standard Error	2948.74	Standard Error	168.94	Standard Error	25.91	Standard Error	78.59
Median	4485.00	Median	399.45	Median	47.64	Median	124.32
Standard Deviation	8340.29	Standard Deviation	477.85	Standard Deviation	73.29	Standard Deviation	222.29
Sample Variance	69560377.27	Sample Variance	228336.89	Sample Variance	5371.23	Sample Variance	49413.99
Kurtosis	2.23	Kurtosis	6.00	Kurtosis	5.43	Kurtosis	6.73
Skewness	1.60	Skewness	2.36	Skewness	2.27	Skewness	2.53
Range	24436.00	Range	1457.66	Range	218.62	Range	676.52
Minimum	735.00	Minimum	187.34	Minimum	25.38	Minimum	56.89
Maximum	25171.00	Maximum	1645.00	Maximum	244.00	Maximum	733.41
Count	8.00	Count	8.00	Count	8.00	Count	8.00
Confidence Level(95.0%)	6972.65	Confidence Level(95.0%)	399.45	Confidence Level(95.0%)	61.35	Confidence Level(95.0%)	185.69

Group 2

N Total (lb/year)		N (lbs/Year/Acre)		P (lbs/Year/Acre)		K (lbs/Year/Acre)	
Mean	6102.50	Mean	195.53	Mean	25.45	Mean	79.53
Standard Error	3477.30	Standard Error	24.95	Standard Error	6.22	Standard Error	30.39
Median	4387.50	Median	188.87	Median	27.85	Median	80.35
Standard Deviation	6954.60	Standard Deviation	49.90	Standard Deviation	12.45	Standard Deviation	60.78
Sample Variance	48366475.00	Sample Variance	2490.20	Sample Variance	154.97	Sample Variance	3694.65
Kurtosis	-1.49	Kurtosis	-4.37	Kurtosis	-0.68	Kurtosis	-5.26
Skewness	0.82	Skewness	0.28	Skewness	-0.83	Skewness	-0.03
Range	14605.00	Range	99.63	Range	27.89	Range	120.58
Minimum	515.00	Minimum	152.37	Minimum	9.11	Minimum	18.42
Maximum	15120.00	Maximum	252.00	Maximum	37.00	Maximum	139.00
Count	4.00	Count	4.00	Count	4.00	Count	4.00
Confidence Level(95.0%)	11066.32	Confidence Level(95.0%)	79.46	Confidence Level(95.0%)	19.85	Confidence Level(95.0%)	96.83

Group 3

N Total (lb/year)		N (lbs/Year/Acre)		P (lbs/Year/Acre)		K (lbs/Year/Acre)	
Mean	2005.00	Mean	474.76	Mean	88.71	Mean	302.55
Standard Error	778.40	Standard Error	204.68	Standard Error	45.04	Standard Error	170.31
Median	1732.50	Median	389.87	Median	62.82	Median	189.42
Standard Deviation	1556.80	Standard Deviation	409.36	Standard Deviation	90.08	Standard Deviation	340.63
Sample Variance	2423616.67	Sample Variance	167572.99	Sample Variance	8115.09	Sample Variance	116028.17
Kurtosis	-2.83	Kurtosis	2.02	Kurtosis	2.05	Kurtosis	3.12
Skewness	0.54	Skewness	1.15	Skewness	1.42	Skewness	1.68
Range	3275.00	Range	968.71	Range	204.35	Range	768.87
Minimum	640.00	Minimum	75.29	Minimum	12.42	Minimum	31.25
Maximum	3915.00	Maximum	1044.00	Maximum	216.77	Maximum	800.12
Count	4.00	Count	4.00	Count	4.00	Count	4.00
Confidence Level(95.0%)	2477.21	Confidence Level(95.0%)	651.62	Confidence Level(95.0%)	156.30	Confidence Level(95.0%)	542.00

General Analysis

Currently, members grouped into large operations apply the most Nitrogen (and fertilizer in general) on a per site basis, and are higher than the medium operations on a pounds per acre basis. Preliminary results indicate that the small operation group apply more fertilizer on a per acre basis, however, this is due to one outlying nursery that applied much more than anyone else in the small grouping. This applicator has a retail nursery on the property, which could account for the higher nutrient use due to a quicker turnaround of plants at the property. As there are currently only four growers grouped into this category, this greatly skewed the average higher. LAILG anticipates that as more data comes in group-wide, these numbers will begin to flatten out, and will show large operators as a higher fertilizer intensity group in comparison with small and medium operations.

Statistical Analysis

Data acquired from the sampling sites showed a large spread of nutrient use throughout LAILG as a whole and within each of the groups, as is indicated by the large (sometimes above the mean) standard deviations for each of the analyses and the large variances in the minimum and maximum applied. The high standard errors also indicate that the sample sizes are too small at this point to state that the statistical means from the analyses are completely accurate. The collection of additional data throughout the group, as discussed in Section 6.0, should provide a larger dataset for analyzing growing practices group wide, to determine if the current grouping methodology is appropriate.

The skewness and kurtosis for both the sampling group as a whole and each separate size group indicate that the data, as currently collected, is neither distributed symmetrically or Gaussian in nature. It is currently unknown if the data will approach a normal distribution once information is collected from the group as a whole.

5.3.2 Pesticides Applied

In order to evaluate the general intensity of chemical uses at properties, LAILG looked at the number of separate application of any chemicals at a property during a fifteen month time period. This analysis does not take into account the volume or mass of chemicals applied, as this data is not readily available through any government agency in a usable format, and would be impractical to tabulate and analyze on a group wide basis. Tracking the number of pesticide applications at each member’s parcel is a more reasonable alternative, and should give an acceptable, although generalized, snapshot of chemical use intensity throughout the LAILG.

The data was averaged for each chemical application characteristic for each size group, and was normalized to a percentage of the maximum value present throughout all of the collected data to present the graph on a single axis. For example, a y-axis results of 40 percent means that the average value for that group was 40 percent of the maximum value reported in all collected information. Data from historical sampling sites was not utilized, as 15-months of PURs were not available for analysis. The normalized group averages are compared in Graph 9, and basic raw statistical data used for this graph and general evaluation purposes is presented on Table 12.

Graph 9. Grouping, Pesticide Application Intensity

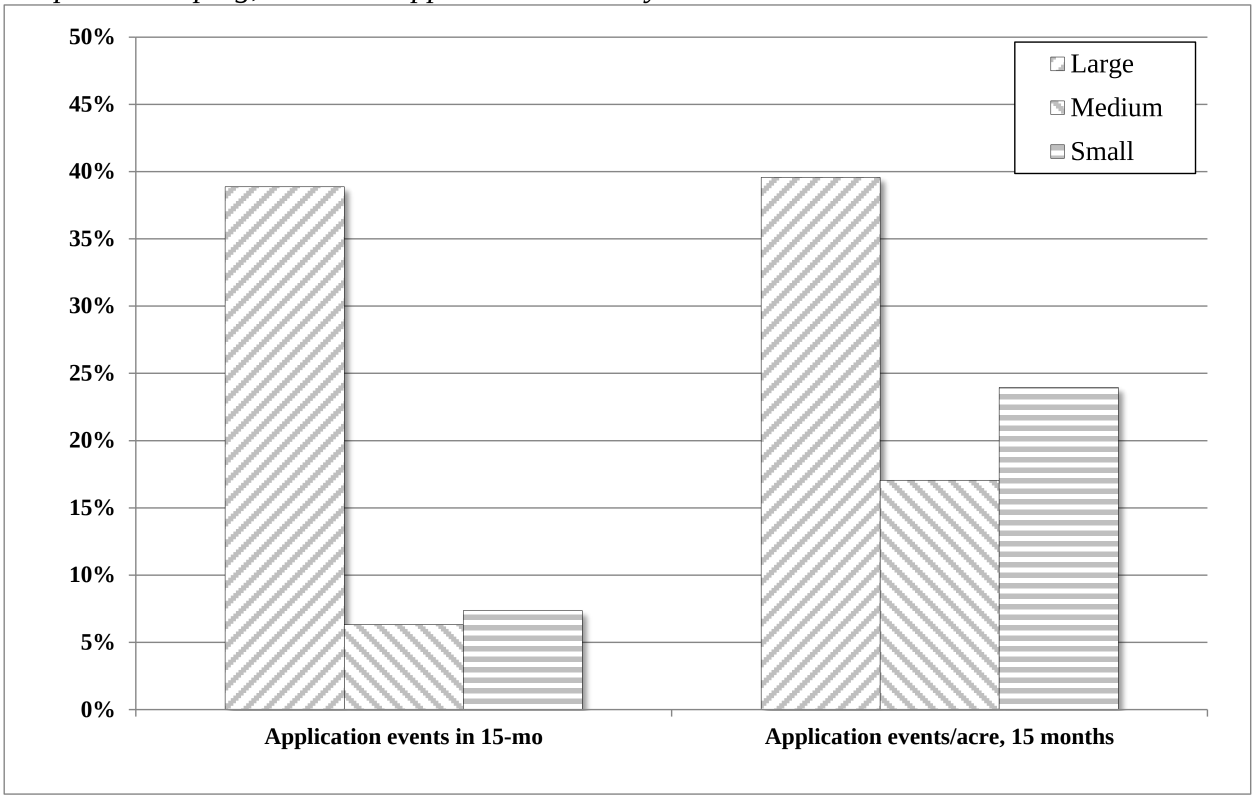


Table 12. Grouping Statistics, Pesticides Applied

All Sites

Application Events 15 month period		*Application Events/Acre 15 month period*	
Mean	96.31	Mean	9.11
Standard Error	37.63	Standard Error	2.47
Median	54.00	Median	9.00
Standard Deviation	135.67	Standard Deviation	8.91
Sample Variance	18405.40	Sample Variance	79.32
Kurtosis	5.79	Kurtosis	2.39
Skewness	2.34	Skewness	1.35
Range	486.00	Range	31.76
Minimum	0.00	Minimum	0.00
Maximum	486.00	Maximum	31.76
Count	13.00	Count	13.00
Confidence Level(95.0%)	76.37	Confidence Level(95.0%)	5.12

Group 1

Application Events 15 month period		*Application Events/Acre 15 month period*	
Mean	174.67	Mean	12.28
Standard Error	70.73	Standard Error	4.74
Median	119.00	Median	11.89
Standard Deviation	173.26	Standard Deviation	11.62
Sample Variance	30019.87	Sample Variance	134.99
Kurtosis	1.90	Kurtosis	0.75
Skewness	1.37	Skewness	0.82
Range	486.00	Range	31.76
Minimum	0.00	Minimum	0.00
Maximum	486.00	Maximum	31.76
Count	6.00	Count	6.00
Confidence Level(95.0%)	181.83	Confidence Level(95.0%)	12.19

Group 2

Application Events 15 month period		*Application Events/Acre 15 month period*	
Mean	26.66667	Mean	5.1933
Standard Error	15.16941	Standard Error	3.5062
Median	12	Median	3.25
Standard Deviation	26.2742	Standard Deviation	6.0729
Sample Variance	690.3333	Sample Variance	36.88
Kurtosis	#DIV/0!	Kurtosis	#DIV/0!
Skewness	1.729229	Skewness	1.2926
Range	46	Range	11.67
Minimum	11	Minimum	0.33
Maximum	57	Maximum	12
Count	3	Count	3
Confidence Level(95.0%)	65.26872	Confidence Level(95.0%)	15.086

Group 3

Application Events 15 month period		*Application Events/Acre 15 month period*	
Mean	31.00	Mean	7.30
Standard Error	8.82	Standard Error	2.64
Median	28.00	Median	6.37
Standard Deviation	17.64	Standard Deviation	5.29
Sample Variance	311.33	Sample Variance	27.95
Kurtosis	-0.65	Kurtosis	-1.85
Skewness	0.77	Skewness	0.67
Range	40.00	Range	11.53
Minimum	14.00	Minimum	2.47
Maximum	54.00	Maximum	14.00
Count	4.00	Count	4.00
Confidence Level(95.0%)	28.08	Confidence Level(95.0%)	8.41

<u>General Analysis</u>

Currently, members grouped into large operations have the most chemical applications on a per site basis and on a chemical application per acre basis. Preliminary results indicate that growers within the small operation group have more chemical applications on a per acre basis than the medium operation group, however, this is likely due to the sod farm, which only applies chemicals sparingly on a large scale. As there are currently only three growers with information grouped into this category, this skewed the average lower. Additionally, there was one member of the large group that did not apply any pesticides. LAILG anticipates that as more data comes in group-wide, these numbers will begin to show distinct levels between the groups.

<u>Statistical Analysis</u>

Data acquired from the sampling sites showed a large spread of chemical application patterns within each of the groups and across LAILG as a whole, as is indicated by the large (sometimes above the mean) standard deviations for each of the analyses and the large variances in the minimum and maximum applied. The high standard errors also indicate that the sample sizes are too small at this point to state that the statistical means from the analyses are completely accurate. The collection of additional data throughout the group, as discussed in Section 6.0, should provide a larger dataset for analyzing growing practices group wide, to determine if the current grouping methodology is appropriate.

The skewness and kurtosis for both the sampling group as a whole and each separate size group indicate that the data, as currently collected, is neither distributed symmetrically or Gaussian in nature. It is currently unknown if the data will approach a normal distribution once information is collected from the group as a whole.

5.4 Grouping Results, Observed Runoff Conditions

LAILG organized data by NGA parcel regardless of sample date. From the 64 samples collected to date, 56 were collected from growers that self-reported enough information for complete grouping and comparative analysis. Of the 56 samples, extreme outliers were discarded in the analysis. In both cases, these samples reported parameters at least an order of magnitude higher than the remaining population for pesticides (2 sample results), or reported values over four standard deviations from the average for nutrients (2 samples for Nitrogen and Phosphorus). Results from the remaining samples were placed into their representative operative group, and the results from each group were averaged.

5.4.1 Nutrients Detected

After grouping sampling sites into their operational categories, sampling results in each of the groups was averaged for Nitrogen and Phosphorous detected in collected runoff samples. Potassium was not looked at, as it is not included in the laboratory analytical suite. The Y-axis presents the average of both dry and wet season samples collected within each group in mg/L. The group averages are compared in Graph 10, and basic raw statistical data used for this graph and general evaluation purposes is presented on Table 13.

Graph 10. Grouping, Nutrient Concentrations

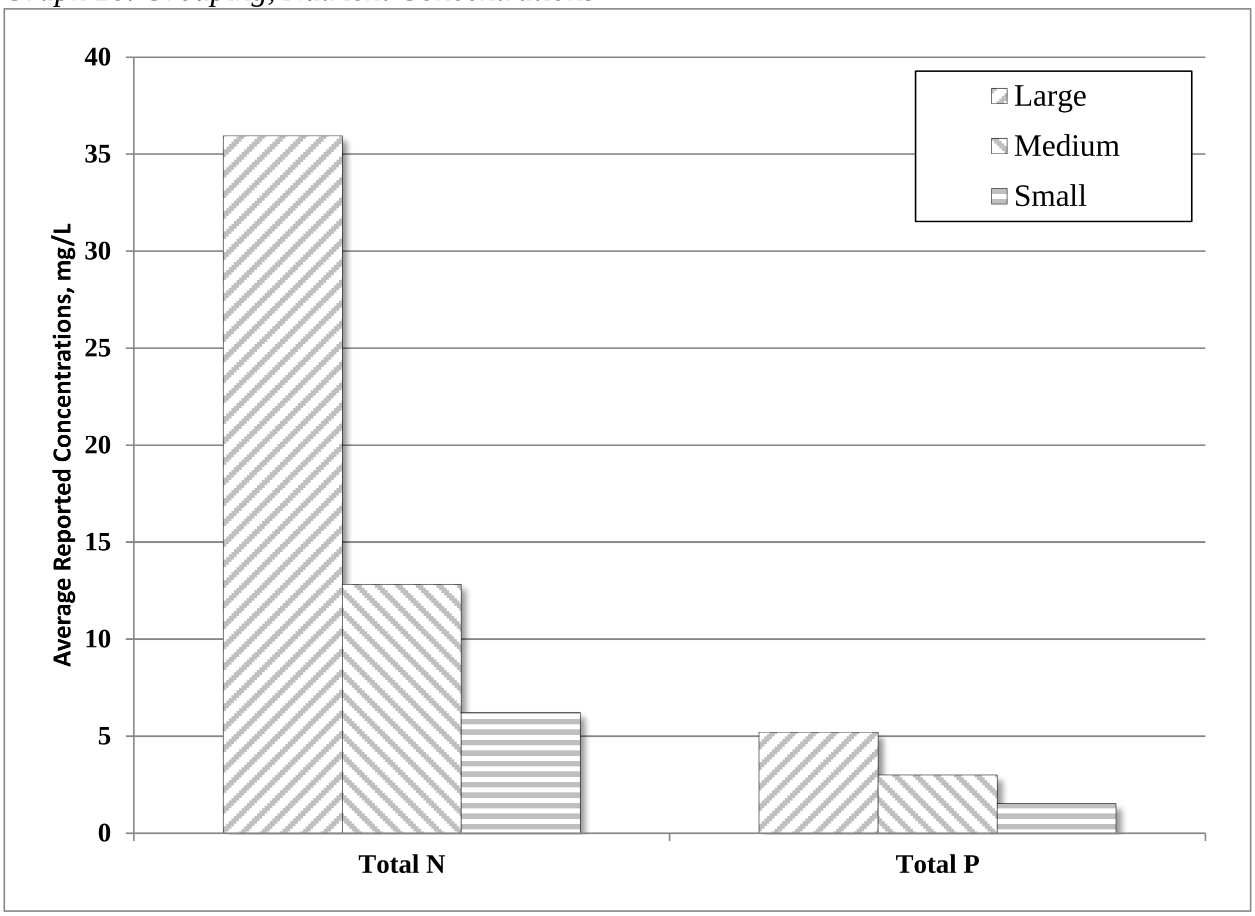


Table 13. Grouping Statistics, Nutrients Detected

All Sites

Total N Detected mg/L		*Total Phosphate as P Detected mg/L*	
Mean	26.51	Mean	4.18
Standard Error	5.33	Standard Error	0.83
Median	12.09	Median	2.37
Standard Deviation	39.17	Standard Deviation	6.13
Sample Variance	1534.38	Sample Variance	37.61
Kurtosis	8.19	Kurtosis	10.67
Skewness	2.71	Skewness	3.25
Range	200.69	Range	31.45
Minimum	0.17	Minimum	0.26
Maximum	200.86	Maximum	31.71
Count	54.00	Count	54.00
Confidence Level(95.0%)	10.69	Confidence Level(95.0%)	1.67

Group 1

Total N Detected mg/L		*Total Phosphate as P Detected mg/L*	
Mean	35.93	Mean	5.19
Standard Error	7.97	Standard Error	1.28
Median	14.78	Median	2.54
Standard Deviation	46.47	Standard Deviation	7.45
Sample Variance	2159.91	Sample Variance	55.55
Kurtosis	4.36	Kurtosis	5.91
Skewness	2.06	Skewness	2.56
Range	200.30	Range	31.40
Minimum	0.56	Minimum	0.31
Maximum	200.86	Maximum	31.71
Count	34.00	Count	34.00
Confidence Level(95.0%)	16.22	Confidence Level(95.0%)	2.60

Group 2

Total N Detected mg/L		*Total Phosphate as P Detected mg/L*	
Mean	12.81	Mean	2.99
Standard Error	3.20	Standard Error	0.58
Median	11.11	Median	2.88
Standard Deviation	11.55	Standard Deviation	2.10
Sample Variance	133.32	Sample Variance	4.41
Kurtosis	-0.19	Kurtosis	3.01
Skewness	0.93	Skewness	1.44
Range	35.72	Range	8.14
Minimum	0.17	Minimum	0.26
Maximum	35.89	Maximum	8.40
Count	13.00	Count	13.00
Confidence Level(95.0%)	6.98	Confidence Level(95.0%)	1.27

Group 3

Total N Detected mg/L		*Total Phosphate as P Detected mg/L*	
Mean	6.21	Mean	1.51
Standard Error	1.57	Standard Error	0.32
Median	6.06	Median	1.50
Standard Deviation	4.15	Standard Deviation	0.85
Sample Variance	17.21	Sample Variance	0.72
Kurtosis	0.93	Kurtosis	-0.09
Skewness	0.97	Skewness	0.47
Range	12.31	Range	2.54
Minimum	1.49	Minimum	0.39
Maximum	13.80	Maximum	2.93
Count	7.00	Count	7.00
Confidence Level(95.0%)	3.84	Confidence Level(95.0%)	0.79

General Analysis

There is a clear decline in the averages for nutrients detected for each group, with the large operations being the highest for both nitrogen and phosphorous. Also, the vast majority of samples collected have been from the larger members: 34 of the samples came from large operators, 13 of the samples came from medium operators, and 7 of the samples came from small operators. None of the samples collected from the small group reported concentrations of nitrogen above WQBs. The large group had the largest spread of detected concentrations, along with the highest reported values group wide.

Statistical Analysis

Data acquired from the sampling sites showed a large spread of nutrient detection pattern across the sample set, as indicated by the large (above the mean) standard deviations and the large variances in the minimum and maximum detected concentrations. Overall, the spread of detected concentrations inside each size grouping decreased. The standard errors are not as high as in the nutrient and pesticides applied evaluation, meaning the means from the sample set are beginning to become large enough to somewhat accurately predict future sampling results. Nevertheless, more sampling data is required to provide any statistical significance throughout the representative groups.

The skewness and kurtosis for the sampling group as a whole, the large operation group, and for phosphorous in the medium operation group indicate that the data, as currently collected, is neither distributed symmetrically or Gaussian in nature. Samples for nitrogen in the medium operation group and samples collected from the small operation group are somewhat evenly distributed and Gaussian, but there needs to be more data collected from these representative groups to prove any relationship.

5.4.2 Pesticides Detected

After grouping sampling sites into their operational categories, sampling results in each of the groups were averaged for pesticide detections in collected runoff samples. In order to simplify the dataset, all detections of any OP pesticides, pyrethroid pesticides, and both OP and pyrethroid pesticides were summed for each individual sample. OC pesticides were not evaluated, as there is no way to determine which sites had historical applications of these constituents, and detections should not depend on operational practices. The Y-axis presents the average of both dry and wet season samples collected within each group in ng/L. The group averages are compared in Graph 11, and basic raw statistical data used for this graph and general evaluation purposes is presented on Table 14.

Graph 11. Grouping, Pesticide Concentrations

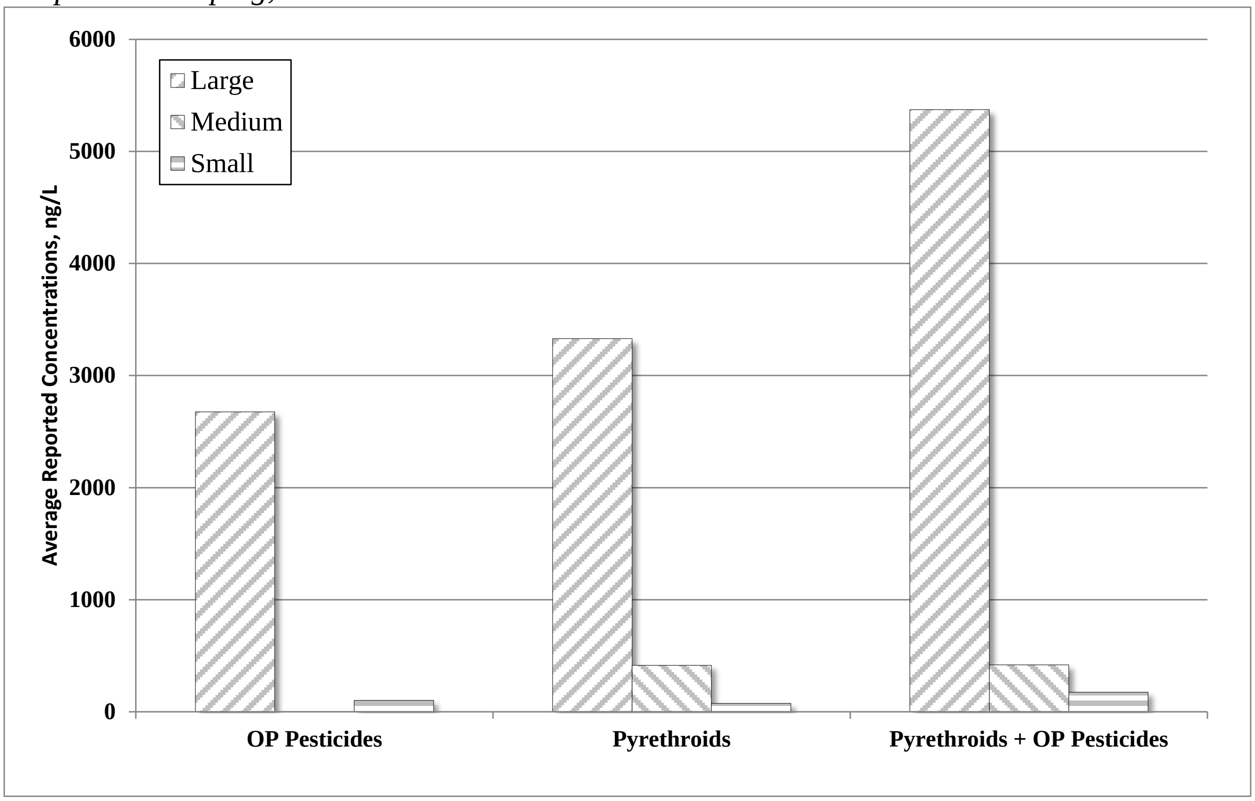


Table 14. Grouping Statistics, Pesticides Detected

All Sites

Total OP Pesticides Detected ng/L		*Total Pyrethroid Pesticides Detected ng/L*		*Total OP + Phyrethroid Pesticides Detected ng/L*	
Mean	1697.97	Mean	2204.24	Mean	3469.35
Standard Error	967.52	Standard Error	769.62	Standard Error	1140.39
Median	0.00	Median	186.25	Median	305.00
Standard Deviation	7109.81	Standard Deviation	5655.56	Standard Deviation	8302.14
Sample Variance	50549404.97	Sample Variance	31985331.85	Sample Variance	68925496.15
Kurtosis	30.32	Kurtosis	12.12	Kurtosis	14.05
Skewness	5.29	Skewness	3.53	Skewness	3.53
Range	46100.00	Range	26753.70	Range	46209.70
Minimum	0.00	Minimum	0.00	Minimum	0.00
Maximum	46100.00	Maximum	26753.70	Maximum	46209.70
Count	54.00	Count	54.00	Count	53.00
Confidence Level(95.0%)	1940.60	Confidence Level(95.0%)	1543.67	Confidence Level(95.0%)	2288.35

Group 1

Total OP Pesticides Detected ng/L		*Total Pyrethroid Pesticides Detected ng/L*		*Total OP + Phyrethroid Pesticides Detected ng/L*	
Mean	2674.69	Mean	3327.65	Mean	5370.77
Standard Error	1519.68	Standard Error	1184.90	Standard Error	1758.05
Median	0.00	Median	494.10	Median	873.90
Standard Deviation	8861.18	Standard Deviation	6909.08	Standard Deviation	10099.20
Sample Variance	78520445.44	Sample Variance	47735328.44	Sample Variance	101993889.13
Kurtosis	18.44	Kurtosis	6.36	Kurtosis	7.89
Skewness	4.14	Skewness	2.68	Skewness	2.68
Range	46100.00	Range	26753.70	Range	46209.70
Minimum	0.00	Minimum	0.00	Minimum	0.00
Maximum	46100.00	Maximum	26753.70	Maximum	46209.70
Count	34.00	Count	34.00	Count	33.00
Confidence Level(95.0%)	3091.81	Confidence Level(95.0%)	2410.69	Confidence Level(95.0%)	3581.02

Group 2

Total OP Pesticides Detected ng/L		*Total Pyrethroid Pesticides Detected ng/L*		*Total OP + Phyrethroid Pesticides Detected ng/L*	
Mean	3.68	Mean	413.36	Mean	417.04
Standard Error	3.01	Standard Error	150.34	Standard Error	151.98
Median	0.00	Median	72.00	Median	72.00
Standard Deviation	10.87	Standard Deviation	542.05	Standard Deviation	547.96
Sample Variance	118.06	Sample Variance	293822.22	Sample Variance	300258.96
Kurtosis	11.33	Kurtosis	-0.67	Kurtosis	-0.62
Skewness	3.32	Skewness	0.99	Skewness	1.01
Range	38.90	Range	1379.10	Range	1414.80
Minimum	0.00	Minimum	0.00	Minimum	0.00
Maximum	38.90	Maximum	1379.10	Maximum	1414.80
Count	13.00	Count	13.00	Count	13.00
Confidence Level(95.0%)	6.57	Confidence Level(95.0%)	327.56	Confidence Level(95.0%)	331.13

Group 3

Total OP Pesticides Detected ng/L		*Total Pyrethroid Pesticides Detected ng/L*		*Total OP + Phyrethroid Pesticides Detected ng/L*	
Mean	100.44	Mean	73.64	Mean	174.09
Standard Error	87.86	Standard Error	34.88	Standard Error	82.02
Median	0.00	Median	47.40	Median	110.00
Standard Deviation	232.47	Standard Deviation	92.29	Standard Deviation	217.00
Sample Variance	54041.59	Sample Variance	8517.29	Sample Variance	47086.97
Kurtosis	6.62	Kurtosis	3.44	Kurtosis	3.53
Skewness	2.56	Skewness	1.80	Skewness	1.84
Range	623.30	Range	264.00	Range	618.40
Minimum	0.00	Minimum	0.00	Minimum	4.90
Maximum	623.30	Maximum	264.00	Maximum	623.30
Count	7.00	Count	7.00	Count	7.00
Confidence Level(95.0%)	215.00	Confidence Level(95.0%)	85.35	Confidence Level(95.0%)	200.69

General Analysis

Large operations had the most significant detections of pesticides, both in severity and frequency. Detections of the OP pesticides were quite sporadic across the sample set, with a lot of non-detect results. Pyrethroid pesticides were detected more regularly in each sampling group. Overall there was a wide variance in detections at sites, most likely due to variations in application times, application locations, and application amounts prior to site discharges.

Statistical Analysis

Data acquired from the sampling sites showed huge spread of pesticide detection patterns across the sample set, as indicated by the very large (above the mean) standard deviations and the large variances in the minimum and maximum detected concentrations. Standard errors show the same pattern. Due to the variance of pesticide application patterns, both throughout the group and site-by-site, this data set may never show any statistically significant predictions for either the mean or future sampling result predictions.

The skewness and kurtosis for both the sampling group as a whole and each separate size group indicate that the data, as currently collected, is neither distributed symmetrically or Gaussian in nature. Due to the presence of non-detections group wide, it is unlikely that the data will approach a normal distribution, even after further samples are collected.

6.0 WQMP IMPLEMENTATION

As outlined in Section 5 of this report, it appears that company revenue and size is a significant factor in both the potential for a grower to release pollutants and in actual elevations of contaminants in reported runoff results from sampling. LAILG will implement the WQMP on a rolling basis, with larger growers being given the first priority and a larger share of the required BMP implementation. A Gantt chart outlining estimated project timelines is presented on Graph 12. A discussion of the required BMPs for enrolled members in each grouping is presented in Section 7.

6.1 Sampling Sites

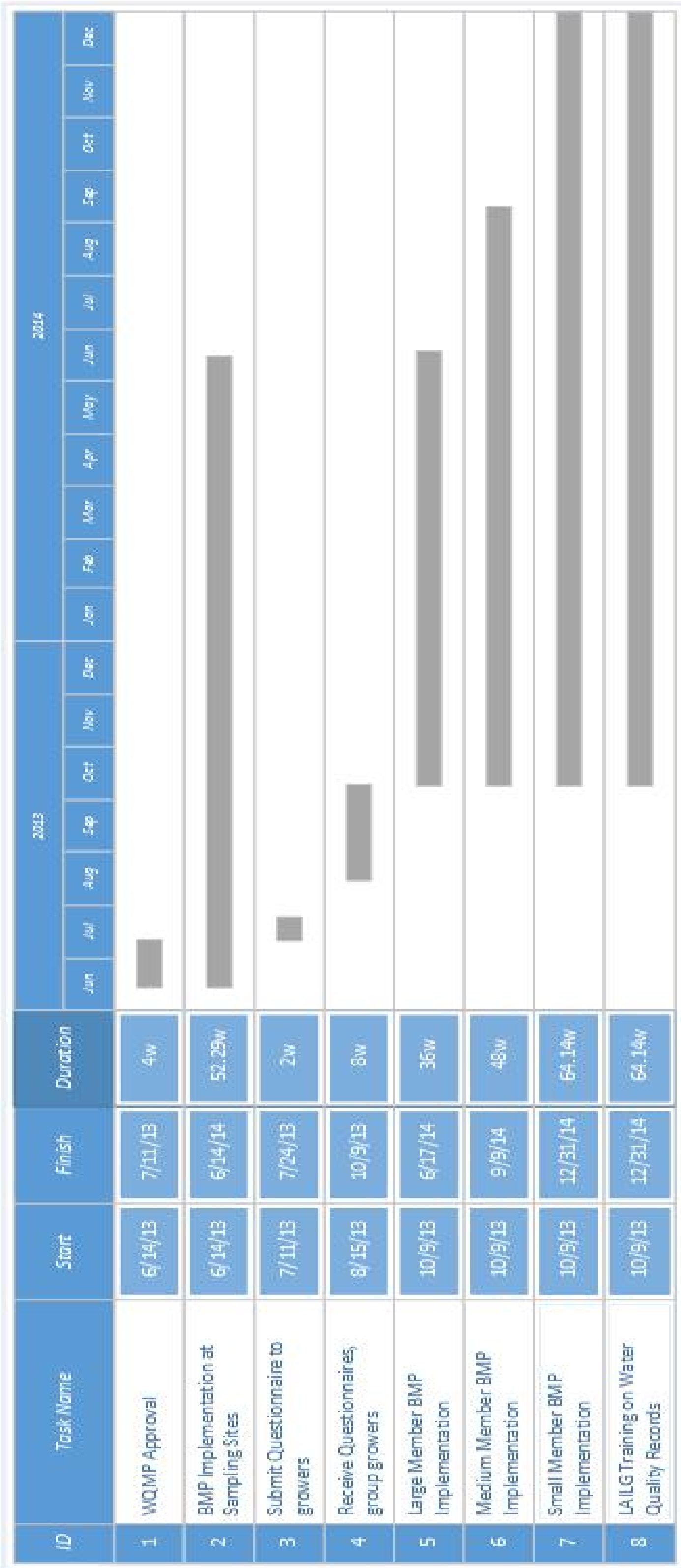
Growers enrolled as sampling sites will continue to initiate BMP as long as sampling results report exceedances. Sampling sites began to initiate BMPs as of January 1, 2009; individual BMPs historically implemented are included in Appendix E on a site-by-site basis. Future laboratory analytical and field monitoring results will continue be evaluated on an individual basis in conjunction with newly implemented BMPs to determine if they are effective in reducing or eliminating water quality issues with each site. If implemented BMPs are not improving water quality, LAILG will work with individual growers to develop and implement additional BMPs, or to improve existing BMPs. LAILG will disseminate data from the evaluation of BMP effectiveness at sampling sites to all growers enrolled in the LAILG in order to focus implementation towards BMPs that have proven to be the most effective at reducing water quality impacts. Implemented BMPs will be documented in future AMRs for the group.

6.2 Site Grouping

In order to group members into their respective groups for BMP implementation, LAILG will submit a basic information questionnaire to each grower. The questionnaire will request the following information: gross sales of company; total acreage operated by company; total fertilizer use and formulation, per parcel per year; total pesticide/herbicide/fungicide applications, per parcel per year; irrigation use per year; fertilizer application practices; and, irrigation practices. A copy of the general information questionnaire is included in Appendix F.

LAILG will sort growers into the following groups: large operation, medium operation, and small operation. Growers will be sorted into groups based on the matrix provided in Section 5.2, Table 10. Members will be made aware of their grouping following the receipt of general information questionnaires from the group. At this time, members will be given the opportunity to petition their operational grouping to the LAILG. The LAILG will consider petitions on a case-by-case basis. If required, LAILG will include the LARWQCB to resolve any disputes, and any sites that are moved from their original grouping location will be documented and explained in future reports.

Graph 12. Gantt Chart, Anticipated Project Timeline



In addition to sorting growers into general operational groups, collected information will be utilized to sort members into subgroups of fertilizer and pesticide use intensity. This information will be utilized to direct members towards categorized BMPs that will be most beneficial to protecting water quality at their operations. LAILG will determine the proper levels for grouping members upon receiving information from all the enrolled members.

LAILG will store the collected information in a digital database. Collected data will be confidential to protect grower's anonymity. Should the collected data present trends that are different from the application intensity discussed in Section 5.3, the grouping matrix will be adjusted as necessary after discussions with the LARWQCB. Results from site grouping will be included and discussed in subsequent reports.

6.3 Grouping Timeline

Following approval of the WQMP by the LARWQCB, LAILG will submit the questionnaire forms to the group within two weeks. Members will be given three months to complete and return the forms to LAILG. LAILG will provide on-going support to assist growers with the proper completion of the questionnaire, if required. LAILG will sort and organize the information, and notify growers of their position in the group two weeks following the three month submittal date. Growers will be given a chance to petition their position in the group should they believe they are misrepresented.

6.4 BMP Implementation Timeline

Following the completion of grouping and notifying growers of their group status, LAILG will give growers placed in the large operation group an additional nine months to select and complete BMPs at each site, and to submit documentation of completion to LAILG. LAILG will provide support in selecting BMPs that are appropriate for each individual operation. The medium operation group will be given an additional twelve months, and the small operation group will be given an additional fifteen months. All Guidelines for the implementation of specific BMPs for members in each group is included on Graph 12.

6.5 Ongoing Training and Outreach

LAILG will implement ongoing outreach and training throughout the life of the project. As a part of project outreach, LAILG will be providing all enrolled members with a Water Quality Recordkeeping notebook prepared by the University of California Cooperative Extension. Although completion of the notebook will not be required, it will be strongly recommended that growers utilize the notebook to track practices at their sites. LAILG will provide instructions on the completion of the notebook at ongoing education classes and through ongoing outreach and support.

LAILG will also inform members of the various BMP implementation documents that are available to members free of charge, in order to assist with the proper selections of BMPs. LAILG will provide support, if required, to assist growers with information included in the documents.

As the program progresses and operations begin to implement further BMPs, LAILG will continue to attempt to conduct on-going education seminars at LAILG member properties. This will allow LAILG to lead educational tours, to give first hand examples of BMPs and demonstrate their potential uses. Hands on training on the implementation of simple BMPs will be provided during these seminars.

7.0 BMP IMPLEMENTATION GUIDELINES FOR GROUPS

7.1 All Sites

A number of BMPs that have been identified in guidance documents are both inexpensive and simple to implement at growing sites. These BMPs mainly revolve around simple housekeeping, operational practices, and proper employee training. Due to their ease of use for implementation, LAILG has required that the following BMPs have been implemented at all growing sites enrolled in the LAILG:

- Irrigation Management:
  1) Train personnel to manage spray stakes and drip system to ensure all operational discharge points are located inside pots.
  2) Train all employees that apply irrigation water to maintain irrigation system properly.
- Pest Management:
  1) Avoid application of pesticides prior to forecasted rain events.
  2) Train all employees to clean up spills immediately based on predetermine protocols or spill management plan.
  3) Train all employees on the basic principles of pesticide use and spill control.
- Nutrient Management:
  1) Avoid application of fertilizer prior to forecasted rain events.
  2) Train all employees to clean up spills immediately based on predetermine protocols or spill management plan.
- Erosion and Runoff Management:
  1) Inform all employees as to the location of all drainage conduits, where they drain to, and the location of stormwater and sewer system drains.
  2) Train all employees on the basic principles of stormwater runoff management and current regulations (including the CWIL program).
- Non-Production Areas:
  1) Maintain all company vehicles to prevent leaks.
  2) Keep wash water from vehicle cleaning on property and prevent it from entering storm drains or sewer system.
  3) Train all employees to clean up spills immediately and properly from vehicles.
  4) Maintain site and keep it free from trash and debris.
  5) Keep outdoor garbage containers covered.
  6) All outhouses need to be periodically cleaned and maintained.
  7) Properly dispose of hazardous waste and oil.
  8) Train all employees to clean up prior to forcasted rain events.
  9) an.

7.2 BMP Grouping

On the BMP Questionnaire discussed in Sections 8 and 9, a number of BMPs are suggested for growers to choose for implementation. The list is not all inclusive, but instead serves as a beginning point for analyzing BMPs throughout the group. The BMP Questionnaire was developed based on previous feedback from members, and professional input from various stakeholders. BMPs are broken into five basic categories: pesticide management, nutrient management, sediment management, water management, and housekeeping. Growers will be individually encouraged to choose BMPs from the general groupings most applicable to their operation, as discussed in Section 9.

Should growers like to implement BMPs not directly listed on the BMP Questionnaire, LAILG will determine whether the proposed BMP is extensive enough to count as an implemented BMP for their operation. This decision will be made by the LAILG steering committee, consultants, and based on peer reviewed documents and professional knowledge. If required, LAILG will include the LARWQCB to resolve any disputes.

7.3 Sampling Sites

Sampling sites have already begun BMP implementation, as discussed in Section 6.1 and included in Appendix E. Each individual grower selected initial BMPs at their sampling site based on the ability for immediate implementation at each site. LAILG will continually work with the individual growers at sampling sites to ensure that additional BMPs, if required, are selected based on exceedances reported during sampling events at sites. As there is tangible data for sampling locations, LAILG will continue to direct BMP implementation at these sites. Sampling sites will continue to implement various BMP until water quality benchmarks are met.

During the life of this program, LAILG will evaluate laboratory analytical results, field monitoring results, and site observations to determine if applied BMPs are effectively improving water quality at each sampling site. If monitoring data suggests that certain BMPs, or combinations of BMPs, are either efficient or deficient at improving water quality at the sites, LAILG will communicate these findings to the growers to help guide BMP implementation across the group as a whole. LAILG will work closely with the sampling sites to continue to design and implement BMPs until water quality benchmarks are attained.

LAILG is currently working with the CWH under the San Gabriel Nurseries, Irrigated Lands, and Open Space Water Quality Improvement Project (Grant Agreement No. 11-098-554). CWH will be implementing specific BMPs at selected growing operations in the San Gabriel Region, and evaluating concentrations of metals, pesticides, and nutrients before and after BMP implementation. LAILG will be assisting with sampling and communicating with CWH throughout the life of the grant to disseminate information to growers throughout the LAILG, in order to direct effective BMPs in a cost effective manner.

7.4 Large Operation Group

In addition to the BMPs being implemented at all sites enrolled in the program, growers identified as large operators will be required to begin implementation, fully implement, or significantly improve no fewer than three BMPs at each growing parcel. Should a grower operate on more than one parcel of land, operational BMPs applied company-wide will count for each parcel. All non-contiguous pieces of land will be counted as different parcels, regardless of location.

A general list of suggested BMPs will be included in the grower questionnaire (Appendix F). LAILG will provide suggestions and assistance in BMP selection based on the grower's individual operation and reported use patterns on the general information form, but individual operators will ultimately be required to select and implement BMPs of their choosing. LAILG will stress the importance of sediment control BMPs for achieving applicable water quality benchmarks, and will provide continual outreach on the success of BMPs that are implemented at other properties in the group. A more in depth discussion of BMPs implementation guidelines is presented in Section 9.

LAILG will track the implementation of BMPs as outlined in Section 8.

7.5 Medium Operation Group

In addition to the BMPs being implemented at all sites enrolled in the program, growers identified as medium operators will be required to begin implementation, fully implement, or significantly improve no fewer than two BMPs at each growing parcel. Should a grower operate on more than one parcel of land, operational BMPs applied company-wide will count for each parcel. All non-contiguous pieces of land will be counted as different parcels, regardless of location.

A general list of example BMPs will be included in the grower questionnaire (Appendix F). LAILG will provide suggestions and assistance in BMP selection based on the grower's individual operation and reported use patterns on the general information form, but individual operators will ultimately be required to select and implement BMPs of their choosing. LAILG will stress the importance of sediment control BMPs for achieving applicable water quality benchmarks, and will provide continual outreach on the success of BMPs that are implemented at other properties in the group. A more in depth discussion of BMP implementation guidelines is presented in Section 9.

LAILG will track the implementation of BMPs as outlined in Section 8.

7.6 Small Operation Group

In addition to the BMPs being implemented at all sites enrolled in the program, growers identified as small operators will be required to begin implementation, fully implement, or significantly improve no fewer than one BMP at each growing parcel. Should a grower operate on more than one parcel of land, operational BMPs applied company-wide will count for each parcel. All non-contiguous pieces of land will be counted as different parcels, regardless of location.

A general list of suggested BMPs will be included in the grower questionnaire (Appendix F). LAILG will provide suggestions and assistance in BMP selection based on the grower's individual operation and reported use patterns on the general information form, but individual operators will ultimately be required to select and implement BMPs of their choosing. LAILG will stress the importance of sediment control BMPs for achieving applicable water quality benchmarks, and will provide continual outreach on the success of BMPs that are implemented at other properties in the group. A more in depth discussion of BMP implementation guidelines is presented in Section 9.

LAILG will track the implementation of BMPs as outlined in Section 8.

7.7 Petitions

Should growers believe that they are unable to meet the BMP requirements outlined in this document, LAILG will accept petitions and evaluate them on a case-by-case basis. LAILG will consider both currently implemented BMPs, the site location and layout, and financial constraints prior to determining if a less stringent BMP schedule is applicable for the petitioning site. Ultimately, the LAILG steering committee will decide if an individual site may adhere to a less stringent BMP schedule. Sites that are granted a lessor standing will be documented, and reported in future reports to the LARWQCB.

7.8 Restrictions on Sites Under a Utility Easement

Currently a large percentage of the sites enrolled in the LAILG lease their property under a utility easement. The majority of these easements are for properties that are operated under power lines owned by SCE. All structural BMPs need prior approval by SCE, and the following limitations are set on SCE owned land:

- Composting is not allowed.
- Fertilizer storage tanks are not allowed.
- Grade changes on the property are not allowed.
- Water collection and storage areas are not allowed.
- Water treatment on site is not allowed.
- Storage of flammable liquids or hazardous materials is not allowed.

These limitations present an obstruction for growers trying to reduce potential impacts from growing practices on SCE owned land. Growers who operate on SCE owned lands will be provided with a copy of *Best Management Practices: A Water Quality Field Guide for Growers, Southern California Edition*, and will be expected to adhere to guidelines set forth in this document.

8.0 WQMP TRACKING

LAILG developed a BMP Questionnaire for submittal to all enrolled members along with the basic information questionnaire, following the approval of this WQMP. The BMP Questionnaire was developed to track general use of current BMPs at sites, the types of growers that are implementing specific BMPs, and to track the future implementation of BMPs throughout the group. Based on feedback from members on the previous questionnaire developed for the last WQMP submitted for the group, the original questionnaire was simplified to primarily include generic and commonly implemented BMPs. LAILG anticipates this will provide the most accurate feedback from the group as a whole, and will alleviate previously encountered issues with the understanding of more complex, in-depth BMP questions. A Spanish version of the questionnaire will be made available if necessary. A copy of the questionnaire is included in Appendix F.

Answers reported on BMP Questionnaire will be utilized to develop a baseline of implemented BMPs throughout the group. Besides the BMPs listed, growers will be also able to write in BMPs that they have implemented at sites in an “other” section. Should LAILG continue to receive repeat answers that are included in the “other” section, they will be incorporated into future iterations of the questionnaire. Grower responses from the initial submittal of the BMP Questionnaire will be used to further refine the BMP Questionnaire, including a complete revision and resubmittal, if deemed necessary.

Records of the original answers to the BMP Questionnaire will be recorded into a digital database for statistical and group wide interpretation. This will allow LAILG to analyze currently implemented BMPs by crop types, grower sizes, geographical locations, etc. LAILG will resubmit the BMP Questionnaire to members after operational grouping and the timeline for BMP implementation is complete (See Graph 12). Results from the “before and after” BMP Questionnaire will be used to statistically evaluate BMP implementation and the performance of this WQMP throughout the program. This statistical analysis will allow a way to track BMP implementation in different geographical locations, types, sizes, and operational practices of growers. WQMP and BMP data collected during the program will be reported to the LARWQCB annually throughout the program. Results will be reported in a format similar to the Central Coast Regional Water Quality Control Board *Management Practice Checklist Update Summary Report*, dated June 2007.

Members will be required to verify the implementation of BMPs by providing photo documentation, written and signed documentation, or both. Representatives of the LAILG will also be conducting random visits to growers properties to verify that BMPs have been implemented as reported on the required forms. LAILG will keep records of implemented BMPs on file, and will track and report implemented BMPs to the LARWQCB during the Annual Monitoring and WQMP Implementation Report in a general manner. Should members be non-cooperative in the implementation of BMPs, as outlined in this document, they will be notified directly by LAILG to attempt to fix all non-compliance issues. Should members continue to be non-responsive after reasonable follow up and outreach by LAILG, they will be evicted from the group.

9.0 BEST MANAGEMENT PRACTICES

BMP practices proposed on the BMP Questionnaire were broken into five general categories, in descending order of significance: erosion and runoff management, nutrient management, pest management, irrigation management, and non-production area management (housekeeping). Data collected from the general information forms for each grower will be utilized to subgroup members into high, medium, and low use groups for nutrients, pesticides, and irrigation. LAILG will then use this data to suggest from which general category members should choose BMPs. BMPs from the erosion and runoff management category will always be suggested as the first line of intensive BMPs to be implemented, however these BMPs are often more time and resource intensive than BMPs in other subgroups and do not provide any tangible cost saving improvements to growers who implement them. Besides the erosion and runoff control category, each individual member will be directed towards implementing BMPs based on their categorization in each subgroup, as presented on the example matrix on Table 15. All BMPs listed in the non-production area management are considered basic BMPs.

Table 15. BMP Suggestion Matrix

Nutrients	Pesticides	Irrigation	Suggested BMP subgroup
H	H/M/L	H/M/L	Nutrient
M/L	H	H/M/L	Pesticide
M/L	M/L	H	Irrigation
M	M/L	M/L	Nutrient
L	M	M/L	Pesticide
L	L	M/L	Irrigation
H	High use designation		
M	Medium use designation		
L	Low use designation		

9.1 Water Management

Irrigation management is essential to reduce the amount of applied water during growing operations. Many growers apply more water than necessary for plant growth in order to assure plants are not water stressed. Inefficient irrigation systems can also compound the problem, as additional water is necessary to compensate for the lack of uniform water distribution. This excess water could potentially generate runoff water that leaves the property. Irrigated runoff carries excess nutrients from plant leaching, dissolved pesticides, and excess sediment from erosion (which also carries non-soluble pesticides), all of which have the potential to end up in storm drains, and eventually surface waters.

Increasing irrigation efficiency at sites has multiple benefits for growers. Minimizing irrigation by matching watering habits to known plant requirements reduces the up-front cost associated with purchasing water, and helps ensure that applied nutrients and pesticides remain in the soil. Excess leaching of water through soil growing mediums removes nutrients that could be utilized by plants, which in turn increases the amount of fertilizer that needs to be applied for plant health and can accumulate nutrients and salts in surface soils. Proper management of irrigation practices and systems has the potential to reduce contaminants from leaving the site, may eliminate irrigated runoff from growers, and in turn reduce operational costs associated with water and fertilizer use.

A suggested, but not all-inclusive list of BMPs in the water management category is included on the Questionnaire included in Appendix G.

9.2 Nutrient Management

Fertilizer application by growers is often intensive due to the generally high nitrogen demand required by ornamental plants, especially when turnover ratios of stock are high. While fertilizers are essential to stock production, inefficient fertilizer application can be a significant source of excess nitrogen and phosphorous in runoff water. Due to the elevated use of fertilizer in nursery crops, excess nitrogen is often lost to leaching. Nitrogen lost due to soil leaching has been reported to be as high as 50 percent of the total nitrogen applied (Yeager, et al, 1993). Nitrogen that is lost to irrigation leaching ends up in soil beneath the potted plants, where it may be eventually transported off site in irrigated runoff or during storm events. Providing the proper quantities of nutrients at the proper time, and reducing fertilizer leaching during irrigation events can help to alleviate this potential or existing issue.

Members who fall into the nutrient suggested subgroup will be encouraged to choose from or significantly improve upon the listed BMPs.

A suggested, but not all-inclusive list of BMPs in the nutrient management category is included on the Questionnaire included in Appendix G.

9.3 Pesticide Management

Pesticide use on nursery crops is often times more intensive than on other agricultural crops, as they are valued based on their visual appearance. Quarantine restrictions are also put in place to mitigate the potential movement of exotic pests, and these can mandate the use of potentially harmful pesticides that would not normally be used at the nursery. Compounding these issues is that many major pests attacking ornamental crops are resistant or develop resistance to one or more pesticides, causing an ever changing and growing cycle of pesticide use. Excessive pesticide use, when paired with an intensive irrigation cycle, significantly increases the likelihood of pesticides contaminating surface waters in the region. Many commonly used pesticides are known to have high toxicities to aquatic organisms, and can adversely impact aquatic ecosystems.

A suggested, but not all-inclusive list of BMPs in the pesticide management category is included on the Questionnaire included in Appendix G.

9.4 Sediment and Erosion Management

Ideally, the goal for all growers should be to allow no sediment from irrigation water or storm water erosion to leave the site. While this may not be practical depending on the growers setting, careful evaluation of each site setting can yield significant reductions in water and sediment runoff. Rain or irrigation water loosens soil, and when the saturation point is reached, water begins to openly flow. This flow of excess water can carry enough energy to dislodge soil, which ends up as suspended sediment in the runoff. Excess sediment contributes to the clogging of pipes and ditches, disrupts aquatic life, and can carry nutrients, pesticides, and other pollutants off grower sites.

Growers that generate small amounts of runoff and sediment can often utilize less capital-intensive solutions to control erosion and runoff management, such as barrier technologies, redirecting runoff channels, and using polyacrylimides or groundcover to reduce sediment load. Larger growers that generate a substantial amount of runoff many times must consider larger scale operations, such as the capture and reuse of irrigation and storm water runoff. In general, applying proper BMPs to irrigation, fertilizer, and pesticide use reduces the amount of runoff that needs to be managed and the severity of possible runoff and sediment related impacts to waterbodies.

A suggested, but not all-inclusive list of BMPs in the sediment and erosion management category is included on the Questionnaire included in Appendix G.

9.5 Housekeeping

Basic housekeeping of non-production areas can go a long way in reducing pollution sources. Areas such as walkways, loading areas, storage areas, packing sheds, offices, parking lots, and general grounds can attribute to pollution in the form of excess sediment loads from displaced dirt and debris, fuels, and sewage from unkempt restroom areas. Proper housekeeping policies are also cheap to implement and easy to enforce.

All members will be encouraged to choose from or significantly improve upon one of the listed BMPs.

A suggested, but not all-inclusive list of BMPs in the housekeeping category is included on the Questionnaire included in Appendix G.

10.0 SUMMARY / GOALS

The main goals of the WQMP for LAILG are: to implement BMPs to improve water quality group-wide, to evaluate the effectiveness of BMPs with subsequent monitoring and sampling, to track efforts implemented group wide, to divide members into appropriate groups based on their potential threats to water quality, and to integrate water quality and water conservation into the growing process thru education.

Based on field monitoring and laboratory analytical results to date, discharges from LAILG sampling sites have exceeded CWIL benchmarks and/or water quality objectives set in the basin plan. Due to the exceedances, LAILG developed a WQMP, as required in the CWIL. The WQMP is designed to assess current data, and implement and track BMPs throughout the LAILG. Most of the LAILG sampling sites have already implemented BMPs based on the results of the sampling analysis. LAILG will be working directly with the sampling sites to evaluate the BMPs currently in place and to design more BMPs if necessary to improve water quality. For the members not enrolled as sampling sites, LAILG will require participants to document BMPs currently being implemented through the use of a questionnaire, and to provide proof of implementation of future required BMPs.

LAILG will group members into large operation, medium operation, and small operation groups using a basic information questionnaire to each grower. The questionnaire will request the following information: gross sales of company, in general groups; total acreage operated by company; total fertilizer use and formulation, per parcel per year; total pesticide/herbicide/fungicide applications, per parcel per year; irrigation use per year; fertilizer application practices; and, irrigation practices. The placement of growers in each group will determine the number of BMPs required to be implement at each of their properties.

Subsequent monitoring and sampling data collected from LAILG sampling sites will be used to evaluate the effectiveness of implemented BMPs, and will be reported to the LARWQCB in future AMRs. LAILG is currently working with the CWH under the San Gabriel Nurseries, Irrigated Lands, and Open Space Water Quality Improvement Project (Grant Agreement No. 11-098-554). CWH will be implementing specific BMPs at selected growing operations in the San Gabriel Region, and evaluating concentrations of metals, pesticides, and nutrients before and after BMP implementation. LAILG will be assisting with sampling and communicating with CWH throughout the life of the grant to disseminate information to growers throughout the LAILG, in order to direct effective BMPs in a cost effective manner. Information will be provided to growers through mailers, emails, and posted on the NGA website.

To improve water quality, LAILG believes that all people involved in the growing process should be educated in water quality BMPs. LAILG will request that members keep guidance manuals on site and provide water quality BMP "tail gate" meetings with all staff. The "tail gate" meetings will be developed in English and Spanish, and LAILG is currently working on a slogan regarding water quality to be posted at enrolled facilities.

LAILG will also require that all discharge points be labeled at member's facilities. An understanding of where the runoff leaves the property during irrigation and storm events is crucial to developing successful BMPs.

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APPENDIX A

COMPLETE LIST OF LOS ANGELES COUNTY IRRIGATED LANDS GROUP – NURSERY GROWERS ASSOCIATION

APPENDIX B

HISTORICAL SAMPLING RESULTS

TABLE 9

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
GENERAL CHEMISTRY
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	General Chemistry												
			Ammonia	Chloride	Diss Ortho	Nitrate	Sulfate	Diss Phos	TDS	Total Ortho	Total Phos	TSS	CA Hardness, as CaCO3	Ca	Cu
NGA #4	LAILG-NGA4-5	3/21/11	0.69	10	0.31[EB]	1.5	8.3	0.52	110	0.31[EB]	2.6	810	62	25	0.230
NGA #124	LAILG-NGA124-6	3/21/11	0.36	9.7	1.8[EB]	6.7	24	1.8	240	1.8[EB]	2.7	620[FD]	61	24	0.045
NGA # 150	LAILG-NGA 150-5	3/21/11	3.7	28	12[EB]	**120**	60[MS-02]	32	**1,200**	12[EB]	32	110	300	120	0.031
NGA #19	LAILG-NGA19-6	3/23/11	0.54[MS-01]	110	0.86[EB,MS-01]	**55**	250	1.1	**1,200**	0.86[EB,MS-02]	3.4	550	440	180	0.090
Duplicate	LAILG-NGA-DUP	3/21/11	0.35	9.7	1.7[EB]	6.6	24	1.8	220	1.7[EB]	2.3	82	57	23	0.035
Equip Blank	LAILG-NGA-EB	3/21/11	nd	nd	2.0	nd	nd	nd	nd	2.0	nd	nd	0.37	0.15	0.0028
Field Blank	LAILG-NGA- FB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA168-6	3/17/12	0.89	82	1.1[O9]	**35**	**470**	1.7	**1,100**	1.1[O9]	8.4	1200	500	200	0.110
NGA #31	LAILG-NGA31-4	3/17/12	1.1	55	1.0[O9]	**12**	160	0.90	520	1.0[O9]	2.0	81	240	95	0.027
NGA #162	LAILG-NGA162-1	3/17/12	0.16	35	0.96[O9]	5.9	120	0.95	350	0.96[O9]	1.0	5	140	57	0.014
NGA #64	LAILG-NGA64-3	3/17/12	0.79[FD]	5.8	0.28[O9]	0.70[FD]	8.4	0.32	57	0.28[O9]	1.5[FD]	500[FD]	51	21	0.047
Duplicate	LAILG-NGA-DUP	3/17/12	0.60	5.4	0.25[O9]	1.3	8.6	0.27	46	0.25[O9]	1.1	380	44	18	0.049
Equip Blank	LAILG-NGA-EB	3/17/12	nd	nd	nd[O9]	nd	nd	nd	nd	nd[O9]	nd	nd	nd	nd	0.00073
Field Blank	LAILG-NGA- FB	3/17/12	nd	nd	nd[O9]	nd	nd	nd	nd	nd[O9]	nd	nd	nd	nd	0.00050
NGA #4	LAILG-NGA4-6	3/25/12	na*	69	1.1	**17**	52	1.0	320	1.1	1.4	34[FD]	100[FD]	42[FD]	0.051
NGA #170	LAILG-NGA170-1	3/25/12	0.31	18	0.65	1.6	14	0.60	130	0.65	0.86	100	61	24	0.030
NGA #176	LAILG-NGA176-2	3/25/12	0.30	29	0.99	8.7	43	0.99	220	0.99	2.2	550	80	32	0.066
NGA #210	LAILG-NGA210-2	3/25/12	0.20	110	1.4	0.57	**250**	1.3	**700**	1.4	2.8[MS-02]	86	270	110	0.0060
Duplicate	LAILG-NGA-DUP	3/25/12	2.2[P]	55	1.1	**17**	44	1.1	290	1.1	1.3	21	61	25	0.051
Equip Blank	LAILG-NGA-EB	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Field Blank	LAILG-NGA- FB	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CWIL Limits			See Table 7												
MDL			0.048	0.10	0.00022	0.020	0.10	0.0014	4.0	0.00022	0.0014	5	0.039	0.016	0.00027
RL			0.10	0.50	0.002	0.11	0.50	0.010	10	0.002	0.010	5	0.25	0.10	0.00050

Concentrations are reported in milligrams per liter (mg/L) Results above CWIL Limits are presented in **BOLD** Footnotes in **BOLD** indicate estimated concentration All other footnotes are for reference purposes, data was not deemed to be qualified as estimated by the QA Officer

CWIL Conditional waiver for irrigated lands, order #R4-2005-0080
EB Estimated concentration, constituent detected at greater than 10% in equipment blank
FD Estimated concentration Field Duplicate RPD >25%
FB Estimated concentration, constituent detected at greater than 10% in field blank
na* Amonia not analyzed due to sample collection via peristaltic pump
p Estimated concentration due to sample collection via peristaltic pump
O9 This sample was received with the EPA recommended holding time expired
MS-01 The spike recovery for this QC sample is outside of the established control limits possibly due to matrix interference
MS-02 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample

TABLE 9 cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
GENERAL CHEMISTRY
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	General Chemistry									
			Ammonia	Chloride	Diss Ortho	Nitrate	Sulfate	Total Diss Phos	TDS	Total Ortho	Total Phos	TSS
NGA #110	LAILG-NGA110-1	1/4/08	0.41	10.65	1.3052	2.36	18.22	1.74	162	1.81	2.033	24
NGA #189	LAILG-NGA189-1	1/4/08	0.59	7.29	0.6851	1.83	26.43	1.33	192	1.8	2.475	20
NGA #19	LAILG-NGA19-3	1/5/08	0.12	**157.52**	0.2125	0.44	**451.78**	0.96	**1,030**	1.26	1.173	84
NGA #124	LAILG-NGA124-3	1/5/08	15.5	28.3	0.9814	**28.34**^{Q1}	57.68	1.66	378	1.66	2.228	40
NGA #183	LAILG-NGA183-4	1/5/08	0.73	5.82	1.0874	1.4	6.36	0.23	106	1.29	1.729	510
NGA #4	LAILG-NGA4-2	1/23/08	0.24	1.45	0.1891	0.6	3.87	0.15	145	0.26	1.848	27
NGA #53	LAILG-NGA53-2	1/23/08	0.31	2.19	0.6425	0.76	14.92	0.82	nd	0.68	1.993	516
NGA #64	LAILG-NGA64-1	1/23/08	0.20	3.82	0.2818	3.83	101.1	0.3	nd	0.46	0.393	76
NGA #130	LAILG-NGA130-3	1/24/08	0.15	58.12	0.264	3.64	107.65	0.26	383	0.27	0.314	16
NGA #182	LAILG-NGA182-2	1/24/08	0.17^{M4}	7.39	0.6085	1.91^{M4}	14.22	0.76	218	0.81	0.825	64
NGA #168	LAILG-NGA168-4	1/25/08	0.38	65.9	3.053	**14.58**	117.44	3.07	**592**	5.45	2.363	1126.7
NGA # 19	LAILG-NGA 19-4	8/12/08	0.03^{FB}	104.03	1.1877	**12.65**	107.33	1.75	834	1.86	15.494	213
NGA # 4	LAILG-NGA 4-3	8/13/08	0.68	350.11	11.5262	**200.18**	219.52	69.7^{FD}	**2,238**	13.05	31.713	371^{FD}
Duplicate	LAILG-NGA-DUP	8/13/08	0.71	397.47	9.0404	**212**	252.22	34.87^{FD}	**2,350**	12	26.483	787^{FD}
NGA # 31	LAILG-NGA 31-1	9/23/08	0.13^{FD}	82.13^{EB,FB}	1.562^{H,FD}	**17.3**	134.93	1.472^{H}	602	2.34^{H}	1.813^{H,FD}	162
Duplicate	LAILG-NGA-DUP	9/23/08	0.37^{FD}	82.37^{EB,FB}	2.629^{H,FD}	**19.64**	136.19^{M4}	1.84^{H}	626	2.10^{H}	0.883^{H,M3}	127
NGA # 19	LAILG-NGA 19-5	11/26/08	0.96	115.72	1.507	**26.94**	126.35	1.356	748	4.69	4.884	995
NGA # 210	LAILG-NGA 210-1	11/26/08	0.11	155.92	1.892	0.92	**336.78**	2.185	**884**	3.23	3.722	542
NGA # 184	LAILG-NGA 184-1	11/26/08	0.46	31.44	0.609	3.12	17.92	0.643	206^{FB}	0.88	1.3	129.5
Duplicate	LAILG-NGA-DUP	11/26/08	0.48	32.51	0.616	3.1	18.68	0.65	214^{FB}	0.86	1.297	128
NGA # 124	LAILG-NGA 124-4	11/26/08	0.48	37.78	2.595	**28.36**	84.22	2.975	568	2.53	3.297	117
NGA # 31	LAILG-NGA 31-2	11/26/08	0.76	6.12	0.474	3.6	14.84	0.497	104^{FB}	1.63	1.94	353
NGA # 130	LAILG-NGA 130-4	11/26/08	0.68	95.81	0.228	**9.17**	183.82	0.652	616	0.8	1.046	97
NGA # 150	LAILG-NGA 150-3	11/26/08	**32.2**	65.92	31.579	**114.76**	**258.65**	49.896	**2,446**	37.69	48.048	45.5
NGA # 25	LAILG-NGA 25-1	11/26/08	0.85	21.99	1.1712	5.31	51.95	1.338	166^{FB}	1.38	1.641	168.5
NGA # 150	LAILG-NGA 150-4	12/15/08	15.75	47.27	26.0911	**268.53**	**125.27**^{M4}	24.935^{M4}	**1704**^{EB}	2.94	24.75^{M4}	333.5
NGA # 124	LAILG-NGA 124-5	12/15/08	1.68	26.51	24.4087	**40.43**	45.28	21.115	424^{EB}	3.66	2.706	115.5
NGA # 189	LAILG-NGA 189-2	12/15/08	0.54	31.28	0.6795	**9.87**	41.27	0.813	220^{EB}	0.99	1.261	111.3
NGA # 110	LAILG-NGA 110-2	12/15/08	0.31	28.59	1.186	**8.48**	50.87	1.469	328^{EB}	1.6	1.868	93
NGA # 31	LAILG-NGA 31-3	12/15/08	4.32	36.98	3.0228	**12.14**	57.58	2.148	364^{EB}	2.87	3.155	85.5
NGA # 184	LAILG-NGA 184-2	12/15/08	0.64	27.46	0.7339	4.41	33.57	0.502	240^{EB}	2.16	2.94	1,079
NGA # 130	LAILG-NGA 130-5	12/15/08	0.52	46.43	0.4392	**11.81**	67.8	0.481	258^{EB}	0.47	0.512	59.7
NGA # 178	LAILG-NGA 178-1	12/15/08	0.81	**85.04**	2.4077	**12.99**	**148.27**	2.648	**462**^{EB}	2.64	2.934	72.7^{FD}
Duplicate	LAILG-NGA-DUP	12/15/08	0.79	**102.32**	2.3169	**14.99**	**173.96**	2.604	**588**	2.62	2.944	49.3
NGA # 64	LAILG-NGA 64-2	12/15/08	1.15	12.38^{EB}	0.4307	5.39	35.34	0.49	232^{EB}	0.71	0.868	112
NGA # 168	LAILG-NGA 168-5	12/15/08	0.25	53.4	1.4434	**15.33**	130.75	1.568	492^{EB}	2.24	2.386	236
NGA # 4	LAILG-NGA 4-4	12/15/08	0.52	8.67^{EB}	1.0382	2.7	15.23	0.158	238^{EB}	2.33	2.231	295
CWIL Limits			See Table X									
MDL			0.01	0.01	0.0075	0.01	0.01	0.016	0	0.01	0.016	0.5
RL			0.05	0.05	0.01	0.05	0.05	0.05	5	0.01	0.05	5

data was not deemed to be qualified as estimated by the QA Officer

CWIL — Conditional waiver for irrigated lands, order #R4-2005-0080

EB — Estimated concentration, constituent detected at greater than 10% in equipment blank

FD — Estimated concentration Field Duplicate RPD >25%

FB — Estimated concentration, constituent detected at greater than 10% in field blank

H — Sample received and /or analyzed past the recommended holding time

M3 — Detection of the analyte was difficult due to matrix interference

M4 — Spike or surrogate compound recovery was out of control due to matrix interference. The associated method blank spike or surrogate compound was in control and therefore the sample data was reported without further clarification

Q1 — Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration

TABLE 9 cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
GENERAL CHEMISTRY
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	General Chemistry									
			Ammonia	Chloride	Diss Ortho	Nitrate	Sulfate	Total Diss Phos	TDS	Total Ortho	Total Phos	TSS
NGA #130	NGA-#130-LAILG-1	8/6/07	2.5	58.34	2.2457	**50.44**	43.04	2.29	**1,170**	2.05	2.305	6.3
NGA #183	NGA-#183-LAILG-1	8/6/07	0.04[J]	**209.97**	0.2336	0.13	177.83	0.23	223	0.23	0.264	11
NGA #19	NGA-#19-LAILG-1	8/13/07	1	108.57	2.2882	**10.84**	118.85	2.68	**772**	4.62	5.09	568
NGA #124	NGA-#124-LAILG-1	8/13/07	9.8	69.23	3.5006	**72.48**	206.25	4.31	**1,002**	3.96	4.627	99.5
NGA #168	NGA-#168-LAILG-1	8/13/07	0.4	81.85	1.977	4.93	131.16	2.28	**664**	2.13	3.243	122
NGA BLANK	NGA LAILG-BLANK-1	8/13/07	0.04[J]	nd	nd	nd	nd	nd	32	nd	nd	nd
NGA FBLI	NGA-LAILG-FBLI	8/21/07	0.01[J]	nd	nd	0.016[J]	nd	nd	nd	nd	nd	nd
NGA EQBLI	NGA-LAILG-EQBLI	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA-#150-LAILG	9/25/07	**52.4**	95.9	26.84	**355.6**	87	22.5	**2279**	23	24	57
NGA #183	ILG-#183	9/26/07	13.5[**B**]	51.63	1.4457[**B**]	**11.35**[**B**]	57.38[**B**]	1.64[**B**]	317[**B**]	2.24[**B**]	0.858[**B**]	28.7[**B**]
NGA #183-DUP	ILGNGA-#Dup	9/26/07	29[**B**]	55.3	4.193[**B**]	**26.77**[**B**]	89.17[**B**]	4.29[**B**]	434[**B**]	5.66[**B**]	4.488[**B**]	20[**B**]
NGA #EQUIP	ILGNGA-#Equip	9/26/07	nd	nd	nd	nd	nd	nd	5	nd	nd	nd
NGA #FIELD	ILGNGA-#FIELD-2	9/28/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168-2	ILGNGA-#168-2	9/28/07	2.2	172.52	1.582[C]	8.91	340.14[**E**]	2.15	**1,297**	3.51	5.379	504
NGA #168	NGA-#168-LAILG-3	11/30/07	0.48	101.43	2.1635	**30.81**	245.04[**E**]	2.67	**951**	3.13	3.548	nd
NGA #182	NGA #182-LAILG-1	12/7/07	0.4	**60.71**	1.7533	**19.85**	**159.87**[F]	1.52	**456**	1.41	1.554	20.3
NGA #182-DUP	NGA-Duplicate	12/7/07	0.42	59.2	1.8269	**19.71**	118.48[F]	1.51	**552**	1.56	1.523	20.7
NGA #4	NGA #4-LAILG-1	12/7/07	0.48	20.64	1.1355	4.03	20.39[F]	0.8	186	0.77	0.829	58
NGA #130	NGA #130-LAILG-2	12/7/07	0.3	**162.95**	1.0247	**26.16**	190[F]	0.91	**830**	0.74	0.94	51
NGA #150	NGA #150-LAILG-2	12/7/07	2.9	27.34	14.0243	**80.89**	56.59[F]	9.43	**780**	8.89	9.445	40
NGA #124	NGA-#124-LAILG-2	12/7/07	4.6	33.03	3.9247	**45.41**	59.24[F]	2.9	**550**	2.76	3.168	90
NGA #EQUIP	NGA-equip blank	12/7/07	nd	nd	nd	nd	1.13	nd	nd	nd	nd	nd
NGA #FIELD	Field Blank-2	12/18/07	nd	nd	nd	nd	nd	nd	6	nd	nd	nd
NGA #176	NGA-#176-LAILG-1	12/18/07	5.5	56.82	0.7145	3.85	293.12	0.54	**680**	12.21	3.447	6,168
NGA #183	LAILG-NGA#183-3	12/18/07	1.95	28.41	2.344	**11.37**	41.11	2.78	292	3.14	3.561	92
NGA #19	LAILG-NGA#19-2	12/18/07	1.4	162.66	11.2352	**86.7**	290.99	2.13	**1,292**	4.01	5.544	684
NGA #13	LAILG-NGA#13-1	12/18/07	1.6	5.46	0.2033	1.72	32.27	0.49	32	1.44	2.878	944
NGA #53	LAILG-NGA#53-1	12/18/07	0.7	4.72	0.2973	0.49	12.51	0.57	132	0.75	1.188	124
CWIL Limits			See Table X									
MDL			0.01	0.01	0.0075	0.01	0.01	0.016	0.1	0.01	0.016	0.5
RL			0.05	0.05	0.01	0.05	0.05	0.05	5	0.01	0.05	5

Concentrations are reported in milligrams per liter (mg/L) Results above CWIL Limits are presented in **BOLD** Footnotes in **BOLD** indicate estimated concentration All other footnotes are for reference purposes, data was not

CWIL	Conditional waiver for irrigated lands, order #R4-2005-0080
B	**Estimated concentration, since RPD of duplicate is >25%**
C	Procedural blank Matrix Spike recovery out of limits
E	ESTIMATED CONCENTRATION, matrix spike does not meet acceptance criteria
F	Sulfate detected in lab blank, at 1.09 mg/L
J	Estimated concentrations, results above MDL but less than RL

TABLE 10

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
CHLORINATED PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Chlorinated Pesticides																
			2,4'-DDD	2, 4'-DDE	2,4'-DDT	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	BHC-alpha	BHC-beta	BHC-delta	BHC-gamma	Chlordane-alpha	Chlordane-gamma	Dieldrin	Endosulfan Sulfate	Endosulphan-I	Endosulfan-II
NGA #4	LAILG-NGA4-5	3/21/11	nd	nd	nd	nd	**17**	**21**	nd	nd	nd	nd	nd	**13**	**18**	nd	nd	nd	nd
NGA #124	LAILG-NGA124-6	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**33**[FD]	nd	nd	nd
NGA # 150	LAILG-NGA 150-5	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA19-6	3/23/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**22**	nd	nd	nd
Equip Blank	LAILG-NGA-EB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Field Blank	LAILG NGA FB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA168-6	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[BSL]	nd
NGA #31	LAILG-NGA31-4	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[BSL]	nd
NGA #162	LAILG-NGA162-1	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[BSL]	nd
NGA #64	LAILG-NGA64-3	3/17/12	nd	nd	nd	nd	**28**[FD]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[BSL]	nd
Duplicate	LAILG-NGA-DUP	3/17/12	nd	nd	nd	nd	**51**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[BSL]	nd
Equip Blank	LAILG-NGA-EB	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[BSL]	nd
Field Blank	LAILG-NGA- FB	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[BSL]	nd
NGA #4	LAILG-NGA4-6	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #170	LAILG-NGA170-1	3/25/12	nd	nd	nd	nd	**9.6**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #176	LAILG-NGA176-2	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #210	LAILG-NGA210-2	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Equip Blank	LAILG-NGA-EB	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Field Blank	LAILG-NGA- FB	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CWIL Limits			nl	**0.59**	nl	**0.84**	**0.59**	**0.59**	nl	nl	nl	nl	nl	nl	nl	**0.14**	nl	nl	nl
MDL			5.0	5.0	5.0	5.0	2.5	3.1	1.5	1.8	3.1	2.5	2.1	5.0	5.0	2.1	5.0	1.7	1.9
RL			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL — Conditional waiver for irrigated lands, order #R4-2005-0080
FD — Estimated concentration. Field Duplicate RPD >25%
J — Estimated concentrations, results above MDL but less than RL
MDL — Method Detection Limits
RL — Reporting Limits
nd — not detected
nl — not listed

S4 — The surrogate recovery for this sample is outside of established control limits due to possible sample matrix effect
SGC — Surrogate recovery outside of control limits due to a possible matrix effect. The data was accepted based on valid recovery of the remaining surrogate
BS-L — The recovery of this analyte in the BS/LCS was below the control limit. Sample result is suspect

TABLE 10, cont.

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
CHLORINATED PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Chlorinated Pesticides										
			Aroclor XXXX, Sum of	Endrin	Endrin Aldehyde	Endrin Ketone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Mirex	Toxaphene	trans-Nonachlor	Total Chlordane
NGA #4	LAILG-NGA#4-2	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	**8.6**	**39.6**
NGA #124	LAILG-NGA#124-3	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 150	LAILG-NGA 150-3	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA#19-2	3/23/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Equip Blank	LAILG-NGA-EB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Field Blank	LAILG-NGA- FB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA168-6	3/17/12	nd	nd	nd	nd[S4]	nd	nd	nd	nd	nd	nd	nd
NGA #31	LAILG-NGA31-4	3/17/12	nd	nd	nd	nd[S4]	nd	nd	nd	nd	nd	nd	nd
NGA #162	LAILG-NGA162-1	3/17/12	nd	nd	nd	nd[S4]	nd	nd	nd	nd	nd	nd	nd
NGA #64	LAILG-NGA64-3	3/17/12	nd	nd	nd	nd[S4]	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	3/17/12	nd	nd	nd	nd[S4]	nd	nd	nd	nd	nd	nd	nd
Equip Blank	LAILG-NGA-EB	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Field Blank	LAILG-NGA- FB	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA4-6	3/25/12	nd	nd	nd	nd[SGC]	nd	nd	nd	nd	nd	nd	nd
NGA #170	LAILG-NGA170-1	3/25/12	nd	nd	nd	nd[SGC]	nd	nd	nd	nd	nd	nd	nd
NGA #176	LAILG-NGA176-2	3/25/12	nd	nd	nd	nd[SGC]	nd	nd	nd	nd	nd	nd	nd
NGA #210	LAILG-NGA210-2	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	3/25/12	nd	nd	nd	nd[S4]	nd	nd	nd	nd	nd	nd	nd
Equip Blank	LAILG-NGA-EB	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Field Blank	LAILG-NGA- FB	3/25/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CWIL Limits			nl	nl	nl	nl	nl	nl	nl	nl	**0.75**	nl	**0.59**
MDL			40	2.8	3.0	2.0	1.7	1.9	5.0	5.0	120	5.0	5.0
RL			100	5.0	5.0	20.0	5.0	5.0	5.0	5.0	500	5.0	5.0

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL	Conditional waiver for irrigated lands, order #R4-2005-0080	S4	The surrogate recovery for this sample is outside of established control limits due to possible sample matrix effect
MDL	Method Detection Limits		
J	Estimated concentrations, results above MDL but less than RL	SGC	Surrogate recovery outside of control limits due to a possible matrix effect. The data was accepted based on valid recovery of the remaining surrogate
RL	Reporting Limits		
nd	not detected	BS-L	The recovery of this analyte in the BS/LCS was below the control limit. Sample result is suspect
nl	not listed		
FD	Estimated concentration. Field Duplicate RPD >25%		

TABLE 10, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
CHLORINATED PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Chlorinated Pesticides																
			2,4-DDD	2,4'-DDE	2,4'-DDT	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	BHC-alpha	BHC-beta	BHC-delta	BHC-gamma	Chlordane-alpha	Chlordane-gamma	cis-Nonachlor	DCPA	Dicofol	Dieldrin
NGA #110	LAILG-NGA110-1	1/4/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #189	LAILG-NGA189-1	1/4/08	nd	nd	nd	nd	**22.5**	nd	nd	nd	nd	nd	nd	nd	6	nd	nd	nd	nd
NGA #19	LAILG-NGA19-3	1/5/08	nd	nd	nd	nd	nd	**5.6**	nd	nd	nd	nd	nd	2.3[J]	nd	nd	nd	nd	nd
NGA #124	LAILG-NGA124-3	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183	LAILG-NGA183-4	1/5/08	nd	nd	nd	**12**	**26.5**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA4-2	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #53	LAILG-NGA53-2	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #64	LAILG-NGA64-1	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	LAILG-NGA130-3	1/24/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #182	LAILG-NGA182-2	1/24/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA168-4	1/25/08	nd	nd	nd	nd	**19.2**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA19-4	8/12/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.0[J]	2.1[J]	nd	nd	nd	nd
NGA #4	LAILG-NGA 4-3	8/13/08	nd	nd[M4]	nd	nd	nd	nd	nd	nd	nd[M4]	nd	nd	9.2[Q2,J,FD]	9.8[M4,Q2,J,FD]	12.7[Q2,J,FD]	nd	485.7[Q1,Q2,J,FD]	nd[M4]
Duplicate	LAILG-NGA-DUP	8/13/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	29.8[FD]	41.3[FD]	44.3[FD]	nd	1064.3[FD]	nd
NGA #31	LAILG-NGA 31-1	9/23/08	nd	nd	nd	nd	**13.5**	nd	nd	nd	nd	nd	nd	nd	7.6[FD]	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	9/23/08	nd	nd	nd	nd	**13.6**	nd	nd	nd	nd	nd	nd	nd	11.6[FD]	nd	nd	nd	nd
NGA #19	LAILG-NGA 19-5	11/26/08	nd	nd	nd	nd	**24.7**[Q6]	nd	nd	nd	nd	nd	nd	7.5[J,Q3]	6.1	nd	nd	nd	nd
NGA #210	LAILG-NGA 210-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #184	LAILG-NGA 184-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	LAILG-NGA 124-4	11/26/08	nd	nd	nd	nd	**19.3**	nd	nd	nd	nd	nd	nd	3.7[J]	2.8[J]	nd	nd	nd	nd
NGA #31	LAILG-NGA 31-2	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	7.8	6.3	nd	nd	nd	nd
NGA #130	LAILG-NGA 130-4	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	6.7[J]	nd	nd
NGA #150	LAILG-NGA 150-3	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #25	LAILG-NGA 25-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.6	4.9[J]	1.0[J]	nd	nd	nd
NGA #150	LAILG-NGA 150-4	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	LAILG-NGA 124-5	12/15/08	nd	nd	nd	**10.4**	nd	nd	nd	nd	nd	nd	nd	5.5	4.2[J]	nd	6.3[J]	nd	nd
NGA #189	LAILG-NGA 189-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #110	LAILG-NGA 110-2	12/15/08	nd	nd	nd	**6.2**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #31	LAILG-NGA 31-3	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #184	LAILG-NGA 184-2	12/15/08	nd	nd	nd	nd	**22**	nd	nd	nd	nd	nd	nd	nd	4.2[J]	nd	nd	nd	nd
NGA #130	LAILG-NGA 130-5	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #178	LAILG-NGA 178-1	12/15/08	nd	nd[M4]	nd[M4]	nd[M4]	**25.3**[FD]	nd[M4]	nd	nd	nd[M4]	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	12/15/08	nd	nd	nd	nd	nd[FD]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #64	LAILG-NGA 64-2	12/15/08	nd	nd	nd	nd	**43.3**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA 168-5	12/15/08	nd	nd	nd	nd	**11.8**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA 4-4	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	35.1	34.2	6.5	nd	nd	nd
CWIL Limits			nl	nl	nl	0.59	0.59	0.83	0.13	3.9	14	nl	19	a)	a)	a)	nl	nl	0.14
MDL			1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	50	1
RL			5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	100	5

Concentrations are reported in nanograms per liter (ng/L). **Results above CWIL Limits are presented in BOLD.** Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL Conditional waiver for irrigated lands order #R4-2005-0080
FD Estimated concentration. Field Duplicate RPD >25%
J Estimated concentrations, results above MDL but less than RL
MDL Method Detection Limits
RL Reporting Limits
nd not detected
nl not listed

M4 Spike or surrogate compound recovery was out of control due to matrix interference. The associated method blank spike or surrogate compound was in control and therefore the sample data was reported without further clarification

Q1 Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration

Q2 The sample RPD was out of control. Sample is heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices

Q3 RPD values are not accurate and not applicable because the results for R1 and/or R2 are lower than ten times the MDL

Q6 CRG's Quality Assurance Program Document allows for 5% of the target compounds greater than ten times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and cannot be attributed to a spe

TABLE 10, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
CHLORINATED PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Endosulfan Sulfate	Endosulphan-I	Endosulfan-II	Endrin	Endrin Aldehyde	Endrin Ketone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Kepone	Mirex	Oxychlordane	Perthane	Toxaphene	trans-Nonachlor	Total Chlordane
NGA #110	LAILG-NGA#110-1	1/4/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #189	LAILG-NGA#189-1	1/4/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	8.9	**14.9**
NGA #19	LAILG-NGA#19-2	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	14	**16.3**
NGA #124	LAILG-NGA#124-3	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	17.1	**17.1**
NGA #183	LAILG-NGA#183-4	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA#4-2	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #53	LAILG-NGA#53-2	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #64	LAILG-NGA#64-1	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	LAILG-NGA#130-3	1/24/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #182	LAILG-NGA#182-2	1/24/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA#168-4	1/25/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 19	LAILG-NGA19-4	8/12/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.3[J]	**4.4[J]**
NGA # 4	LAILG-NGA 4-3	8/13/08	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd	nd[M4]	nd	nd	nd	nd[M4]	nd[M4]	nd	7.1[M4,Q2,FD]	**38.8**
Duplicate	LAILG-NGA-DUP	8/13/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	27[FD]	**124.4**
NGA # 31	LAILG-NGA 31-1	9/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	7.6	**15.2**
Duplicate	LAILG-NGA-DUP	9/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	8.5	**20.1**
NGA # 19	LAILG-NGA 19-5	11/26/08	nd	nd	nd	nd	nd	339.4[Q2]	nd	nd	nd	nd	nd	nd	nd	nd	6.6[J,Q3]	**20.2[J]**
NGA # 210	LAILG-NGA 210-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 184	LAILG-NGA 184-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 124	LAILG-NGA 124-4	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.7[J]	**8.2[J]**
NGA # 31	LAILG-NGA 31-2	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.8[J]	**17.9[J]**
NGA # 130	LAILG-NGA 130-4	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 150	LAILG-NGA 150-3	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 25	LAILG-NGA 25-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd[Q6]	nd	nd	nd	nd	nd	4.7[J]	**16.2[J]**
NGA # 150	LAILG-NGA 150-4	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 124	LAILG-NGA 124-5	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.9[J]	**13.6[J]**
NGA # 189	LAILG-NGA 189-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 110	LAILG-NGA 110-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 31	LAILG-NGA 31-3	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 184	LAILG-NGA 184-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**4.2[J]**
NGA # 130	LAILG-NGA 130-5	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 178	LAILG-NGA 178-1	12/15/08	nd	nd[M4]	nd[M4]	nd	nd	nd	nd	nd	nd[M4]	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 64	LAILG-NGA 64-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**666**	nd	nd
NGA # 168	LAILG-NGA 168-5	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 4	LAILG-NGA 4-4	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	23.7	**99.5**
CWIL Limits			nl	**5.6**	**5.6**	**36**	nl	nl	**0.21**	**0.1**	nl	nl	nl	**a)**	nl	**25**	**a)**	**0.57**
MDL			1	1	1	1	1	1	1	1	1	1	1	1	5	10	1	1
RL			5	5	5	5	5	5	5	5	5	5	5	5	10	50	5	5

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL — Conditional waiver for irrigated lands, order #R4-2005-0080
MDL — Method Detection Limits
J — Estimated concentrations, results above MDL but less than RL
RL — Reporting Limits
nd — not detected
nl — not listed
FD — Estimated concentration. Field Duplicate RPD >25%

M4 — Spike or surrogate compound recovery was out of control due to matrix interference. The associated method blank spike or surrogate compound was in control and therefore the sample data was reported without further clarification

Q2 — The sample RPD was out of control. Sample is heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices

Q3 — RPD values are not accurate and not applicable because the results for R1 and/or R2 are lower than ten times the MDL

Q6 — CRG's Quality Assurance Program Document allows for 5% of the target compounds greater than ten times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and cannot be attributed to a spe

TABLE 10, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
CHLORINATED PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Chlorinated Pesticides																
			2,4'-DDD	2,4-DDE	2,4'-DDT	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	BHC-alpha	BHC-beta	BHC-delta	BHC-gamma	Chlordane-alpha	Chlordane-gamma	cis-Nonachlor	DCPA	Dicofol	Dieldrin
NGA #130	NGA-#130-LAILG-1	8/6/07	nd	nd	nd	**22.8**	**34.7**	**16.1**	nd	nd	nd	nd	nd	nd	nd	nd	nd	68.3[J]	nd
NGA #183	NGA-#183-LAILG-1	8/6/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	NGA-#19-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	NGA-#124-LAILG-1	8/13/07	nd	nd	nd	**22.5**	**15.3**	**13.7**	nd	nd	nd	nd	nd	nd	nd	12.1	nd	nd	nd
NGA #168	NGA-#168-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA BLANK	NGA LAILG-BLANK-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA FBL1	NGA-LAILG-FBL1	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA EQBL1	NGA-LAILG-EQBL1	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA-#150-LAILG	9/25/07	nd	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183	ILG-#183	9/26/07	25[B]	nd	31.8[B]	**90.3**[B]	**113.8**[B]	**51.1**[B,D]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183-DUP	ILGNGA-#Dup	9/26/07	nd[B]	nd	nd[B]	**64.5**[B]	**70.2**[B]	nd[B,D]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #EQUIP	ILGNGA-#Equip	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	ILGNGA-#FIELD-2	9/28/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168-2	ILGNGA-#168-2	9/28/07	nd	nd	17.3	**16.7**	nd	**84**[D]	nd	nd	nd	nd	nd	nd	nd	nd	nd	52[J]	nd
NGA #168	NGA-#168-LAILG-3	11/30/07	nd	nd	nd	nd	**2.7**[J]	nd[C]	nd	nd	nd	nd	nd	1.4[J]	1.4[J]	1.1[J]	nd	nd	nd
NGA #182	NGA #182-LAILG-1	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #182-DUP	NGA-Duplicate	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	NGA #4-LAILG-1	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	NGA #130-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA #150-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	**35.2**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	NGA-#124-LAILG-2	12/7/07	nd	nd	nd	**6.0**	**22.1**	**9.3**	nd	nd	nd	nd	nd	1.1[J]	3.0[J]	nd	nd	63.7[J]	nd
NGA #EQUIP	NGA-equip blank	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	Field Blank-2	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #176	LAILG-NGA#176-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183	LAILG-NGA#183-3	12/18/07	36.8	5.7	20.6	**224.8**	**344.4**	**73.5**	nd	nd	nd	nd	nd	nd	nd	nd	nd	51.5[J]	nd
NGA #19	LAILG-NGA#19-2	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #13	LAILG-NGA#13-1	12/18/07	nd	nd	nd	nd	**32.7**	nd	nd	nd	nd	nd	nd	18	19.2	19.6	nd	nd	nd
NGA #53	LAILG-NGA#53-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CWIL Limits			nl	nl	nl	**0.59**	**0.59**	**0.83**	**0.13**	**3.9**	**14**	nl	**19**	**a)**	**a)**	**a)**	nl	nl	**0.14**
MDL			1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	50	1
RL			5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	100	5

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in **BOLD**. Footnotes in **BOLD** indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL	Conditional waiver for irrigated lands order #R4-2005-0080	MDL	Method Detection Limits
A	Component of total chlordane, see total chlordane for CWIL limitations	RL	Reporting Limits
B	**Estimated concentration, RPD of duplicate sample >25%**	nd	not detected
C	Procedural blank Matrix Spike recovery out of limits	nl	not listed
D	Procedural blank Matrix Spike Duplicate RPD out of limits	na	not analyzed
J	Estimated concentrations, results above MDL but less than RL		

TABLE 10, cont

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
CHLORINATED PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Endosulfan Sulfate	Endosulphan-I	Endosulfan-II	Endrin	Endrin Aldehyde	Endrin Ketone	Heptachlor	Heptachlor Epoxide	Methoxychlor	Kepone	Mirex	Oxychlordane	Perthane	Toxaphene	trans-Nonachlor	Total Chlordane
NGA #130	NGA-#130-LAILG-1	8/6/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd
NGA #183	NGA-#183-LAILG-1	8/6/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd
NGA #19	NGA-#19-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd
NGA #124	NGA-#124-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	21.9	**34**
NGA #168	NGA-#168-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd
NGA BLANK	NGA LAILG-BLANK-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA FBLI	NGA-LAILG-FBLI	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA EQBLI	NGA-LAILG-EQBLI	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA-#150-LAILG	9/25/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd[D]	nd	nd	nd	nd
NGA #183	ILG-#183	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd[D]	nd	nd	nd	nd
NGA #183-DUP	ILGNGA-#Dup	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd[D]	nd	nd	nd	nd
NGA #EQUIP	ILGNGA-#Equip	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	ILGNGA-#FIELD-2	9/28/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168-2	ILGNGA-#168-2	9/28/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd[D]	nd	nd	nd	nd
NGA #168	NGA-#168-LAILG-3	11/30/07	nd	nd	nd	nd	nd	nd	nd	nd	nd[C]	nd	nd	nd	nd	nd	1.7[J]	**5.6[J]**
NGA #182	NGA #182-LAILG-1	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #182-DUP	NGA-Duplicate	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	NGA #4-LAILG-1	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	NGA #130-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA #150-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	NGA-#124-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	7.3	**11.4**
NGA #EQUIP	NGA-equip blank	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	Field Blank-2	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #176	LAILG-NGA#176-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[C]	nd	nd	nd	nd	nd	nd
NGA #183	LAILG-NGA#183-3	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[C]	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA#19-2	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[C]	nd	nd	nd	nd	2.4[J]	**2.4[J]**
NGA #13	LAILG-NGA#13-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[C]	nd	nd	nd	nd	54.1	**110.9**
NGA #53	LAILG-NGA#53-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd[C]	nd	nd	nd	nd	nd	nd
CWIL Limits			nl	**5.6**	**5.6**	**36**	nl	nl	**0.21**	**0.1**	nl	nl	nl	a)	nl	**25**	a)	**0.57**
MDL			1	1	1	1	1	1	1	1	1	1	1	1	5	10	1	1
RL			5	5	5	5	5	5	5	5	5	5	5	5	10	50	5	5

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL	Conditional waiver for irrigated lands, order #R4-2005-0080	MDL	Method Detection Limits
A	Component of total chlordane, see total chlordane for CWIL limitations	RL	Reporting Limits
B	**Estimated concentration, RPD of duplicate sample >25%**	nd	not detected
C	Procedural blank Matrix Spike recovery out of limits	nl	not listed
D	Procedural blank Matrix Spike Duplicate RPD out of limits	na	not analyzed
J	Estimated concentrations, results above MDL but less than RL		

TABLE 11

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
ORGANOPHOSPHORUS PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Organophosphorus Pesticides																								Sample Notes
			Azinphos methyl	Bolstar	Chlorpyrifos	Coumaphos	Demeton-o	Demeton-s	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethoprop	Ethyl parathion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl Parathion	Mevinphos	Naled	Phorate	Ronnel	Sirophos	Tokuthion	Trichloronate	
NGA #4	LAILG-NGA4-5	3/21/11	nd	nd	**11000**[E1]	nd	nd[Q-02]	nd[Q-02]	**1000**[E1]	nd	nd[MS-05]	nd[Q-02]	nd	nd	nd	nd	**7300**[E1]	nd	nd	nd	nd	nd	nd	nd	nd	nd	S4
NGA #124	LAILG-NGA124-6	3/21/11	nd	nd	10	nd	nd[Q-02]	nd[Q-02]	nd	nd	nd[MS-05]	nd[Q-02]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
NGA # 150	LAILG-NGA 150-5	3/21/11	nd	nd	33	nd	nd[Q-02]	nd[Q-02]	nd	nd	nd[MS-05]	nd[Q-02]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
NGA #19	LAILG-NGA19-6	3/23/11	nd[MS-05,BS-1]	nd[MS-05]	25	nd	nd	nd	nd	nd	nd[MS-05]	nd[BS-01]	nd	nd	nd[MS-05]	nd[BS-01]	nd	nd[Q-08]	nd	nd	nd[MS-05]	nd	nd	nd	nd	nd	
Duplicate	LAILG-NGA-DUP	3/21/11	nd	nd	11	nd	nd[Q-02]	nd[Q-02]	nd	nd	nd[MS-05]	nd[Q-02]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Equip Blank	LAILG-NGA-EB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Field Blank	LAILG-NGA-FB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
NGA #168	LAILG-NGA168-6	3/17/12	nd[BS-01]	nd	nd	nd[Q-08,A-01]	nd	nd	nd	nd	nd	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd[Q-08]	nd	nd	nd	nd	nd	
NGA #31	LAILG-NGA31-4	3/17/12	nd[BS-01]	nd	nd	nd[Q-08,A-01]	nd	nd	nd	nd	nd	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd[Q-08]	nd	nd	nd	nd	nd	
NGA #162	LAILG-NGA162-1	3/17/12	nd[BS-01]	nd	nd	nd[Q-08,A-01]	nd	nd	nd	nd	nd	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd[Q-08]	nd	nd	nd	nd	nd	
NGA #64	LAILG-NGA64-3	3/17/12	nd[BS-01]	nd	nd	nd	nd	nd	nd	nd	nd[MS-05]	nd	nd	nd	nd[MS-05]	nd	nd	nd	nd	nd	nd	nd	nd	nd[BS-01]	nd	nd	
Duplicate	LAILG-NGA-DUP	3/17/12	nd[BS-01]	nd	nd	nd[Q-08,A-01]	nd	nd	nd	nd	nd	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd[Q-08]	nd	nd	nd	nd	nd	
Equip Blank	LAILG-NGA-EB	3/17/12	nd[BS-01]	nd	nd	nd[Q-08,A-01]	nd	nd	nd	nd	nd	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd[Q-08]	nd	nd	nd	nd	nd	
Field Blank	LAILG-NGA-FB	3/17/12	nd[BS-01]	nd	nd	nd[Q-08,A-01]	nd	nd	nd	nd	nd	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd	nd[Q-08]	nd[Q-08]	nd	nd[Q-08]	nd	nd	nd	nd	nd	
NGA #4	LAILG-NGA4-6	3/25/12	nd[BS-01]	nd	**44,000**	nd[BS-01]	nd[BS-01]	nd[BS-01]	nd[Q-12]	nd	nd[MS-05]	nd	nd	nd	nd[Q-08,BS-01]	nd	**2,100**[Q-08,A-01a]	nd[Q-08]	nd[BS-01]	nd	nd[BS-01]	nd	nd	nd[BS-01]	nd	nd	
NGA #170	LAILG-NGA170-1	3/25/12	nd[MS-05,BS-1]	nd	nd	nd[BS-01]	nd	nd	nd	nd	nd[MS-05]	nd	nd	nd[MS-05]	nd[Q-08]	nd	nd	nd[Q-08]	nd[MS-05]	nd	nd[Q-08,A-01]	nd	nd	14[BS-01]	nd	nd	
NGA #176	LAILG-NGA176-2	3/25/12	nd[MS-05,BS-1]	nd	nd	nd[BS-01]	nd	nd	nd	nd	nd[MS-05]	nd	nd	nd[MS-05]	nd[Q-08]	nd	nd	nd[Q-08]	nd[MS-05]	nd	nd[Q-08,A-01]	nd	nd	nd[BS-01]	nd	nd	
NGA #210	LAILG-NGA210-2	3/25/12	nd[MS-05,BS-1]	nd	nd	nd[BS-01]	nd	nd	nd	nd	nd[MS-05]	nd	nd	nd[MS-05]	nd[Q-08]	nd	41	nd[Q-08]	nd[MS-05]	nd	nd[Q-08,A-01]	nd	nd	nd[BS-01]	nd	nd	
Duplicate	LAILG-NGA-DUP	3/25/12	nd[BS-01]	nd	**42,000**	nd[BS-01]	nd[BS-01]	nd[BS-01]	nd[Q-12]	nd	nd[MS-05]	nd	nd	nd	nd[Q-08,BS-01]	nd	**2,000**[Q-08,A-01a]	nd[Q-08]	nd[BS-01]	nd	nd[BS-01]	nd	nd	nd[BS-01]	nd	nd	
Equip Blank	LAILG-NGA-EB	3/25/12	nd[BS-01]	nd	nd	nd[BS-01]	nd[BS-01]	nd[BS-01]	nd[Q-12]	nd	nd[MS-05]	nd	nd	nd	nd[Q-08,BS-01]	nd	nd[Q-08,A-01a]	nd[Q-08]	nd[BS-01]	nd	nd[BS-01]	nd	nd	nd[BS-01]	nd	nd	
Field Blank	LAILG-NGA-FB	3/25/12	nd[BS-01]	nd	nd	nd[BS-01]	nd[BS-01]	nd[BS-01]	nd[Q-12]	nd	nd[MS-05]	nd	nd	nd	nd[Q-08,BS-01]	nd	nd[Q-08,A-01a]	nd[Q-08]	nd[BS-01]	nd	nd[BS-01]	nd	nd	nd[BS-01]	nd	nd	
CWIL Limits			nl	nl	25	nl	nl	nl	100	nl	nl (1)	nl (1)	nl (1)	nl	nl	nl	nl (1)	nl	nl (1)	nl	nl	nl (1)	nl	nl	nl	nl	
MDL			5.5	4.6	6.9	5.1	10	10	5.2	2.9	6.2	10	6.7	5.4	2.9	3.8	7.6	5.8	6.3	4.2	7.6	3.0	4.1	3.1	7.8	6.7	
RL			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits or ALB guidelines are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be

CWIL — Conditional waiver for irrigated lands order #R4-2005-0080
MDL — Method Detection Limits
RL — Reporting Limits
FD — Estimated concentration. Field Duplicate RPD >25%
nl — not listed
nd — not detected
(1) — Although no discharge limits were set in the CWIL, the US EPA has set an aquatic life benchmark for this constituent. See Table 7

E1 — The concentration indicated for this analyte is an estimated value above the calibration range
S4 — The surrogate recovery for this sample is outside of established control limits due to possible sample matrix effect
Q-08 — High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit
A-01 — High bias in MS and MSD. However, ll-ccv has an acceptable recovery. The batch was accepted since all samples were ND for this analyte
A-01a — Low recovery in BS and high recoveries in both MS/MSD. However, LL-ccv has an acceptable recovery. The batch was accepted since samples were either ND or yielded very high results
Q-12 — The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data
Q-02 — Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as non-detect
MS-05 — The spike recovery and/or RPD were outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable
BS-1 — The recovery of this analyte in the BS/LCS was below the control limit. Sample result is suspect
BS-01 — The recovery of this analyte in the BS/LCS was outside the control limits. The sample result was accepted based on another acceptable BS/LCS and/or MS and MSD that meet BS criteria

TABLE 11, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
ORGANOPHOSPHORUS PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Organophosphorus Pesticide: Bolstar	Chlorpyrifos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethoprop	Fenchlorphos	Fensulfothion	Fenthion	Malathion	Merphos	Methyl Parathion	Mevinphos	Phorate	Tetrachlorvinphos	Tokuthion	Trichloronate
NGA #110	LAILG-NGA110-1	1/4/08	nd	**88.5**	nd	**534.8**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #189	LAILG-NGA189-1	1/4/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA19-3	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	LAILG-NGA124-3	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183	LAILG-NGA183-4	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA4-2	1/23/08	nd	**153.8**	nd	**2,212.1**	nd	nd	nd	nd	nd	nd	nd	**15,453.2**	nd	nd	nd	nd	nd	nd	nd
NGA #53	LAILG-NGA53-2	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #64	LAILG-NGA64-1	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	LAILG-NGA130-3	1/24/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #182	LAILG-NGA182-2	1/24/08	nd	nd	nd	nd	nd	13.3	nd	nd	nd	nd	nd	19.9	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA168-4	1/25/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA19-4	8/12/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA 4-3	8/13/08	nd[M4]	nd[M4]	nd[M4]	**6,058.9[Q1,Q2,FD]**	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]	**1,148,630[Q1]**	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]	nd[M4]
Duplicate	LAILG-NGA-DUP	8/13/08	nd	nd	nd	**13586.8[FD]**	nd	nd	nd	nd	nd	nd	nd	**1,117,145**	nd	nd	nd	nd	nd	nd	nd
NGA #31	LAILG-NGA 31-1	9/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	9/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA 19-5	11/26/08	nd	**130.1**	nd	32.6	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #210	LAILG-NGA 210-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	56.4	nd	nd	nd	nd	nd	nd	nd
NGA #184	LAILG-NGA 184-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Duplicate	LAILG-NGA-DUP	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	LAILG-NGA 124-4	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #31	LAILG-NGA 31-2	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	LAILG-NGA 130-4	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	LAILG-NGA 150-3	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #25	LAILG-NGA 25-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	LAILG-NGA 150-4	12/15/08	nd	**90.2**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	LAILG-NGA 124-5	12/15/08	nd	21	nd	98.5	nd	nd	nd	nd	nd	nd	nd	**85.3**	nd	nd	nd	nd	nd	nd	nd
NGA #189	LAILG-NGA 189-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	26.9	nd	nd	nd	nd	nd	nd	nd
NGA #110	LAILG-NGA 110-2	12/15/08	nd	nd	nd	79.8	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #31	LAILG-NGA 31-3	12/15/08	nd	**44.5**	nd	nd	nd	nd	nd	nd	nd	nd	nd	**3,433.9**	nd	nd	nd	nd	nd	nd	nd
NGA #184	LAILG-NGA 184-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	LAILG-NGA 130-5	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	**85.2**	nd	nd	nd	nd	nd	nd	nd
NGA #178	LAILG-NGA 178-1	12/15/08	nd	nd	nd	nd	nd	nd	nd[M4]	nd	nd	nd[M4]	nd	nd	nd	nd	nd	nd	nd[M4]	nd	nd
Duplicate	LAILG-NGA-DUP	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #64	LAILG-NGA 64-2	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA 168-5	12/15/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	38.9	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA 4-4	12/15/08	nd	**590.9**	nd	**859**	nd	nd	nd	nd	nd	nd	nd	**102,357.2**	nd	nd	nd	nd	nd	nd	nd
CWIL Limits			nl	25	nl	100	nl	nl[(1)]	nl[(1)]	nl[(1)]	nl	nl	nl	nl[(1)]	nl	nl[(1)]	nl	nl[(1)]	nl	nl	nl
MDL			2	1	1	2	3	3	1	1	2	1	2	3	1	1	8	6	2	3	1
RL			4	2	2	4	6	6	2	2	4	2	4	6	2	2	16	12	4	6	2

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits or ALB guidelines are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes; data was not deemed to be

CWIL Conditional waiver for irrigated lands, order #R4-2005-0080
MDL Method Detection Limits
RL Reporting Limits
FD Estimated concentration. Field Duplicate RPD >25%
nl not listed
nd not detected
(1) Although no discharge limits were set in the CWIL, the US EPA has set an aquatic life benchmark for this constituent. See Table 7

M4 Spike or surrogate compound recovery was out of control due to matrix interference. The associated method blank spike or surrogate compound was in control and therefore the sample data was reported without further clarification.

Q1 Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration.

Q2 The sample RPD was out of control. Sample is heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices.

TABLE 11, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
ORGANOPHOSPHORUS PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Organophosphorus Pesticides																		
			Bolstar	Chlorpyrifos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethoprop	Fenchlorphos	Fensulfothion	Fenthion	Malathion	Merphos	Methyl Parathion	Mevinphos	Phorate	Tetrachlorvinphos	Tokuthion	Trichloronate
NGA #130	NGA-#130-LAILG-1	8/6/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183	NGA-#183-LAILG-1	8/6/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	NGA-#19-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	NGA-#124-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	NGA-#168-LAILG-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA BLANK	GA LAILG-BLANK	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA FBL1	NGA-LAILG-FBL1	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA EQBL1	NGA-LAILG-EQBL1	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA-#150-LAILG	9/25/07	nd	nd	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd	nd	nd	nd
NGA #183	ILG-#183	9/26/07	nd	nd	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd[D]	nd	nd	nd
GA #183-DU	ILGNGA-#Dup	9/26/07	nd	nd	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd[D]	nd	nd	nd
NGA #EQUIP	ILGNGA-#Equip	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	ILGNGA-#FIELD-2	9/28/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168-2	ILGNGA-#168-2	9/28/07	nd	nd	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd	nd[D]	nd	nd	nd	nd[D]	nd	nd	nd
NGA #168	NGA-#168-LAILG-3	11/30/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	8.9	nd	nd	nd	nd	nd	nd	nd
NGA #182	NGA #182-LAILG-1	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
GA #182-DU	NGA-Duplicate	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	NGA #4-LAILG-1	12/7/07	nd	1,122.6	nd	175.2	11.3	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	NGA #130-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA #150-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	NGA-#124-LAILG-2	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #EQUIP	NGA-equip blank	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	Field Blank-2	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #176	NGA-#176-LAILG-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183	LAILG-NGA#183-3	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA#19-2	12/18/07	nd	nd	nd	15	nd	nd	nd	nd	nd	nd	nd	2,291.3	nd	nd	nd	nd	nd	nd	nd
NGA #13	LAILG-NGA#13-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #53	LAILG-NGA#53-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CWIL Limits			nl	25	nl	**100**	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl
MDL			2	1	1	2	3	3	1	1	2	1	2	3	1	1	8	6	2	3	1
RL			4	2	2	4	6	6	2	2	4	2	4	6	2	2	16	12	4	6	2

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes; data was not deemed to be qualified as such.

CWIL Conditional waiver for irrigated lands, order #R4 2005-0080
D Procedural blank Matrix Spike Duplicate RPD out of limits
nl not listed

TABLE 12

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
PYRETHROID PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Pyrethroid Pesticides														Sample Notes
			Allethrin	Bifenthrin	Cyfluthrin	Cypermethrin	Deltamethrin	Dichloran	Esfenvalerate	Fenvalerate	L-Cyhalothrin	Pendimethalin	Permethrin	Prallethrin	Sumithrin	Telfluthrin	
NGA #4	LAILG-NGA4-5	3/21/11	nd	22	nd	nd	nd	nd	nd	nd	nd	3.3	**1600**[E1]	nd	nd	nd	S4
NGA #124	LAILG-NGA124-6	3/21/11	nd	88	nd	78[FD]	nd	nd	nd	nd	nd	3.8	nd	nd	nd	nd	
NGA # 150	LAILG-NGA 150-5	3/21/11	nd	480[E1]	nd	nd	nd	nd	nd	nd	nd	nd	**48**	nd	nd	nd	
NGA #19	LAILG-NGA19-6	3/23/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	29	nd	nd	nd	nd	
Duplicate	LAILG-NGA-DUP	3/21/11	nd	74	nd	57	nd	nd	nd	nd	nd	3.7	nd	nd	nd	nd	
Equip Blank	LAILG-NGA-EB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Field Blank	LAILG-NGA- FB	3/21/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
NGA #168	LAILG-NGA168-6	3/17/12	nd	54	nd	nd	nd	nd[BS-03]	nd	nd	nd	18	nd	nd	nd	nd	S4
NGA #31	LAILG-NGA31-4	3/17/12	nd	2.9	nd	nd	nd	nd[BS-03]	nd	nd	nd	33	nd	nd	nd	nd	S4
NGA #162	LAILG-NGA162-1	3/17/12	nd	11	nd	nd	230	nd[BS-03]	nd	nd	nd	23	nd	nd	nd	nd	S4
NGA #64	LAILG-NGA64-3	3/17/12	nd	nd	nd	nd	nd	nd[BS-03]	nd	nd	nd	22	nd	nd	nd	nd	S4
Duplicate	LAILG-NGA-DUP	3/17/12	nd	nd	nd	nd	nd	nd[BS-03]	nd	nd	nd	20	nd	nd	nd	nd	S4
Equip Blank	LAILG-NGA-EB	3/17/12	nd	nd	nd	nd	nd	nd[BS-03]	nd	nd	nd	nd	nd	nd	nd	nd	
Field Blank	LAILG-NGA- FB	3/17/12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	S4
NGA #4	LAILG-NGA4-6	3/25/12	nd[BS-03]	9.7	nd	nd	nd	nd	nd	nd	nd	nd[FD,BS-03]	**100**[FD]	nd	nd	nd[BS-03]	S4
NGA #170	LAILG-NGA170-1	3/25/12	nd[BS-03]	5.8	nd	nd	nd	nd	nd	nd	nd	11[BS-03]	nd[BS-03]	nd	nd	nd[BS-03]	S4
NGA #176	LAILG-NGA176-2	3/25/12	nd[BS-03]	270	nd	nd	nd	nd	nd	nd	nd	35[BS-03]	nd[BS-03]	nd	nd	nd[BS-03]	S4
NGA #210	LAILG-NGA210-2	3/25/12	nd[BS-03]	nd	nd	nd	nd	80	nd	nd	nd	2.7[BS-03]	nd[BS-03]	nd	nd	nd[BS-03]	S4
Duplicate	LAILG-NGA-DUP	3/25/12	nd[BS-03]	12	nd	nd	nd	nd	nd	nd	nd	4.7[BS-03]	**130**[BS-03]	nd	nd	nd[BS-03]	S4
Equip Blank	LAILG-NGA-EB	3/25/12	nd[BS-03]	nd	nd	nd	nd	nd	nd	nd	nd	nd[BS-03]	nd[BS-03]	nd	nd	nd[BS-03]	S4
Field Blank	LAILG-NGA- FB	3/25/12	nd[BS-03]	nd	nd	nd	nd	nd	nd	nd	nd	nd[BS-03]	nd[BS-03]	40	nd	nd[BS-03]	S4
CWIL Limits			nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl [(1)]	nl	nl	nl	
MDL			0.85	0.79	0.83	0.66	1.9	0.80	0.98	0.98	1.2	0.50	5.0	0.92	2.4	0.93	
RL			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0	10	2.0	

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in BOLD. Footnotes in BOLD indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL: Conditional waiver for irrigated lands, order #R4-2005-0080
FD: Estimated concentration. Field Duplicate RPD >25%
nl: not listed
nd: not detected
(1): Although no discharge limits were set in the CWIL, the US EPA has set an aquatic life benchmark for this constituent. See Table 8

E1: The concentration indicated for this analyte is an estimated value above the calibration range
S4: The surrogate recovery for this sample is outside of established control limits due to possible sample matrix effect
Q-12: The RPD result exceeded the QC control limits, however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data
BS-L: The recovery of this analyte in the BS/LCS was below the control limit. Sample result is suspect
BS-03: The recovery of this analyte in the BS/LCS was outside the control limits. The sample result was accepted based on another acceptable BS/LCS and/or MS and MSD that meet BS criteria
A-01a: Low recovery in BS and high recoveries in both MS/MSD. However,LL ccv has an acceptable recovery. The batch was accepted since samples were either ND or yielded very high results

TABLE 12, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
PYRETHROID PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Pyrethroid Pesticides												
			Allethrin	Bifenthrin	Cyfluthrin	Cypermethrin	Danitol	Deltamethrin	Esfenvalerate	Fenvalerate	Fluvalinate	L-Cyhalothrin	Permethrin	Prallethrin	Resmethrin
NGA #110	LAILG-NGA110-1	1/4/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #189	LAILG-NGA189-1	1/4/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	LAILG-NGA19-3	1/5/08	nd	nd	nd	nd	6.8	nd	nd	nd	nd	nd	nd	nd	nd
NGA #124	LAILG-NGA124-3	1/5/08	nd	581.5	38	nd	1,207.20	66.4	nd	nd	5.5	nd	nd	nd	nd
NGA #183	LAILG-NGA183-4	1/5/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #4	LAILG-NGA4-2	1/23/08	nd	nd	15.8	nd	1,178.40	157.1	nd	nd	13.6	24.5	nd	nd	nd
NGA #53	LAILG-NGA53-2	1/23/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #64	LAILG-NGA64-1	1/23/08	nd	30.2	15.1	nd	2.1	nd	nd	nd	nd	nd	nd	nd	nd
NGA #130	LAILG-NGA130-3	1/24/08	nd	143.4	4.2	nd	33.2	nd	nd	nd	3.8	nd	nd	nd	nd
NGA #182	LAILG-NGA182-2	1/24/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	LAILG-NGA168-4	1/25/08	nd	187.9	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA # 19	LAILG-NGA19-4	8/12/08	nd	nd	nd	nd	82	nd	nd	nd	9.8	nd	nd	nd	nd
NGA # 4	LAILG-NGA 4-3	8/13/08	nd[M4]	43.8[M4,Q2,FD]	nd[FD]	nd[M4]	23,704.6[Q1,Q2,FD]	147.3[M4,Q2,FD]	nd[M4]	nd	2,488.1[Q1,FD]	10.6[Q2,FD]	359.3[Q1,Q2,FD]	nd[M4]	nd[M4]
Duplicate	LAILG-NGA-DUP	8/13/08	nd	306.5[FD]	4.9[FD]	nd	77368.5[FD]	306.9[FD]	nd	nd	1519.6[FD]	37.5[FD]	1,376.0[FD]	nd	nd
NGA # 31	LAILG-NGA 31-1	9/23/08	nd	nd	4.3	nd	71.9	nd	nd	nd	nd	2.4[EB]	nd	nd	nd
Duplicate	LAILG-NGA-DUP	9/23/08	nd	nd	4.9	nd	63.6	nd	nd	nd	nd	2.6[EB]	nd	nd	nd
NGA # 19	LAILG-NGA 19-5	11/26/08	nd[M4]	34.9[M4]	34.4[M4]	nd[M4]	1,813.4[M4]	nd[M4]	3.3[M4,Q3]	3.3[J,M4,Q3,EB]	274.4[M4]	10.2[M4,FB]	62.3[M4,Q3]	nd	nd[M4]
NGA # 210	LAILG-NGA 210-1	11/26/08	nd	134.5	15.6	23.3	92.9	nd	1.8[J]	4.1[EB]	nd	7.6[FB]	nd	nd	nd
NGA # 184	LAILG-NGA 184-1	11/26/08	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.1[FB]	nd	nd	nd
Duplicate	LAILG-NGA-DUP	11/26/08	nd	nd	nd	nd	nd	nd	2.0	0.9[EB]	nd	6.0[FB]	nd	nd	nd
NGA # 124	LAILG-NGA 124-4	11/26/08	nd	4,420.1	650.2	nd	121.6	26.6	0.9[J]	1.0[J,EB]	2,309.8	5.9[FB]	nd	nd	nd
NGA # 31	LAILG-NGA 31-2	11/26/08	nd	33.9	23.6	nd	382.1	nd	nd	4.3[EB]	nd	16.3[FB]	nd	nd	nd
NGA # 130	LAILG-NGA 130-4	11/26/08	nd	407.5	nd	nd	180.5	nd	nd	1.5[J,EB]	70.0	2.1[FB]	**1,096.2**	nd	nd
NGA # 150	LAILG-NGA 150-3	11/26/08	nd	8,031.3	nd	nd	nd	nd	3.2	6.4	2,238.7	10.9[FB]	**780.0**	nd	nd
NGA # 25	LAILG-NGA 25-1	11/26/08	nd	nd	30.1	12.3	0.7[J,EB]	nd	nd	nd	nd	89.6[FB]	nd	nd	nd
NGA # 150	LAILG-NGA 150-4	12/15/08	nd	82,902.4	66.3	51.9	34.1	nd	8.4	9.3	6,642.4	nd	**2,116.6**	nd	nd
NGA # 124	LAILG-NGA 124-5	12/15/08	nd	17,280.2	220.1	nd	346.4	95.7	0.5[J]	1.4[J,EB]	1,234.8	3.9[EB,FB]	**98.3**	nd	nd
NGA # 189	LAILG-NGA 189-2	12/15/08	nd	nd	nd	nd	0.7[J]	nd	nd	1.0[J,EB]	4.4[EB,FB]	nd	nd	nd	nd
NGA # 110	LAILG-NGA 110-2	12/15/08	nd	55.2	nd	nd	nd	nd	nd	0.5[J,EB]	11.5[EB,FB]	nd	nd	nd	nd
NGA # 31	LAILG-NGA 31-3	12/15/08	nd	nd	nd	nd	48.5	nd	nd	0.9[J,EB]	nd	3.2[EB,FB]	nd	nd	nd
NGA # 184	LAILG-NGA 184-2	12/15/08	nd	26.2	nd	nd	nd	nd	0.5[J]	2.0[EB]	nd	2.0[EB,FB]	nd	nd	nd
NGA # 130	LAILG-NGA 130-5	12/15/08	nd	101.8	nd	nd	35.6	nd	nd	nd	28.8	nd	**210.7**	nd	nd
NGA # 178	LAILG-NGA 178-1	12/15/08	nd	nd[Q3]	nd	nd	1.4[J]	nd[Q3]	0.8[J]	1.0[J,EB]	nd[Q3]	1.7[J,EB,FB]	nd	nd[M4]	nd[M4]
Duplicate	LAILG-NGA-DUP	12/15/08	nd	nd	nd	nd	1.1[J]	nd	0.6[J]	1[J,EB]	3.0[EB,FB]	nd	nd	nd	nd
NGA # 64	LAILG-NGA 64-2	12/15/08	nd	81.3	nd	nd	26.9	nd	1.8[J]	nd	nd	nd	nd	nd	nd
NGA # 168	LAILG-NGA 168-5	12/15/08	nd	1,333.2	31.9	nd	0.8[J]	nd	nd	nd	9.3[EB,FB]	0.7[J,EB,FB]	nd	nd	nd
NGA # 4	LAILG-NGA 4-4	12/15/08	nd	311.5	133.6	133.6	93,137.5	452.3	3.6	nd	1,547	44.5	**824.4**	nd	nd
CWIL Limits			nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl (1)	nl	nl
MDL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	5
RL			2	2	2	2	2	2	2	2	2.0	2	25	2	25

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in BOLD. **Footnotes in BOLD indicate estimated concentration.** All other footnotes are for reference purposes, data was not deemed to be qualified as estim.

CWIL Conditional waiver for irrigated lands, order #R4-2005-0080
EB Estimated concentration, constituent detected at greater than 10% in equipment blank
FD Estimated concentration. Field Duplicate RPD >25%
nl not listed
nd not detected
J Estimated concentration, results above MDL but below RL
(1) Although no discharge limits were set in the CWIL, the US EPA has set an aquatic life benchmark for this constituent. See Table 7

M4 Spike or surrogate compound recovery was out of control due to matrix interference. The associated method blank spike or surrogate compound was in control and therefore the sample data was reported without further clarification
Q1 Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration
Q2 The sample RPD was out of control. Sample is heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices
Q3 RPD values are not accurate and not applicable because the results for R1 and/or R2 are lower than ten times the MDL

TABLE 12, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
PYRETHROID PESTICIDES
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Pyrethroid Pesticides												
			Allethrin	Bifenthrin	Cyfluthrin	Cypermethrin	Danitol	Deltamethrin	Esfenvalerate	Fenvalerate	Fluvalinate	L-Cyhalothrin	Permethrin	Prallethrin	Resmethrin
NGA #130	NGA-#130-LAILG-1	8/6/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183	NGA-#183-LAILG-1	8/6/07	nd	21[J]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #19	NGA-#19-LAILG-1	8/13/07	nd	13.7[J]	24.2[J]	nd	465.5	nd	nd	nd	5[J]	nd	444.9	nd	nd
NGA #124	NGA-#124-LAILG-1	8/13/07	nd	62.2	nd	nd	74.7	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	NGA-#168-LAILG-1	8/13/07	nd	1348.2	19.8[J]	nd	nd	nd	nd	nd	nd	11.1[J]	nd	nd	nd
NGA BLANK	NGA LAILG-BLANK-1	8/13/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA FBLI	NGA-LAILG-FBLI	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA EQBLI	NGA-LAILG-EQBLI	8/21/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #150	NGA-#150-LAILG	9/25/07	nd	19,426.6	153.4	nd	nd	nd	nd	nd	515.2	nd	5,208.8	nd	nd
NGA #183	ILG-#183	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #183-DUP	ILGNGA-#Dup	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #EQUIP	ILGNGA-#Equip	9/26/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	ILGNGA-#FIELD-2	9/28/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168-2	ILGNGA-#168-2	9/28/07	nd	964	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #168	NGA-#168-LAILG-3	11/30/07	nd	nd	1.4[J]	1.6[J]	463.1	nd	nd	nd	nd	nd	nd	nd	nd
NGA #182	NGA #182-LAILG-1	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na
NGA #182-DUP	NGA-Duplicate	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na
NGA #4	NGA #4-LAILG-1	12/7/07	nd	10.7	30.6	nd	1,940.5	69	nd	nd	1.6[J]	55.1	nd	nd	na
NGA #130	NGA #130-LAILG-2	12/7/07	nd	944.6	14.2	nd	73.5	nd	nd	nd	33.5	nd	327.3	nd	na
NGA #150	NGA #150-LAILG-2	12/7/07	nd	1,566.7	nd	nd	nd	nd	nd	nd	17.9	nd	237.8	nd	na
NGA #124	NGA-#124-LAILG-2	12/7/07	nd	3,083.4	183.8	nd	150.5	180.3	nd	nd	32.3	3.1	70.9	nd	na
NGA #EQUIP	NGA-equip blank	12/7/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #FIELD	Field Blank-2	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NGA #176	NGA-#176-LAILG-1	12/18/07	nd	870.5	nd	nd	3.4	nd	nd	nd	nd	nd	nd	nd	na
NGA #183	LAILG-NGA#183-3	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na
NGA #19	LAILG-NGA#19-2	12/18/07	nd	nd	11.5	nd	449.5	nd	nd	nd	6.6	nd	1,346.4	nd	na
NGA #13	LAILG-NGA#13-1	12/18/07	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na
NGA #53	LAILG-NGA#53-1	12/18/07	nd	8	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.5	na
CWIL Limits			nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl	nl
MDL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
RL			2	2	2	2	2	2	2	2	2	2	2	2	2

Concentrations are reported in nanograms per liter (ng/L). Results above CWIL Limits are presented in **BOLD**. Footnotes in **BOLD** indicate estimated concentration. All other footnotes are for reference purposes, data was not deemed to be qualified as estim

CWIL Conditional waiver for irrigated lands, order #R4-2005-0080
na not analyzed
J Estimated concentration: results above MDL but below RL

TABLE 13

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
TOXICITY RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Ceriodaphnia		Fathead Minnow		Selenastrum	TIE	
			Survival	Reproduction	Survival	Growth	Growth	Date	Result
NGA #4	LAILG-NGA4-5	3/21/11	**0.00%**	Y	**15.00%**	Y	Y	3/27/12	Non-polar organics and organophosphates
NGA #124	LAILG-NGA124-6	3/21/11	90.00%	N	100.00%	N	N		
NGA # 150	LAILG-NGA 150-5	3/21/11	100.00%	N	100.00%	N	Y	3/27/12	Organophosphates
NGA #19	LAILG-NGA19-6	3/23/11	100.00%	Y	**0.00%**	Y	Y	3/27/12	TIE was initiated, did not show an observed effect
NGA #168	LAILG-NGA168-6	3/17/12	100.00%	N	95.00%	N	N		
NGA #31	LAILG-NGA31-4	3/17/12	70.00%	Y	90.00%	N	Y	3/24/12	Non-polar organic compounds and metals
NGA #162	LAILG-NGA162-1	3/17/12	100.00%	N	96.67%	N	N		
NGA #64	LAILG-NGA64-3	3/17/12	90.00%	N	100.00%	N	N		

Y significantly different from control group
N no significant diffence between control group
P partial toxicity Toxicity high enough to exhibit effects, but not significant enough to initiate a succesful TIE (Typically needs a TUc of greater than 2)
NR not required

TABLE 13, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
TOXICITY RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Ceriodaphnia		Fathead Minnow		Selenastrum	TIE	
			Survival	Reproduction	Survival	Growth	Growth	Date	Result
NGA #110	LAILG-NGA110-1	1/4/08	90.00%	N	80.00%	N	N		
NGA #189	LAILG-NGA189-1	1/4/08	100.00%	N	91.67%	N	Y		
NGA #19	LAILG-NGA19-3	1/5/08	TIE initiated based in results from sample LAILG-NGA#19-2					1/8/08	TIE was initiated, did not show an observed effect
NGA #124	LAILG-NGA124-3	1/5/08	TIE initiated based in results from sample NGA #124-LAILG-2					1/8/08	TIE was initiated, did not show an observed effect
NGA #4	LAILG-NGA4-2	1/23/08	TIE initiated based in results from sample NGA #4-LAILG-1					1/24/08	Non-polar organic compounds
NGA #53	LAILG-NGA53-2	1/23/08	TIE initiated based in results from sample NGA #53-LAILG-1					1/24/08	TIE was initiated, did not show an observed effect
NGA #64	LAILG-NGA64-1	1/23/08	100.00%	Y	91.67%	N	N		
NGA #182	LAILG-NGA182-2	1/23/08	TIE initiated based in results from sample NGA #182-LAILG-1					1/24/08	TIE was initiated, did not show an observed effect
NGA #19	LAILG-NGA 19-4	8/12/08	90.00%	N	NR		NR		
NGA # 4	LAILG-NGA 4-3	8/13/08	**0.00%**	Y	NR		NR	8/26/08	Non-polar organics and particulate-bound toxicants
NGA # 31	LAILG-NGA 31-1	9/23/08	**20.00%**	Y	NR		NR		
NGA # 19	LAILG-NGA19-5	11/26/08	70.00%	Y	NR		NR		
NGA # 210	LAILG-NGA 210-1	11/26/08	90.00%	P	98.33%	N	N		
NGA # 184	LAILG-NGA 184-1	11/26/08	80.00%	P	100.00%	N	N		
NGA # 124	LAILG-NGA 124-4	11/26/08	**0.00%**	Y	NR		NR	12/9/08	Volatile compounds
NGA #31	LAILG-NGA 31-2	11/26/08	80.00%	N	98.33%	N	P		
NGA # 130	LAILG-NGA 130-4	11/26/08	NR		NR		N		
NGA # 150	LAILG-NGA 150-3	11/26/08	NR		NR		P		
NGA # 25	LAILG-NGA 25-1	11/26/08	80.00%	Y	100.00%	N	N		
NGA # 124	LAILG-NGA 124-5	12/15/08	**0.00%**	Y	NR		NR	12/16/08	TIE was initiated, did not show an observed effect
NGA # 189	LAILG-NGA 189-2	12/15/08	NR		NR		Y	1/15/09	Particulate Bound toxicants and OP compounds
NGA # 110	LAILG-NGA 110-2	12/15/08	90.00%	N	NR		NR		
NGA # 178	LAILG-NGA 178-1	12/15/08	100.00%	N	100.00%	N	N		
NGA # 64	LAILG-NGA 64-2	12/15/08	90.00%	P	NR		NR		
NGA # 168	LAILG-NGA 168-5	12/15/08	90.00%	P	NR		NR		
NGA # 4	LAILG-NGA 4-4	12/15/08	**0.00%**	Y	NR		NR	12/16/08	Metals,copper,cadmium,zink,manganese,lead,and nickle

Y significantly different from control group
N no significant diffence between control group
P partial toxicity Toxicity high enough to exhibit effects, but not significant enough to initiate a succesful TIE (Typically needs a TUc of greater than 2)
NR not required

TABLE 13, cont.

SUMMARY OF HISTORICAL SAMPLES COLLECTED UNDER CWIL ORDER R4-2005-0080
TOXICITY RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample #	Date	Ceriodaphnia		Fathead Minnow		Selenastrum	TIE	
			Survival	Reproduction	Survival	Growth	Growth	Date	Result
NGA #130	NGA-#130-LAILG-1	8/6/07	100.00%	N	93.33%	N	Y		ns
NGA #183	NGA-#183-LAILG-1	8/6/07	100.00%	N	93.33%	N	N		
NGA #19	NGA-#19-LAILG-1	8/13/07	80.00%	N	98.30%	N	N		
NGA #124	NGA-#124-LAILG-1	8/13/07	100.00%	N	98.30%	N	N		
NGA #168	NGA-#168-LAILG-1	8/13/07	**0.00%**	Y	98.30%	N	Y	9/28/08	100% survival
NGA #150	NGA-#150-LAILG	9/25/07	**0.00%**	Y	98.33%	N	Y		ns
NGA #168	NGA-#168-LAILG-3	11/30/07	100.00%	N	100.00%	N	N		
NGA #182	NGA #182-LAILG-1	12/7/07	**0.00%**	Y	98.33%	N	Y		IP
NGA #4	NGA #4-LAILG-1	12/7/07	**0.00%**	Y	**40.00%**	Y	Y		IP
NGA #130	NGA #130-LAILG-2	12/7/07	100.00%	N	98.33%	N	N		
NGA #150	NGA #150-LAILG-2	12/7/07	100.00%	N	98.33%	N	Y		IP
NGA #124	NGA-#124-LAILG-2	12/7/07	**0.00%**	Y	100.00%	N	Y		IP
NGA #176	NGA-#176-LAILG-1	12/18/07	100.00%	N	100.00%	N	N		
NGA #183	LAILG-NGA#183-3	12/18/07	100.00%	N	100.00%	N	N		
NGA #19	LAILG-NGA#19-2	12/18/07	**50.00%**	Y	100.00%	N	N		IP
NGA #13	LAILG-NGA#13-1	12/18/07	**10.00%**	Y	**21.67%**	Y	N		IP
NGA #53	LAILG-NGA#53-1	12/18/07	100.00%	N	81.67%	N	N		

Y Significantly different from control group
N No significant diffence between control group
ns not enough runoff for follow up sample
IP In progress

TABLE 14

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Sample Type	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow (ft/s)	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #4	LAILG-NGA#4-5	3/21/11	Bucket	10:40	0.1250	0.01	11.0	9.81	43	na*	85
				10:44		0.01	11.1	9.64	25	na*	181
				10:50		0.01	11.2	9.29	25	na*	197
NGA #124	LAILG-NGA#124-6	3/21/11	Bucket	08:00	nm	9	10.4	7.89	292	na*	54.9
				08:05		11	10.5	7.82	282	na*	49.7
				08:10		13	10.5	7.87	268	na*	16.8
NGA #150	LAILG-NGA#150-5	3/21/11	Bucket	10:47	0.0185	4	15.4	6.70	1170	na*	34.7
				10:49		4	16.0	6.61	1127	na*	33.7
				10:50		5	15.9	6.59	1163	na*	38.0
NGA #19	LAILG-NGA#19-6	3/23/11	Grab	16:58	nm	nm	13.9	8.88	1.32	na*	999
				17:00		nm	14.2	8.83	1.05	na*	999
				17:02		nm	12.6	8.87	1.19	na*	999
NGA #31	LAILG-NGA#31-4	3/17/12	Grab	14:30	0.6042	0.88	13.83	7.73	99.9	9.33	220
				14:34		0.84	13.63	7.75	99.9	8.77	174
				14:38		0.94	13.44	7.95	98.6	8.51	181
NGA #64	LAILG-NGA#64-3	3/17/12	Grab	09:50	0.0833	1.3	14.7	5.5	14.3	10.48	352
				09:53		1.2	14.5	4.9	9.4	10.58	623
				09:58		1.3	14.5	5.2	4.2	10.43	179
NGA #162	LAILG-NGA#162-1	3/17/12	Grab	13:00	nm	nm	13.37	6.94	66.2	10.67	3.3
				13:02		nm	13.42	7.24	65.9	10.33	1.6
				13:05		nm	13.32	7.46	66.1	9.93	1.2
NGA #168	LAILG-NGA#168-6	3/17/12	Grab	11:15	0.0556	0.71	13.78	6.1	84.5	10.68	>800
				11:18		0.52	13.83	6.8	85.9	10.05	>800
				11:21		0.71	13.77	7.1	82.2	9.62	>800
NGA #4	LAILG-NGA#4-6	3/25/12	Pump	12:50	No flow measurements due to access restrictions		16.21	5.63	43.7	8.52	44.9
				12:52			16.31	5.74	39.3	8.58	35.7
				12:54			15.95	5.89	37.1	8.89	42.9

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.

ft/s feet per second; mg/L milligrams per liter

°C degrees celcius; NTU Nephelometric Turbidity Units

uS microsiemens

na* Not analyzed, DO meter was not functioning properly at the time of field sampling

TABLE 14, cont.

SUMMARY OF SAMPLES COLLECTED - CWIL ORDER R4-2010-0186 YEAR 1
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Sample Type	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow (ft/s)	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #170	LAILG-NGA#170-1	3/25/12	Grab	14:35	nm	nm	13.81	6.18	25.8	10.59	512
				14:37		nm	13.98	6.32	22.1	10.23	452
				14:40		nm	13.73	6.27	19.8	10.31	446
NGA #176	LAILG-NGA#176-2	3/25/12	Grab	15:15	nm	nm	13.17	6.49	39.7	10.69	>800
				15:17		nm	13.16	6.63	38.4	10.41	>800
				15:21		nm	12.73	6.44	40.2	10.69	>800
NGA #210	LAILG-NGA#210-2	3/25/12	Grab	17:45	nm	nm	13.21	7.22	0.129	10.55	5.8
				17:47		nm	13.35	7.75	0.130	10.40	3.8
				17:50		nm	13.88	7.93	0.133	10.24	5.5

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3•width•depth.

ft/s feet per second; mg/L milligrams per liter
°C degrees celcius; NTU Nephelometric Turbidity Units
uS microsiemens; nm not monitored

TABLE 12

SUMMARY OF SAMPLES COLLECTED - YEAR 2
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow (ft/s)	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #110	LAILG-NGA#110-1	1/4/08	9:40	0.33	0.70	16.1	7.35	253	7.32	25.9
			9:42		0.70	16.9	7.29	259	7.89	25.6
			9:45		0.70	16.8	7.38	310	9.00	29.1
NGA #189	LAILG-NGA#189-1	1/4/08	10:27	0.11	1.60	13.8	7.40	178	7.10	152.0
			10:30		1.60	14.2	7.81	180	7.10	153.0
			10:33		1.60	14.0	6.99	179	7.11	156.0
NGA #19	LAILG-NGA#19-3	1/6/08	nm	0.0035	0.5	10.8	8.20	159	10.84	0
			nm		0.5	10.1	8.22	160	11.16	0
			nm		0.5	10.0	8.22	160	11.03	0
NGA #124	LAILG-NGA#124-3	1/5/08	9:15	0.33	0.75	12.9	7.68	818	10.32	85
			9:17		0.7	12.4	7.65	823	10.5	69
			9:18		0.71	12.4	7.63	819	10.47	66
NGA #183	LAILG-NGA#183-4	1/5/08	5:50	2.67	1	12.1	8.34	152	10.33	3
			5:54		1	12.1	7.9	137	10.18	0
			5:58		1	11.9	7.79	128	10.15	0
NGA #4	LAILG-NGA#4-2	1/23/08	8:16	0.014	0.33	12.1	6.59	53.1	8.35	23.6
			8:18		0.33	12.8	6.5	53	8.9	19.7
			8:20		0.33	13	6.57	53.7	7.8	20.4
NGA #53	LAILG-NGA#53-2	1/23/08	7:46	0.11	1.6	11.9	6.61	82.9	8.32	250
			7:48		1.6	12.6	6.65	86.2	7.77	232
			7:50		1.6	13	6.73	86.8	7.58	227
NGA #64	LAILG-NGA#64-1	1/23/08	6:40	nm	nm	12.8	6.59	181	7.42	81.5
			6:42		nm	12.5	6.66	123	8.7	85.9
			6:44		nm	12.7	6.62	121	7.87	84
NGA #130	LAILG-NGA#130-3	1/24/08	13:20	0.44	nm	12.5	6.94	622	6.75	0.14
			13:22		nm	12.9	7.1	605	6.75	0.11
			13:25		nm	13.2	7.13	603	6.69	0.58

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.

ft/s feet per second
mg/L milligrams per liter
°C degrees celcius
NTU Nephelometric Turbidity Units
uS microsiemens

TABLE 12, cont.

SUMMARY OF SAMPLES COLLECTED - YEAR 2
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow (ft/s)	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #182	LAILG-NGA#182-2	1/24/08	16:00	0.220	1.33	11.2	7.08	137	7.52	6.9
			16:05		1.33	10.9	6.94	137	8	10.7
			16:08		1.33	10.8	6.99	137	7.97	7.7
NGA #168	LAILG-NGA#168-4	1/25/08	11:58	0.165	nm	14.9	7.83	832	8.98	168
			12:00		nm	15	7.93	830	8.31	162
			12:02		nm	15.1	7.95	829	9.23	155
NGA #19	LAILG NGA 19-4	8/12/08	8:32	0.007	0.67	21.1	8.07	1039	63.0	203.0
			8:34		0.89	21.3	7.87	1083	60.3	239.0
			8:36		0.58	22.7	7.93	1567	49.4	145.0
NGA #4	LAILG NGA 4-3	8/13/08	12:21	0.003	0.10	34.7	7.03	2.25	54.4	156.0
			12:43		0.08	33.6	7.21	2.31	77.5	125.0
			12:47		0.06	33.7	7.05	2.39	58.5	121.0
NGA #31	LAILG NGA 31-1	9/23/08	17:00	0.056	0.60	28.0	7.46	892	108.1	39.6
			17:02		0.75	27.6	7.93	743	116.0	36.0
			17:03		1.00	26.8	8.03	805	115.3	31.7
NGA #184	LAILG NGA 184-1	11/26/08	4:30	0.208	0.84	14.1	7.24	342	11.0	96.0
			4:32		0.89	14.1	7.19	319	11.2	98.1
			4:35		1.25	14.0	7.22	315	10.6	88.3
NGA #25	LAILG NGA 25-1	11/26/08	5:50	0.222	1.56	16.2	7.02	405	39.0	32.0
			6:00		1.53	16.5	7.00	396	50.9	26.0
			6:15		1.59	16.3	6.83	389	48.5	33.0
NGA #124	LAILG NGA 124-4	11/26/08	6:30	0.065	0.36	14.0	7.79	0.780	10.58	94.0
			6:35		0.44	14.0	7.72	0.779	10.47	93.0
			6:40		0.48	14.0	7.73	0.779	10.61	95.0
NGA #150	LAILG NGA 150-3	11/26/08	8:25	0.088	0.103	16.2	6.05	3.59	9.97	10.15
			8:28		0.108	16.1	6.07	3.59	9.91	13.80
			8:32		0.100	16.1	6.07	3.58	9.90	9.80

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.

ft/s feet per second; mg/L milligrams per liter
°C degrees celcius; NTU Nephelometric Turbidity Units
uS microsiemens; nm not monitored

TABLE 12, cont.

SUMMARY OF SAMPLES COLLECTED - YEAR 2
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow (ft/s)	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #19	LAILG NGA 19-5	11/26/08	11:30	0.013	0.82	15.4	7.04	706	10.5	264
			11:32		0.87	15.4	7.88	684	11.9	221
			11:33		1.33	15.4	7.09	535	10.0	203
NGA #130	LAILG NGA 130-4	11/26/08	9:30	0.007	0.47 gpm	15	8.05	0.87	8.95	205
			9:35		0.46 gpm	15	8.04	0.86	8.71	214
			9:40		0.48 gpm	15	8.02	0.83	7.56	213
NGA #31	LAILG NGA 31-2	11/26/08	12:07	0.148	4.64	17.3	8.20	0.18	7.80	999
			12:12		4.98	17.3	8.17	0.58	7.83	999
			12:17		4.54	17.2	8.10	0.16	7.39	531
NGA #210	LAILG NGA 210-1	11/26/08	9:00	0.013	0.980	16.5	7.85	11.51	8.02	16.80
			9:02		0.793	16.3	7.31	8.30	9.01	6.43
			9:04		0.925	15.6	8.37	5.75	8.59	4.08
NGA #150	LAILG-NGA 150-4	12/15/08	14:10	0.042	0.29	11.9	6.12	2.25	0.71	27.6
			14:13		0.32	11.7	6.12	2.25	0.75	139.0
			14:17		0.24	11.6	6.12	2.26	0.75	153.0
NGA #124	LAILG-NGA 124-5	12/15/08	17:20	0.024	0.78	11.0	7.17	559	2.34	162
			17:24		0.89	10.4	7.23	554	2.51	143
			17:29		0.83	10.4	7.25	541	2.56	160
NGA #189	LAILG-NGA 189-2	12/15/08	11:00	-	-	9.1	7.08	4.14	0.16	68.0
			11:05		-	8.9	7.23	3.79	0.19	67.3
			11:07		-	8.8	7.25	3.87	0.20	67.0
NGA # 110	LAILG-NGA 110-2	12/15/08	13:05	0.009	0	11.0	6.85	442	0.40	23.8
			13:12		0	10.7	7.27	406	0.42	25.2
			13:15		0	10.8	7.45	439	0.42	25.1
NGA #31	LAILG-NGA 31-3	12/15/08	13:00	0.115	1.17	14.8	7.17	439	4.80	230
			13:01		1.42	15.1	7.13	511	4.60	211
			13:02		1.17	15.2	6.98	436	4.80	225

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.

gal/min	gallons per minute	mg/L	milligrams per liter
ft/s	feet per second	NTU	Nephelometric Turbidity Units
°C	degrees celcius	-	data not collected
uS	microsiemens		

TABLE 12, cont.

SUMMARY OF SAMPLES COLLECTED - YEAR 2
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow (ft/s)	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #184	LAILG-NGA 184-2	12/15/08	16:15	0.027	0.195	14.0	6.57	281	4.9	110
			16:16		0.195	14.3	6.89	310	8.0	130.5
			16:18		0.183	14.2	6.65	211	5.6	350
NGA #130	LAILG-NGA 130-5	12/15/08	13:45	0.000	66 gpm	14.2	6.91	450	4.8	100
			13:48		59.5 gpm	14.3	6.89	501	4.6	109
			13:49		53.2 gpm	15.0	6.72	311	4.7	98
NGA #178	LAILG-NGA 178-1	12/15/08	9:45	0.002	0.97	15.1	7.15	771	5.0	75
			9:48		0.98	15.0	7.16	702	4.9	101
			9:51		1.19	15.2	7.23	735	4.7	100
NGA #64	LAILG-NGA 64-2	12/15/08	12:05	-	**	17.0	6.64	291	6.4	29
			12:17		**	17.2	6.64	264	6.1	16
			12:25		**	17.1	6.66	260	6.0	21
NGA #168	LAILG-NGA 168-5	12/15/08	9:50	0.005	2.02	12.4	6.38	7.36	6.5	431
			9:55		1.68	12.0	6.64	7.30	6.3	433
			10:00		1.47	12.0	6.70	7.28	6.4	431
NGA #4	LAILG-NGA 4-4	12/15/08	14:10	0.083	0.26	16.0	6.61	143.5	6.7	130
			14:15		0.31	15.9	6.64	145.8	6.5	130
			14:25		0.30	15.9	6.53	146.0	6.1	131

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.
** Hand pump used to extract sample, no flow calculation

gal/min	gallons per minute	mg/L	milligrams per liter
ft/s	feet per second	NTU	Nephelometric Turbidity Units
°C	degrees celcius	-	data not collected
uS	microsiemens		

TABLE 12, cont.

SUMMARY OF SAMPLES COLLECTED - YEAR 1
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #130	NGA-#130-LAILG-1	8/6/07	12:15	na	~4.25 gal/min	27.0	7.71	1331	6.12	38
			12:20	na		26.7	7.82	1315	6.51	42
			12:25	na		26.6	7.84	1312	6.48	37
NGA #183	NGA-#183-LAILG-1	8/6/07	13:45	0.36	3.79 ft/s	34.1	8.00	403	8.41	72
			13:50		3.56 ft/s	34.0	8.04	399	8.43	83
			13:55		3.19 ft/s	34.2	8.01	398	8.12	82
NGA #19	NGA-#19-LAILG-1	8/13/07	12:50	0.15	0.74 ft/s	35.1	8.67	848	9.43	563
			12:53		0.71 ft/s	35.0	8.69	833	9.81	492
			12:56		0.67 ft/s	35.0	8.70	834	9.78	522
NGA #124	NGA-#124-LAILG-1	8/13/07	10:38	na	~75-100 gal total	28.9	7.75	1112	6.13	118
			10:41	na		28.9	7.70	1086	6.29	131
			10:45	na		28.9	7.67	1091	6.26	114
NGA #168	NGA-#168-LAILG-1	8/13/07	7:35	na	< 0.08 ft/s	20.6	8.48	894	5.53	958
			7:40	na	< 0.08 ft/s	20.7	8.83	790	5.62	999
			7:45	na	< 0.08 ft/s	20.7	8.91	788	5.59	978
NGA #150	NGA-#150-LAILG	9/25/07	9:10	0.016	0.33 ft/s	21.3	6.51	2450	5.93	11
			9:16		0.35 ft/s	21.4	6.71	2650	6.10	126
			9:20		0.32 ft/s	21.8	6.69	2680	5.98	72
NGA #183	LAILG-NGA#183-2	9/26/07	11:30	0.42	0.30 ft/s	23.5	6.38	823	6.25	47
			11:33		0.33 ft/s	23.6	6.50	737	6.14	45
			11:36		0.33 ft/s	23.9	6.64	735	6.08	47

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.

gal/min gallons per minute; mg/L milligrams per liter
ft/s feet per second; NTU Nephelometric Turbidity units
°C degrees celcius
uS microsiemens

TABLE 12, cont.

SUMMARY OF SAMPLES COLLECTED - YEAR 1
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #168-2	LAILG-NGA-#168-2	9/28/07	8:30	0.0003	< 0.08 ft/s	20.9	7.76	798	5.98	999
			8:35		< 0.08 ft/s	21.1	7.79	790	6.21	999
			8:40		< 0.08 ft/s	21.1	7.99	787	6.27	999
NGA #168	NGA-#168-LAILG-3	11/30/07	15:30	0.002	< 0.08 ft/s	14.4	7.97	1200	10.03	89
			15:08		< 0.08 ft/s	14.2	8.00	1200	10.17	104
			15:11		< 0.08 ft/s	14.1	8.00	1200	10.15	100
NGA #182	NGA #182-LAILG-1	12/7/07	6:42	0.006	1.50 ft/s	11.6	7.64	720	8.10	11
			6:44		1.50 ft/s	11.6	7.59	740	8.20	11
			6:46		1.50 ft/s	11.5	7.56	740	8.10	11
NGA #4	NGA #4-LAILG-1	12/7/07	7:45	0.046	0.60 ft/s	14.1	7.15	281	nm	80
			7:57		0.60 ft/s	13.9	7.11	286	nm	41
			8:00		0.60 ft/s	13.9	7.14	279	nm	41
NGA #130	NGA #130-LAILG-2	12/7/07	8:10	na	~4.25 gal/min	14.7	6.22	1280	nm	60
			8:12	na		14.9	6.20	1285	nm	59
			8:15	na		15.0	6.24	1291	nm	59
NGA #150	NGA #150-LAILG-2	12/7/07	6:42	0.46	3.7 ft/s	13.0	5.97	861	10.28	17
			6:47		4.2 ft/s	12.9	6.21	839	10.10	18
			6:52		4.5 ft/s	12.9	6.37	836	9.99	18
NGA #124	NGA-#124-LAILG-2	12/7/07	6:00	0.09	1.50 ft/s	13.3	5.90	753	nm	44
			6:02		1.50 ft/s	13.3	5.92	758	nm	44
			6:04		1.50 ft/s	13.3	5.91	759	nm	44

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.

gal/min gallons per minute; mg/L milligrams per liter
ft/s feet per second; NTU Nephelometric Turbidity units
°C degrees celcius
uS microsiemens

TABLE 12, cont.

SUMMARY OF SAMPLES COLLECTED - YEAR 1
FIELD MONITORING RESULTS
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

Site	Sample ID	Date	Time (24hr)	*Approximate Flow Cross Section (ft^2)	Flow	Temperature (°C)	pH	E.C. (uS)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
NGA #176	NGA-#176-LAILG-1	12/18/07	16:34	na	~ 1 gal/min	15.7	6.60	1362	10.10	nm
			16:36	na		15.6	6.70	1364	10.70	nm
			16:38	na		15.8	6.90	1360	10.30	nm
NGA #183	LAILG-NGA#183-3	12/18/07	20:55	1.38	0.11 ft/s	11.5	6.60	855	10.94	158
			20:59		0.12 ft/s	11.7	6.70	849	10.98	148
			21:05		0.12 ft/s	11.7	6.80	844	10.97	164
NGA #19	LAILG-NGA#19-2	12/18/07	21:37	na	~ 1.3 gal/min	11.7	6.70	912	10.29	895
			21:38	na		11.9	6.80	921	10.30	910
			21:39	na		12.0	6.50	911	10.31	906
NGA #13	LAILG-NGA#13-1	12/18/07	6:45	0.014	2.26 ft/s	18.6	6.58	225	10.18	240
			6:48		2.18 ft/s	18.5	6.37	198	10.25	233
			6:50		2.49 ft/s	18.6	6.29	171	10.10	234
NGA #53	LAILG-NGA#53-1	12/18/07	18:15	na	~ 1.5 gal/min	13.7	6.60	260	10.41	nm
			18:18	na		13.3	6.90	270	10.50	nm
			18:20	na		13.8	7.10	270	10.32	nm

* Runoff streams were assumed to have a parabolic shape unless field measurements indicated otherwise. The cross sectional area of a parabola is 2/3*width*depth.

gal/min gallons per minute mg/L milligrams per liter
ft/s feet per second NTU Nephelometric Turbidity units
°C degrees celcius
uS microsiemens

APPENDIX C

RAW STATISTICAL DATA

WQMP #	Intensity Group	Crop Type	Irrigated Acreage	N Total (lbs)	N Total	N (lbs/Year/Acre)	N Applied	P (lbs/Year/Acre))	P Applied	K (lbs/Year/Acre)	K Applied	Total N detected	N Deetected	Total Phosphate as P detected	P Detected	TDS	TDS	TSS	TSS
1	1	M	14.68	6090.00	24%	414.91	25%	64.52	26%	129.11	17%	11.84	6%	5.09	16%	772	38%	568	23%
1	1	M	14.68	6090.00	24%	414.91	25%	64.52	26%	129.11	17%	88.1	44%	5.544	17%	1,292	64%	684	28%
1	1	M	14.68	6090.00	24%	414.91	25%	64.52	26%	129.11	17%	0.56	0%	1.173	4%	1,030	51%	84	3%
1	1	M	14.68	6090.00	24%	414.91	25%	64.52	26%	129.11	17%	12.68	6%	15.494	49%	834	41%	213	9%
1	1	M	14.68	6090.00	24%	414.91	25%	64.52	26%	129.11	17%	27.9	14%	4.884	15%	748	37%	995	40%
1	1	M	14.68	6090.00	24%	414.91	25%	64.52	26%	129.11	17%	55.54	28%	3.4	11%	1,200	60%	550	22%
2	1	M	62.00	14425.00	57%	187.34	11%	28.42	12%	56.89	8%	17.43	9%	1.813	6%	602	30%	162	7%
2	1	M	62.00	14425.00	57%	187.34	11%	28.42	12%	56.89	8%	4.36	2%	1.94	6%	104	5%	353	14%
2	1	M	62.00	14425.00	57%	187.34	11%	28.42	12%	56.89	8%	16.46	8%	3.155	10%	364	18%	85.5	3%
2	1	M	62.00	14425.00	57%	187.34	11%	28.42	12%	56.89	8%	13.1	7%	2.0	6%	520	26%	81	3%
5	1	C	15.30	25171.00	100%	1645.00	100%	244.00	100%	733.41	97%			24	76%	2279	100%	57	2%
5	1	C	15.30	25171.00	100%	1645.00	100%	244.00	100%	733.41	97%	83.79	42%	9.445	30%	780	39%	40	2%
5	1	C	15.30	25171.00	100%	1645.00	100%	244.00	100%	733.41	97%	146.96	73%			2,446	100%	45.5	2%
5	1	C	15.30	25171.00	100%	1645.00	100%	244.00	100%	733.41	97%			24.75	78%	1,704	85%	333.5	13%
5	1	C	15.30	25171.00	100%	1645.00	100%	244.00	100%	733.41	97%	123.7	62%			1,200	60%	110	4%
3	1	M	8.32	1760.00	7%	211.54	13%	25.38	10%	95.77	13%	82.28	41%	4.627	15%	1,002	50%	99.5	4%
3	1	M	8.32	1760.00	7%	211.54	13%	25.38	10%	95.77	13%	50.01	25%	3.168	10%	550	27%	90	4%
3	1	M	8.32	1760.00	7%	211.54	13%	25.38	10%	95.77	13%	43.84	22%	2.228	7%	378	19%	40	2%
3	1	M	8.32	1760.00	7%	211.54	13%	25.38	10%	95.77	13%	28.84	14%	3.297	10%	568	28%	117	5%
3	1	M	8.32	1760.00	7%	211.54	13%	25.38	10%	95.77	13%	42.11	21%	2.706	9%	424	21%	115.5	5%
3	1	M	8.32	1760.00	7%	211.54	13%	25.38	10%	95.77	13%	7.06	4%	2.7	9%	240	12%	620	25%
4	1	GO	16.56	7820	31%	472.00	29%	54.00	22%	204.00	27%	52.94	26%	2.305	7%	1,170	58%	6.3	0%
4	1	GO	16.56	7820	31%	472.00	29%	54.00	22%	204.00	27%	26.46	13%	0.94	3%	830	41%	51	2%
4	1	GO	16.56	7820	31%	472.00	29%	54.00	22%	204.00	27%	3.79	2%	0.314	1%	383	19%	16	1%
4	1	GO	16.56	7820	31%	472.00	29%	54.00	22%	204.00	27%	9.85	5%	1.046	3%	616	31%	97	4%
4	1	GO	16.56	7820	31%	472.00	29%	54.00	22%	204.00	27%	12.33	6%	0.512	2%	258	13%	59.7	2%
7	1	GO	7.50	2880.00	11%	384.00	23%	28.16	12%	119.52	16%	9.35	5%	3.447	11%	680	34%	6,168	100%
7	1	GO	7.50	2880.00	11%	384.00	23%	28.16	12%	119.52	16%	9	4%	2.2	7%	220	11%	550	22%
6	1	GO	1.25	735.00	3%	588.00	36%	98.56	40%	183.26	24%	2.42	1%	2.475	8%	192	10%	20	1%
6	1	GO	1.25	735.00	3%	588.00	36%	98.56	40%	183.26	24%	10.41	5%	1.261	4%	220	11%	111.3	4%
8	1	GO	11.51	2520	10%	218.94	13%	41.29	17%	64.90	9%	3.22	2%	2.231	7%	238	12%	295	12%
8	1	GO	11.51	2520	10%	218.94	13%	41.29	17%	64.90	9%	200.86	100%	31.713	100%	2,238	100%	371	15%
8	1	GO	11.51	2520	10%	218.94	13%	41.29	17%	64.90	9%	4.51	2%	0.829	3%	186	9%	58	2%
8	1	GO	11.51	2520	10%	218.94	13%	41.29	17%	64.90	9%	0.84	0%	1.848	6%	145	7%	27	1%
8	1	GO	11.51	2520	10%	218.94	13%	41.29	17%	64.90	9%	2.19	1%	2.6	8%	110	5%	810	33%
8	1	GO	11.51	2520	10%	218.94	13%	41.29	17%	64.90	9%	17	8%	1.4	4%	320	16%	34	1%
11	2	GO	3.38	515.00	2%	152.37	9%	9.11	4%	18.42	2%	3.32	2%	2.878	9%	32	2%	944	38%
12	2	GO	4.75	735.00	3%	154.74	9%	22.69	9%	36.69	5%	5.33	3%	3.243	10%	664	33%	122	5%
12	2	GO	4.75	735.00	3%	154.74	9%	22.69	9%	36.69	5%	11.11	6%	5.379	17%	1,297	64%	504	20%
12	2	GO	4.75	735.00	3%	154.74	9%	22.69	9%	36.69	5%	31.29	16%	3.548	11%	951	47%	0.5	0%
12	2	GO	4.75	735.00	3%	154.74	9%	22.69	9%	36.69	5%	14.96	7%	2.363	7%	592	29%	1126.7	45%
12	2	GO	4.75	735.00	3%	154.74	9%	22.69	9%	36.69	5%	15.58	8%	2.386	8%	492	24%	236	9%
12	2	GO	4.75	735.00	3%	154.74	9%	22.69	9%	36.69	5%	35.89	18%	8.4	26%	1,100	55%	1200	48%
9	2	S	60.00	15120.00	60%	252.00	15%	37.00	15%	139.00	18%	0.17	0%	0.264	1%	223	11%	11	0%
9	2	S	60.00	15120.00	60%	252.00	15%	37.00	15%	139.00	18%	24.85	12%	0.858	3%	317	16%	28.7	1%
9	2	S	60.00	15120.00	60%	252.00	15%	37.00	15%	139.00	18%	13.32	7%	3.561	11%	292	14%	92	4%
9	2	S	60.00	15120.00	60%	252.00	15%	37.00	15%	139.00	18%	2.13	1%	1.729	5%	106	5%	510	21%
10	2	S	36.00	8040.00	32%	223.00	14%	33.00	14%	124.00	16%	3.58	2%	1.3	4%	206	10%	129.5	5%
10	2	S	36.00	8040.00	32%	223.00	14%	33.00	14%	124.00	16%	5.05	3%	2.94	9%	240	12%	1,079	43%
16	3	RM	2.50	835.00	3%	341.40	21%	82.63	34%	163.84	22%	4.03	2%	0.393	1%	0.1	0%	76	3%
16	3	RM	2.50	835.00	3%	341.40	21%	82.63	34%	163.84	22%	6.54	3%	0.868	3%	232	12%	112	5%
16	3	RM	2.50	835.00	3%	341.40	21%	82.63	34%	163.84	22%	1.49	1%	1.5	5%	57	3%	500	20%
13	3	RM	3.75	3915.00	16%	1044.00	63%	216.77	89%	800.12	100%	2.77	1%	2.033	6%	162	8%	24	1%
13	3	RM	3.75	3915.00	16%	1044.00	63%	216.77	89%	800.12	100%	8.79	4%	1.868	6%	328	16%	93	4%
14	3	GO	6.00	2630.00	10%	438.33	27%	43.01	18%	215.00	28%	6.06	3%	1.0	3%	350	17%	5	0%
15	3	GO	8.50	640.00	3%	75.29	5%	12.42	5%	31.25	4%	13.8	7%	2.934	9%	462	23%	72.7	3%

Outlier data, not included in alanylsis

WQMP #	Intensity Group	Total DDT and Derivatives (ng/L)	DDT	Total OP Pesticides (ng/L)	OP Pesticides	Total sum of all detected Pyrethroids (ng/L)	Pyrethroids	Total Pyrethroids and OP Pesticides (ng/L)	Pyrethroids and OP Pesticides	Application events in 15-mo	Application Rate	Application events in 15-mo/acre	Application Rate	Total Chlordane (ng/L)	Chlordane
1	1	0	0%	0	0%	0	0%	0	0%	248	59%	16.89	55%	0	0%
1	1	0	0%	2306	12%	1814	11%	4120	17%	248	59%	16.89	55%	2.4	5%
1	1	5.6	2%	0	0%	7	0%	7	0%	248	59%	16.89	55%	14	31%
1	1	0	0%	0	0%	92	1%	92	0%	248	59%	16.89	55%	1.3	3%
1	1	24.7	9%	163	1%	2236	14%	2399	10%	248	59%	16.89	55%	6.6	15%
1	1	0	0%	25	0%	29	0%	54	0%	248	59%	16.89	55%	0	0%
2	1	13.5	5%	0	0%	79	0%	79	0%	76	18%	1.23	4%	15.2	34%
2	1	0	0%	0	0%	460	3%	460	2%	76	18%	1.23	4%	17.9	40%
2	1	0	0%	3478	18%	53	0%	3531	15%	76	18%	1.23	4%	0	0%
2	1	0	0%	0	0%	36	0%	36	0%	76	18%	1.23	4%	0	0%
5	1	0	0%	0	0%	25304	100%	25304	100%	486	100%	31.76	100%	0	0%
5	1	0	0%	0	0%	1822	11%	1822	8%	486	100%	31.76	100%	0	0%
5	1	0	0%	0	0%	11071	68%	11071	46%	486	100%	31.76	100%	0	0%
5	1	0	0%							486	100%	31.76	100%	0	0%
5	1	0	0%	33	0%	528	3%	561	2%	486	100%	31.76	100%	0	0%
3	1	51.5	18%	0	0%	137	1%	137	1%	93	22%	11.18	37%	34	75%
3	1	37.4	13%	0	0%	3704	23%	3704	15%	93	22%	11.18	37%	11.4	25%
3	1	0	0%	0	0%	1899	12%	1899	8%	93	22%	11.18	37%	17.1	38%
3	1	19.3	7%	0	0%	7536	46%	7536	31%	93	22%	11.18	37%	8.2	18%
3	1	10.4	4%	205	1%	19281	100%	19486	81%	93	22%	11.18	37%	13.6	30%
3	1	0	0%	10	0%	170	1%	180	1%	93	22%	11.18	37%	0	0%
4	1	0	0%	0	0%	0	0%	0	0%					0	0%
4	1	73.6	26%	0	0%	1393	9%	1393	6%					0	0%
4	1	0	0%	0	0%	185	1%	185	1%					0	0%
4	1	0	0%	0	0%	1758	11%	1758	7%					0	0%
4	1	0	0%	85	0%	377	2%	462	2%					0	0%
7	1	0	0%	0	0%	874	5%	874	4%					0	0%
7	1	0	0%	0	0%	305	2%	305	1%					0	0%
6	1	22.5	8%	0	0%	0	0%	0	0%	0	0%	0.00	0%	14.9	33%
6	1	0	0%	27	0%	6	0%	33	0%	0	0%	0.00	0%	0	0%
8	1	0	0%							145	34%	145	34%	99.5	100%
8	1	0	0%	0	0%	26754	100%		0%	145	34%	145	34%	38.8	86%
8	1	0	0%	1298	7%	2108	13%	3405	14%	145	34%	12.60	41%	0	0%
8	1	0	0%	17819	92%	1389	9%	19209	80%	145	34%	12.60	41%	0	0%
8	1	38	13%	19300	100%	1625	10%	20925	87%	145	34%	12.60	41%	39.6	87%
8	1	0	0%	46100	100%	110	1%	46210	100%	145	34%	12.60	41%	0	0%
11	2	32.7	12%	0	0%	874	5%	874	4%	11	3%	3.25	11%	0	0%
12	2	0	0%	0	0%	1379	9%	1379	6%	57	14%	12.00	39%	0	0%
12	2	118	42%	0	0%	964	6%	964	4%	57	14%	12.00	39%	0	0%
12	2	2.7	1%	9	0%	466	3%	475	2%	57	14%	12.00	39%	2.8	6%
12	2	19.2	7%	0	0%	188	1%	188	1%	57	14%	12.00	39%	0	0%
12	2	11.8	4%	39	0%	1376	8%	1415	6%	57	14%	12.00	39%	0	0%
12	2	0	0%	0	0%	72	0%	72	0%	57	14%	12.00	39%	0	0%
9	2	0	0%	0	0%	21	0%	21	0%					0	0%
9	2	312	100%	0	0%	0	0%	0	0%					0	0%
9	2	705.8	100%	0	0%	0	0%	0	0%					0	0%
9	2	38.5	14%	0	0%	0	0%	0	0%					0	0%
10	2	0	0%	0	0%	3	0%	3	0%	12	3%	0.33	1%	0	0%
10	2	22	8%	0	0%	31	0%	31	0%	12	3%	0.33	1%	4.2	9%
16	3	0	0%	0	0%	47	0%	47	0%	35	8%	14.00	46%	0	0%
16	3	43.3	15%	0	0%	110	1%	110	0%	35	8%	14.00	46%	0	0%
16	3	28	10%	0	0%	22	0%	22	0%	35	8%	14.00	46%	0	0%
13	3	0	0%	623	3%	0	0%	623	3%	14	3%	3.73	12%	0	0%
13	3	6.2	2%	80	0%	67	0%	147	1%	14	3%	3.73	12%	0	0%
14	3	0	0%	0	0%	264	2%	264	1%	54	13%	9.00	30%	0	0%
15	3	25.3	9%	0	0%	5	0%	5	0%	21	5%	2.47	8%	0	0%

Outlier data, not included in alanylsis

APPENDIX D

CHEMICAL USE, PURs

TABLE 12

SUMMARY OF PESTICIDE USE REPORT - 2011-2012
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

			ACTIVE INGREDIENT	Iprodione	Abamectin	Acephate	Streptomyces lydicus	Diflubenzuron	Imapacloprid	Imapacloprid	Anti-Bacterial	Fenpyroximate	Fosetyl Aluminum	Ancymidol	Abamectin	Azadirachtin	Azadirachtin	Daminozide	Propoconazole	Prodiamine	Triadimefon	Bifenthrin	Propylene glycol (1,2-Propanediol)	Paclobutrazol	Surfactant	Flumioxazin	Copper Salt	Bacillus subtilis	Copper Hydroxide	Iprodione	Thiophanate-methyl	Trifloxystrobin	Spinosad	Glyphosate	Glyphosate	Chlormequat	Chlorothalonil	Metaldehyde	Cyfluthrin	Fenhexamid	Deltamethrin	Diazinon	Cyfluthrin	Pyriproxyfen	Mancozeb	Chlorpyrifos	Chlorpyrifos	Myclobutanil	Pymetrozine	S-Kinoprene	6-Benzyladenine, Gibberellic Acid	Fenamidone	Thiamethoxam	Ethephaon	Bifenazate	Mancozeb	Aluminum tris	Phosphorus	Isoxaben	Glyphosate	Glyphosate	Diphacinone	Azoxystrobin	Hexythiazox	Glyphosate	Capsaicin	Imidacloprid	Iprodione	Fenamiphos	Dicofol	Glyphosate	Copper Hydroxide	Spirotetramat	Additive	Malathion
OWNER/TENANT	**NGA #**	**Location**	***TRADE NAME (pesticides used)***	*26/36*	*Abamectin*	*Acephate*	*Actinovate*	*Adept*	*Admire*	*Admire Pro*	*Agrymicin*	*Akari 5SC*	*Aliette*	*A-Rest*	*Avid*	*Azatin*	*Azatrol*	*B9*	*Banner Maxx*	*Barricade*	*Bayleton, Strike*	*Bifenthrin*	*Bond Max*	*Bonzi*	*Break Thru, Silicone*	*Broadstar, Sureguard*	*Camelot*	*Cease*	*Champ 2, Kocide*	*Chipco*	*Cleary, Systec 1998*	*Compass*	*Conserve*	*Cornerstone*	*Credit 41*	*Cycocel*	*Daconile*	*Deadline, Snail It*	*Decathlon, Discuss, Tempo*	*Decree*	*Deltaguard*	*Diazinon Ag 500*	*Discuss*	*Distance*	*Dithane*	*Duraguard ME*	*Dursban 50, Lorsban*	*Eagle*	*Endeavor*	*Enstar*	*Fascination*	*Fenstop*	*Flagship*	*Floral*	*Floramite*	*Fore 80Wp*	*Fosetyl-AL 80 WDG*	*Fosphite*	*Gallery*	*Glystar, Kleen-up Pro, Round Up*	*Glystar*	*Gopher Getter*	*Heritage*	*Hexygon*	*Honcho Pluss*	*Hot Sauce*	*Imidacloprid 2F*	*Iprodione 2SE*	*Javelin*	*Kelthane*	*Kleenup Pro*	*Kocide*	*Kontos*	*LI-700*	*Malathion*
ABC Nursery, Inc.	4	D			7	6									3														5	1	1		3				10					11	5	1			3			1						1							2	2			1			3			2		2
Acosta Growers Inc.	13	SG																																2																																									
Boething Treeland Farms, Inc.	19	LA			5						11								5	7			8		2	1	4				5						3	2					3				3										2				7			2	7		13	6		3						5	
C Soto Jr	25	D																																																																									
Coiner Nursery	31	SG				7							2						2	12															5										2																7			2									2			
G Hernandez-New Westgrowers	53	LA																																																																									
H&H Nursery of Lakewood	64	SG													5				3		4																								2																														
M Downard-Rainbow Garden Nursery	110	SG																	2												3																	3															1												
Norman's Nsy-Broadway South	125	LA						3					2		6														4		1		10						4											1								7																	
Norman's Nsy-Rosemead	130	LA																																																																									
R Wilson-Colorama Wholesale Nursery	150	SG			1		4		11	5			15	15	14	6		15	2			15		15		7	6	14	7	10	15	9	14			2	1		1	2						1		2	6	1	2	14	15	9	1			9		10	2		14					7	14		5				
San Gabriel Nursery & Florist	162											1			1			1		10				1																		1			1																	1			2	3						2					
SY Nursery Inc.	168	SG															3					2							2									3																				6			8							6								
T-Y Nursery-Yard #6	176	SM																																																																									
Ultra Greens Nursery										2																																																			13														
Valley Crest Tree Company	182	LA																																																																									
Valley Sod Farms, Inc.	183	LA		1																															3																																								
West Covina Wholesale-Damien	189	SG																																																																									
			TOTAL	1	13	13	4	3	11	7	11	1	19	15	29	6	3	16	14	29	4	17	8	16	2	8	10	14	18	11	25	9	27	2	8	2	14	5	5	2	1	11	8	2	4	1	6	5	6	3	2	14	15	9	3	1	6	16	7	39	2	2	28	5	13	6	7	10	14	5	5	2	2	5	2

* **D** - Domingeuz Channel; **LA** - Los Angeles River; **SC** - Santa Clara; **SG** - San Gabriel; **SM** - Santa Monica

Active ingredient included in Laboratory Analytical Program

TABLE 12, cont.

SUMMARY OF PESTICIDE USE REPORT - 2011-2012
NURSERY GROWERS ASSOCIATION
LOS ANGELES IRRIGATED LANDS GROUP

			Mancozeb	Imidacloprid	Fluvalinate	Fludioxonil	Metalaxyl-M	Methiocarb	Fatty Acids	NEEMIX 4.5	Foam Suppresant	Acephate	Pyridalyl	Hydrogen Dioxide	Diphacinone	Novaluron	Pendimethlin	Benzalkonium chloride	Copper Sulfate	Pendimethalin	Malathion	Propiconazole	Propiconazole	Imidacloprid	Pyrethrins	Pyrethrins	Ammonium salts of polyacrylic, hydr	Diphacinone	Isopropylamine	Diquat Dibromide	Chlorothalonil, Metalaxyl-M	Dinitroaniline	Glyphosate	Oxyfluorfen, Oryzalin	Fenarimol	Dinotefuran	Halosulfuron-methyl	Carbaryl	Acequinocyl	Isoxaben, Trifluralin	Gliocladium virens GL-21	Horticultural Oil	Additive	Dimethomorph	Triadimefon	Metalaxyl-M	Spinosad	Uniconazole	Parraffinic Oil	Flumioxazin	Oryzalin	Bifenthrin	Danitol (Fenpropathrin)	Cyfluthrin	Permethrin	Triflumizole	Etridiazole	Glyphosate	L-Cyhalothrin, Tetramethrin, Piperonyl Butoxide	Triclopyr	Oxyfluorfen	Horticultural Oil	Bifenthrin	Fenbutatin-oxide	Polyether	Bifenthrin	Bacteria		
OWNER/TENANT	NGA #	Location	*Mancozeb*	*Marathon (Merit)*	*Mavrik*	*Medallion*	*Mefenoxam*	*Mesurol*	*M-Pede*	*Neemix 4.5*	*No Foam*	*Orthene*	`	*OXIDATE*	*PCQ*	*Pedestal*	*Pendulum*	*Physan 20*	*Phyton*	*Pin-Dee*	*Prentox*	*Procon-Z*	*Propiconazole*	*PROVADO 1.6*	*PyGanic*	*Pyreth-It*	*Quest*	*Ramik*	*Ranger Pro*	*Reward*	*Riomil Bravo*	*Ronstar*	*Round Up*	*Rout*	*Rubigan*	*Safari*	*Sempra, Sandea*	*Sevin*	*Shuttle O*	*Snapshot*	*Soilgard 12 G*	*Spray Oil 415*	*Spreader*	*Stature*	*Strike*	*Subdue Maxx, Mefenoxam*	*Success*	*Sumagic*	*Sunspray*	*Sureguard*	*Surflan*	*Talstar, Upstar*	*Tame*	*Tempo*	*Tengard*	*Terraguard*	*Terrazole*	*Touchdown*	*Tristar*	*Turflow, Turflon*	*Two OX E-Pro*	*Ultrafine Oil*	*Up-Star SC*	*Vendex*	*Widespread*	*Wisdom*	*Xentari*	Total Chemical Applications	Total Applications of Chemicals Tested For
ABC Nursery, Inc.	4	D		13	2	1		6	3			3																					2		10	4		13													2				10	1							4	2				146	31
Acosta Growers Inc.	13	SG																															4																		4												1					11	0
Boething Treeland Farms, Inc.	19	LA		12	5	7		5			6	2			1				11							1	15	15				2				9			2	3			7		2	11							3	1					10						14			248	17
C Soto Jr	25	D																																																																		0	0
Coiner Nursery	31	SG		8				1				2										2							2							1		10				4																			5							76	0
G Hernandez-New Westgrowers	53	LA																																																																		0	0
H&H Nursery of Lakewood	64	SG																			3												9																4		5																	35	3
M Downard-Rainbow Garden Nursery	110	SG	1	1																																										3																						14	0
Norman's Nsy-Broadway South	125	LA			2	8						2																	7	12								1		9						7							1					4					1				1	93	4
Norman's Nsy-Rosemead	130	LA																																																																		0	0
R Wilson-Colorama Wholesale Nursery	150	SG		15	7	11				2			6	8		3			4					12	1						2					14								15		14	9	7					3			10	11										14	486	17
San Gabriel Nursery & Florist					3	1		2																									9	2							1				3							1	2									6						54	2
SY Nursery Inc.	168	SG					3				9							1					3																	1										7																3		57	5
T-Y Nursery-Yard #6	176	SM																																																																		0	0
Ultra Greens Nursery																																				2		4																														21	0
Valley Crest Tree Company	182	LA																																			2																															2	0
Valley Sod Farms, Inc.	183	LA														2			1																	2																							3									12	3
West Covina Wholesale-Damien	189	SG																																																																		0	0
	TOTAL		1	49	19	28	3	14	3	2	15	9	6	8	1	3	2	1	15	1	3	2	3	12	1	1	15	15	9	12	2	2	24	2	10	30	4	28	2	13	1	4	7	15	5	35	9	7	4	7	11	1	9	1	10	11	11	4	10	3	5	6	6	2	14	3	15	1255	

*** D** - Domingeuz Channel; **LA** - Los Angeles River; **SC** - Santa Clara; **SG** - San Gabriel; **SM** - Santa Monica

Active ingredient included in Laboratory Analytical Program

APPENDIX E

CURRENT BMPs, SAMPLING SITES

NGA #	Historically Implemented BMPs, Sampling Sites											
	Water Conservation		**Sedimate Control**			**Filtration**	**General Housekeeping**	**Pesticide and Nutrient Storage**		**Pesticide and Fertilizer Applicaiton**		**Training**
	Drip Irrigation	**Retention Ponds**	**Sweeping BMP**	**Gravel**	**Straw Waddles/Sand Bags**	**Silt Screening**	**Drain Maintenance**	**Coverage of Pesticide storage areas**	**Coverage of Nutrient/soil storage areas**			
4	Use of a "water wand" nozzle to help minimize overspraying		Street sweeper used on weekly basis and at least one day prior to forecasted rain events		Sandbags were placed around dirt areas near the sidewalk & drain		Planted Equisetum in dirt areas near sidewalk & drain					
13			Parking area and driveways are swept on a weekly basis & prior to forecasted rain events	Gravel has been applied to dirt roads and driveways	Sand bags placed near discharge points to reduce sedimate discharge			Spray rig is covered during rain events		Hand application of fertilizer into each container	No application of herbicides or pesticides a week prioir to forecasted rain event	
19					Sand bags with pass-through PVC piping placed along dirt drainage channels located onsite, straw waddles around culverts	Silt screen placed along fence adjacent to stormwater drainage channel	Sand bags and straw waddles places around drains with metal grating					
31	Drip irrigation implemented on 45% of site	All runoff directed to holding pond. Water from holding pond used for dust supression.										All employees are trained on water conservation techniques and have stressed not overwatering. Have dedicated two employees to trouble shoot leaking valves or underperforming sprinkler heads
64	100% hand watering											
110	Implemented drip where possible, maintenance of irrigation system and eliminated excess watering, plants organized by water needs		Sod delivery area swept regularly	Weed clothe on slopes, mulch and gravel on walkways	Straw waddles placed at the end of beds and adjacent to sidewalks				Fertilizers are stored in covered containers	liquid fertilizer, Spray program for problem crops.	EC testing performed weekly so fertilizer is applied as needed	All workers trained to keep space clean of trash, soil and fertilizer. Regular inspections for for pest and disease problems
124	100% drip irrigation and is monitored monthly		Loading area is swept daily		Sand bags and straw waddles placed aroung perimeter of property and soil piles			Spray tank is kept in enclosed shed		Granular fertilizer is applied every other month, liquid fertilizer is applied quarterly		
150	All watering is done by hand, drip or flood benches	All water irrigation and stormwater runoff is routed to a large retention and filtration pond onsite. Water is purified and reused for irrigation					Pots are new and sterile, work areas are clean and tools are sanitized			Increase amounts of slow release fertilizer in lieu of liquid fertilizer, pre -plant fertilizer is incorporated in all soil mixes	trained personnel identifies pest problems, stcky traps used to identify pest pressure. Anemometer is used for drift management. Reduce the frequency of Pyrethoid insecticides.	
162					Straw waddles placed around discharge points and where necessary							
168	Combination of drip, sprinklers and hand watering. Maintenance of drip system monthly				Maintenance of sand bags & screens are monthly			Spray truck is parked under canopy when not in use				
176	All perimeter areas of the property are all on drip irrigation, and is monitored weekly		Sweep all driveways & blacktops on a weekly basis. Larger areas are cleaned with a street sweeper and prior to a forecasted rain event.		Perimeter of property is lined with straw waddles and sand bags where necessary		All catch basins and gutters are cleaned & maintained twice per month and/or prior to a forecasted rain event	Soil piles are surrounded by straw waddles				
178	75% drip & 25% hand watering											
189	100% drip irrigation before 9:00AM			Placed gravel on dirt walkways adjacent to street			Constructed a small berm between plants & fence at perimeter of property			Pesticides are not sprayed		

APPENDIX F

GENERAL INFORMATION QUESTIONNAIRE

LA ILG WQMP General Operational Questionnaire

Company:	____________	Facility:	____________
Filled out by:	____________	Title:	____________
Email:	____________	Phone	____________

Instructions

Please fill out one questionnaire for *EACH FACILITY* that you have enrolled in the LA ILG

Part I: General Company

1. _____ **How would you characterize your crop? Circle ONE- choose your *primary* crop definition.**

Color / Bedding Plant

Orchard

Greenhouse

Retail w/Production

Vineyard

Box Tree & Shrub

Farm / Row Crop

2. _____ **What is your total company yearly Gross sales? CIRCLE ONE.**

Less than $50,000 per year

Between $50,000 and $200,000 per year

Between $200,000 - $1,000,000 per year

Between $1,000,000 - $5,000,000 per year

Over $5,000,000 per year

3. _____ **Please tell us how many TOTAL ACRES you have within your company. That is ALL facilities in the entire country, please!**

__________ acres

4. _____ **How many facilities does your company operate? All facilities in the US, please.**

__________ facilities

5. _____ **Do you ship out of state?**

YES

NO

6. _____ **Do you move material between facilities if you have more than one?**

YES

NO

7. _____ **Do you ship material (either sales or intracompany transfer) north of Santa Barbara County?**

YES

NO

Part II: General Pesticide

8. _____ **Reviewing your Pesticide Usage Reports and records for the stated time period- How many applications did you make in total? Just count up each line of your PUR.**

________ applications

9. _______ **What methods do you use to apply pesticides? Please break down into percentages?**

___% Spray

___% Drench or Sprench

___% Other

Part III: General Fertilizer

10. ___ **Reviewing your Fertilizer application records, please list all formulations (solid and liquid) applied during designated time period. We will calculate total Nitrogen (N) and total Phosphorus (P) from this information. Use one line for each formulation**

If you do not wish to supply your formulations and would prefer to calculate pounds of N and P on your own, please see attached fertilizer worksheet.

Attach extra sheets if needed

	SOLID or LIQUID Formulations	N-P-K	**QTY applied** Pounds (Solid) or Gallons (Liquid)
Ex.	**solid**	**17 - 8 - 8**	**2000 lbs**
Ex.	**liquid**	**10 - 10 - 10**	**1000 gallons**
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	
		___-___-___	

11. ________ **What methods do you use to apply fertilizer? Please break out into percentages.**

____% Topdress

____% Liquid Feed as needed w/Dosatron

____% Fertigation

____% Soil Incorporation

____% Broadcast

Part IV: General Irrigation

12. ________ **What methods of irrigation do you use? Please breakdown your methods by percentage**

____% Drip

____% Overhead Sprinkler

____% Handwater

____% Furrow

13. _____ **Reviewing your water usage for the year- What was your volume of water applied? Depending on your supply this figure may be in gallons or CF, etc... Please include your measure!**

We applied __________ __________________(Unit of measure)

14. _____ **Do you recycle water in your facility**

YES

NO

15. _____ **Do you use reclaimed water**

YES

NO

16. ________ **From where do you get your water? Please provide percentages**

____% City/Municipal

____% Water District

____% Well

THANK YOU! PLEASE RETURN WITH YOUR BMP QUESTIONNAIRE TO THE LA ILG PROJECT MANAGER

APPENDIX G

BMP QUESTIONNAIRE

WQMP QUESTIONNAIRE LA Irrigated Lands Group – BMPs (Best Management Practices) for Water Quality
Company Name: **Facility location:**

1. Please circle the pesticide use/storage BMPs you currently have in place in your facility. Circle all that apply. Indicate whether it is completed for your entire facility or partially complete.

	Complete	or	Partial		Complete	or	Partial
IPM Program	C		P	IPM Manager	C		P
Covered Storage area for your materials AND equipment	C		P	Spill Kits - checked and restocked regularly	C		P
Sticky card monitoring	C		P	Using newer, less environmentally persistent chemistry	C		P
Regular scouting for pest issues	C		P	Regular weed control	C		P
Dust control	C		P	Spot Spraying	C		P
Using non-chemical means for pest control. ex. Biologicals, Exclusion, …	C		P	Conduct monthly tailgate meeting on pesticide management and water quality issues	C		P
	C		P		C		P
	C		P		C		P

WQMP QUESTIONNAIRE LA Irrigated Lands Group – BMPs (Best Management Practices) for Water Quality
Company Name: **Facility location:**

2. Please circle the nutrient use/storage BMPs you currently use in your facility. Circle all that apply. Indicate whether it is completed for your entire facility or partially complete.

	Complete	or	Partial		Complete	or	Partial
Regular Soil and Tissue sampling	C		P	pH and EC monitoring	C		P
Trained personnel making fertilizer decisions	C		P	Source Water sampling to determine existing nutrient content	C		P
Covered Storage Area for your materials AND equipment	C		P	Spill Kits - checked and restocked regularly	C		P
Pulse Irrigation for liquid fertilizers	C		P	Controlled release fertilizers to match crop production schedules	C	r	P
Conduct monthly tailgate meeting on nutrient management and water quality issues	C		P		C		P
	C		P		C		P
	C		P		C		P
	C		P		C		P

WQMP QUESTIONNAIRE LA Irrigated Lands Group – BMPs (Best Management Practices) for Water Quality
Company Name: **Facility location:**

3. Please circle the sediment control BMPs you currently employ in your facility. Circle all that apply. Indicate whether it is completed for your entire facility or partially complete.

	Complete	or	Partial		Complete	or	Partial
Graveled roads	C		P	Groundcover in production blocks	C		P
Filter Socks	C		P	Water Diversion to funnel water to one area for collection	C		P
Covered Trash Collection areas	C		P	Tarp over soil piles. Compost and/or planting	C		P
Water truck for dust control	C		P	Silt Fencing and/or Sandbagging	C		P
Canning areas away from water drainage channels	C		P	Runoff Collection pond and/or area	C		P
Hillsides are covered or planted	C		P	Gopher and/or Ground Squirrel Control	C		P
Polyacrylimide (PAM)	C		P	Filters/traps around all exit drains	C		P
No till farming	C		P	Windbreaks to prevent wind erosion	C		P
Conduct monthly tailgate meeting on sediment control and water quality issues	C		P				

WQMP QUESTIONNAIRE LA Irrigated Lands Group – BMPs (Best Management Practices) for Water Quality
Company Name: **Facility location:**

4. Please circle the water management BMPs you currently use in your facililty. Circle all that apply. Indicate whether it is completed for your entire facility or partially complete.

	Complete	or	Partial		Complete	or	Partial
Drip Irrigation	C		P	Soil Moisture Monitoring	C		P
Weather Station	C		P	Automated Irrigation	C		P
Regular training for your Irrigation personnel	C		P	Irrigation Equipment Inspections	C		P
Shut off valves on all hoses	C		P	Crop location with crops with similar water needs	C		P
Different Irrigation Zones	C		P	Yearly irrigation audits	C		P
Conduct monthly tailgate meeting on water management and water quality issues	C		P		C		P
	C		P		C		P
	C		P		C		P

WQMP QUESTIONNAIRE LA Irrigated Lands Group – BMPs (Best Management Practices) for Water Quality
Company Name: **Facility location:**

5. Please circle the housekeeping BMPs you currently use in your facility. Circle all that apply. Indicate whether it is completed for your entire facility or partially complete.

	Complete	or	Partial		Complete	or	Partial
Regular trash collection	C		P	Weed control	C		P
Covering of maintenance and storage areas prior to rain	C		P	Sweeping all paved areas on site prior to rain event	C		P
Washing used containers before replanting	C		P	Sanitization of production areas between crops	C		P
Conduct monthly tailgate meeting on housekeeping and water quality issues	C		P		C		P
	C		P		C		P
	C		P		C		P
	C		P		C		P
	C		P		C		P