Robert Bein, William Frost & Associates
PROFESSIONAL ENGINEERS, PLANNERS & SURVEYORS

DATE:	March 30, 2000 Thursday
TIME:	10:00 am – 12 noon
PLACE:	RBF, Irvine or via phone (916-657-4102)
ATTENDEES:	Rich Horner/Chris May, Jeremy Johnstone, Rick Graff, Bruce Reznik, Steve Fleischli, Bob Wu, Steve Borroum, Brian Currier, Cid Tesoro, Sayra Ramos, Lanny Chronert, Pete Van Riper, Richard Gordon, Dean Messer, Brown and Caldwell, Montgomery Watson/Law, KLI, RBF
SUBJECT:	BMP Pilot Study Status

AGENDA ITEMS

1. CDS sites:
   a. Construction Status
   b. Equipment Installation Schedule
2. Metro and Paxton sites:
   a. Schedule
   b. Equipment Installation Schedule
3. Vector Issues
4. Environmental/Biological Survey
5. Monitoring Issues:
   a. 48-hour Dry Period Criterion Revised Proposal
   b. Aliquot/Percent Capture Minimum Goals and Qualified Data Acceptance Criteria
6. District 7 Operation/Maintenance (OMM) Status Activities
7. District 11 Operation/Maintenance (OMM) Status Activities
8. 605/91 Infiltration Basin Bypass Design
9. Bob Pitt's comments on MCTT and Team's Response/Action Plan
10. Cost Workgroup Update
11. Next meeting: April 13, 2000 Thursday 10AM

BMP Pilot Studies

Bi-weekly Status Report

BMP Pilot Projects in District 7 and District 11

March 24, 2000

Robert Bein, William Frost & Associates

(Contributing Authors: Brown and Caldwell, Montgomery Watson Chaudhary/Law Crandall, Kinnetic Laboratories, Dudek and Associates, Larry Walker and Associates, and UCR)

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ACTIVITY DESCRIBED IN THIS QUARTERLY COVERS THE PERIOD FROM MARCH 2, 2000 – MARCH 24, 2000

NON-STORMWATER RUNOF INSPECTIONS

Non-stormwater Weekly Inspections have been discontinued at all locations. Should non-stormwater discharge be noted during routine inspections, weekly non-stormwater discharge inspections will resume.

District 7 BMP Pilot Sites

I-605/SR-91 Interchange Infiltration Basin (Site ID 73101) MW/Law

Monitoring/Sampling Activities

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.40 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.01 inches of rainfall. A team was mobilized to make empirical observations of the infiltration basin.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with an 80% probability of occurrence. Storm event produced 0.83 inches of rainfall. A team was mobilized to make empirical observations of the infiltration basin

605/91 Infiltration Basin Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.09	N	N	NA	NA	N
12/31/99	0.52	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.55	Y	Y	NA	NA	Y
1/30-31/00	0.25	N	N	NA	NA	N
2/10-11/00	0.26	N	N	NA	NA	N
2/12-14/00	1.14	Y	Y	NA	NA	Y
2/16/00	0.62	Y	Y	NA	NA	Y
2/20-21/00	2.14	Y	Y	NA	NA	Y
2/23/00	0.98	N	N	NA	NA	N
2/27/00	0.16	Y	Y	NA	NA	Y
3/3-4/00	0.40	N	N	NA	NA	N
3/5-6/00	1.01	Y	Y	NA	NA	Y
3/7-8/00	0.83	Y	Y	NA	NA	Y

Operations and Maintenance

3/5/00: Approximately 3 inches of runoff collected within the infiltration basin. Some bypass was observed through the overflow structure because the intense rainfall created runoff with a flow level that exceeded the weir plate elevation.

3/7/00: Approximately 2 to 3 inches of runoff collected within the infiltration basin. Some bypass was observed through the overflow structure because the intense rainfall created runoff with a flow level that exceeded the weir plate elevation.

3/22/00: Conducted monthly inspection. Any maintenance meeting MID thresholds will be conducted during the week of 3/27/00.

Vector Activities

None noted during routine inspection.

Issues / Solutions

None.

I-210/East Orcas Avenue Continuous Deflective Separators (Site ID 73102) MW/Law

Status

First day of construction was Jan. 28, 2000. CDS Unit and Diversion Weir Box are installed, and forming materials for concrete pads are in-place. Concrete placement is scheduled for March 22. Installation of Flume Approach Section, Flume, and unistrut frame assembly is scheduled for week of March 27. Construction is 60% complete.

Issues / Solutions

The contract plans show a welded steel blind flange to be placed on the end of the CMP Tee upstream of the CDS Unit, but this item of work was inadvertently left out of the specifications. A Contract Change Order will be processed to authorize the Contractor to perform the work. Estimated cost of CCO for this site - $500.

On March 21, while at Altadena Maintenance Station, it was observed that the flume approach sections for the CDS units had been blown off their pallets into the biofiltration strip. Winds upwards of 40 mph occurred in the area on 3/21/00. The approach sections will be relocated onto the pavement beside the biofiltration strip by 3/25/00.

I-210/East of Filmore Street Continuous Deflection Separators (Site ID 73103) MW/Law

Status

First day of construction was Jan. 28, 2000. CDS Unit and Diversion Weir Box are installed, and concrete flume pad, monitoring equipment pad, and discharge apron are in-place. Installation of Flume Approach Section, Flume, and unistrut frame assembly is scheduled for week of March 27. Construction is 65% complete.

Issues / Solutions

The CDS Unit was not plumb following initial installation, and the Contractor re-installed it correctly on March 15.

The posts for the perimeter fence were installed 6 feet to the north of their specified location, resulting in one of the posts being placed within the Discharge Apron. The post was removed, and will be re-located at the correct location. This will result in a longer perimeter fence than designed, but there will be no additional costs incurred.

The contract plans show a welded steel blind flange to be placed on the end of the CMP Tee upstream of the CDS Unit, but this item of work was inadvertently left out of the specifications. A Contract Change Order will be processed to authorize the Contractor to perform the work. Estimated cost of CCO for this site - $500.

On March 20 while at Altadena Maintenance Station, it was observed that the flume approach sections for the CDS units had been blown off their pallets into the biofiltration strip. Winds upwards of 40 mph occurred in the area on 3/21/00. The approach sections will be relocated onto the pavement beside the biofiltration strip by 3/25/00.

Design/Construction Schedule for CDS Units – PS&E Process

Activities	**Scheduled Dates**	**Actual Dates**	**Duration (calendar weeks)**
Obtain EA	06/01/99	06/04/99	
Begin Clearance	06/21/99	06/28/99	
Obtain District Clearances/To Santa Ana	07/26/99	09/14/99	4
End Santa Ana Review, Advertise, and Bid Opening	12/07/99	11/16/99	12
Award Contract	12/14/99	12/14/99	4
Begin Construction	02/01/00	01/28/00	4
Complete Construction	04/13/00		8
Fully Operational	04/27/00		2

District 7 CDS Sites Construction Cost Summary

Location	First Working Day	Scheduled Completion Date	Adjusted Completion Date	Bid Amount	Estimated CCOs	State Furnished Material	Estimated Total Final Cost[1]
I-210 East Orcas Ave.	1/28/99	3/31/00	4/17/00	$47,263	CCO No. 2 = $500 CMP Tee coupler and flange	$13,401 (CDS unit) $3,523 (flume approach) $529 (flume)	$65,216
I-210/East of Filmore Ave.	1/28/99	3/31/00	4/17/00	Included in Orcas	CCO No. 1 = No Cost for relocation of chain link gate from east to west. CCO No. 2 =$500 CMP Tee coupler and flange	$13,401 (CDS unit) $3,750 (flume approach) $593 (flume)	$18,.244
Total CDS Sites				**$47,263**	**$1,000**	**$35,197**	**$83,460**

[1] Including CCO and state-furnished material.

I-5/I-605 Extended Detention Basin (Site ID 74101) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

A storm occurred March 8, 2000 for which BC mobilized and successfully captured. Total onsite rainfall was 0.96 inches. Grab and composite samples were collected and empirical observations recorded.

Clean sample bottles were reinstalled during the routine weekly inspection, and the influent and effluent stations were put into storm readiness (March 20).

Operation and Maintenance

March 7: Site inspection was conducted; no maintenance required.

March 20: Site inspection was conducted; standing water in the effluent riser was removed.

Vector Activities

None noted during routine inspection.

Issues/Solutions

None this period.

5/605 EDB Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.17	N	N	NA	NA	N
12/31/99	0.21	N	N	NA	NA	N
1/16/00	0.01	N	N	NA	NA	N
1/25/00	0.56	Y	Y	N	N	Y
1/30-31/00	0.35	N	N	NA	NA	N
2/10-11/00	0.51	N	N	NA	NA	N
2/12-14/00	0.98	N	N	NA	NA	N
2/16/00	0.65	N	N	NA	NA	N
2/20-21/00	2.29	Y	Y	Y	Y	Y
2/23/00	1.06	N	N	NA	NA	N
2/27/00	0.21	Y	Y	Y	Y	Y
3/8/00	0.96	Y	Y	Y	Y	Y

I-605/SR-91 Extended Detention Basin (Site ID 74102) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

BC mobilized and successfully captured the storm of March 8, 2000. Total onsite rainfall measured 0.82 inches. Empirical observations were recorded; grab and composite samples were collected.

During the routine weekly inspection, clean sample bottles were installed, and the influent and effluent stations were put into storm readiness (March 20).

Operation and Maintenance

March 7: Site inspection was conducted; no maintenance required.

March 20: Site inspection was conducted; no maintenance required.

Vector Activities

None noted during routine inspection.

Issues/Solutions

None this period.

605/91 EDB Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.08	N	N	NA	NA	N
12/31/99	0.41	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.48	Y	Y	N	N	Y
1/30-31/00	0.18	N	N	NA	NA	N
2/10-11/00	0.46	N	N	NA	NA	N
2/12-14/00	1.07	N	N	NA	NA	N
2/16/00	0.45	N	N	NA	NA	N
2/20-21/00	1.73	Y	Y	Y	Y	Y
2/23/00	0.19	N	N	NA	NA	N
2/27/00	0.04	Y	Y	Y	Y	Y
3/8/00	0.82	Y	Y	Y	Y	Y

Paxton Maintenance Station Media Filter (Site ID 74103) BC

Metro Maintenance Station Multi-Chamber Treatment Train (Site ID 74104) BC

Status

Both Paxton and Metro plans and specifications continue moving forward to District clearance.

Schedule

Action	Duration	Milestone	Estimated Completion Date
Incorporate preliminary Structures and D7OE review comments;		Submit entire PS&E package	3/8/00 (actual)
Structures and D7OE Review	2.5 weeks		
		Receive comments from Structures and D7OE	3/24/00
Consultant revise PS&E	1.5 weeks		
		Submit final to D7	4/5/00
D7 process and format PS&E	4 weeks		
		D7 submit to HQ	5/3/00
HQ review and processing; advertise contract	12 – 16 weeks		
		Advertise contract	7/26/00
Bid Period and evaluate bids	5 weeks		
		Notice to Proceed	8/30/00
Construction	16 weeks		
		Construction complete	12/20/00

Alameda Maintenance Station Oil Water Separator (Site ID 74201) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

The March 8, 2000 storm event was successfully captured. Total onsite rainfall was 0.68 inches. Grab samples were taken as well as empirical observations. Composites are not taken at this location.

The station was returned to storm readiness on March 22.

Operation and Maintenance

March 22: Site inspection was conducted; no maintenance required.

Vector Activities

None noted during routine inspection.

Issues/Solutions

None this period.

Alameda MS OWS Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.38	N	N	NA	NA	N
12/31/99	0.11	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.51	Y	Y	NA*	N	Y
1/30-31/00	0.25	N	N	NA	NA	N
2/10-11/00	0.31	N	N	NA	NA	N
2/12-14/00	1.05	N	N	NA	NA	N
2/16/00	0.79	N	N	NA	NA	N
2/20-21/00	1.73	Y	Y	NA*	Y	Y
2/23/00	1.40	N	N	NA	NA	N
2/27/00	0.20	Y	Y	NA*	Y	Y
3/8/00	0.68	Y	Y	NA*	Y	Y

* The Alameda site is an Oil/Water Separator and does not have a composite sampler (as do the other BMP's).

Eastern Regional Maintenance Station Media Filter - Sand(Site ID 74202) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

BC mobilized and successfully captured the storm of March 8, 2000. This storm produced a total onsite rainfall of 1.21 inches. Grab and composite samples were collected and empirical observations taken. The BMP filled to capacity and bypass occurred.

Clean sample bottles were reinstalled during the routine weekly inspection and the influent and effluent stations were put into storm readiness (March 17).

Operation and Maintenance

March 6: Site inspection was conducted; no maintenance required.

March 17: Site inspection was conducted, which identified damaged electrical wiring in the effluent pump control box. A loose connection is suspected to have caused the fault.

Vector Activities

None noted during routine inspection.

Issues/Solutions

The effluent pump will be carefully monitored during storm events to ensure that the pump and related circuitry operate correctly.

Eastern MS MF Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.15	N	N	NA	NA	N
12/31/99	0.27	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.71	Y	Y	N	N	Y
1/30-31/00	0.20	N	N	NA	NA	N
2/10-11/00	0.49	N	N	NA	NA	N
2/12-14/00	1.51	N	N	NA	NA	N
2/16/00	0.72	N	N	NA	NA	N
2/20-21/00	2.35	Y	Y	Y	Y	Y
2/23/00	1.44	N	N	NA	NA	N
2/27/00	0.33	Y	Y	Y	Y	Y
3/8/00	1.21	Y	Y	Y	Y	Y

Foothill Maintenance Station Media Filter – Sand (Site ID 74203) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

BC mobilized and successfully captured the storm of March 8, 2000. Total onsite rainfall measured 0.80 inches. Grab and composite samples were taken; empirical observations were recorded. The BMP filled to capacity and bypass occurred.

Clean sample bottles were put in place during the routine weekly inspection and the influent and effluent stations were put into storm readiness (March 17).

Operation and Maintenance

March 6: Site inspection was conducted; no maintenance required.

March 17: During the site inspection, standing water was observed in the sedimentation chamber. Accordingly, the stand pipe drain holes were cleaned out to improve the drain time.

Vector Activities

The Media Filter was found breeding during this period. The site (the spreader trough in the media vault) was abated with Altosid liquid on March 17, 2000.

Issues/Solutions

None this period.

Foothill MS MF Monitoring Summary

Table 1. Foothill**Date**	**Rainfall Total**	**Deployment Criteria Met**	**Mobilized**	**Sampled**		**Empirical Observations**
				Comp	**Grab**	
11/8/99	0.1	N	N	NA	NA	N
12/31/99	0.28	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.68	Y	Y	N	N	Y
1/30-31/00	0.34	N	N	NA	NA	N
2/10-11/00	0.78	N	N	NA	NA	N
2/12-14/00	1.42	N	N	NA	NA	N
2/16/00	0.91	N	N	NA	NA	N
2/20-21/00	2.95	Y	Y	Y	Y	Y
2/23/00	1.59	N	N	NA	NA	N
2/27/00	0.49	Y	Y	Y	Y	Y
3/8/00	0.80	Y	Y	Y	Y	Y

Termination Park and Ride Media Filter – Sand (Site ID 74204) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

The storm occurring on March 8, 2000 was successfully captured. Total onsite rainfall measured 0.94 inches. Grab and composite samples were collected and empirical observations were documented. The BMP filled to capacity and bypass occurred.

Concurrent with the routine weekly inspection, clean sample bottles were installed, and the influent and effluent stations were placed into storm readiness (March 20).

Operation and Maintenance

March 6: Site inspection was conducted; no maintenance required.

March 20: During the site inspection, no indication of required maintenance was noted.

Vector Activities

None noted during routine inspection.

Issues/Solutions

The effluent pump does not operate at night due to the increased power load caused by the Park and Ride light fixtures. BC is investigating a lower-amperage pump for replacement to correct the problem.

Termination PR MF Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.15	N	N	NA	NA	N
12/31/99	0.10	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.61	Y	Y	N	N	Y
1/30-31/00	1.13	N	N	NA	NA	N
2/10-11/00	0.21	N	N	NA	NA	N
2/12-14/00	0.95	N	N	NA	NA	N
2/16/00	0.66	N	N	NA	NA	N
2/20-21/00	2.16	Y	Y	Y	Y	Y
2/23/00	1.01	N	N	NA	NA	N
2/27/00	0.15	Y	Y	Y	Y	Y
3/8/00	0.94	Y	Y	Y	Y	Y

Via Verde Park and Ride MCTT (Site ID 74206) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

The March 8, 2000 storm was successfully captured, which dropped a total rainfall of 0.75 inches onsite. Empirical observations were documented, and grab and composite samples were collected.

Clean sample bottles were installed during the routine weekly inspection and the influent and effluent stations were put into storm readiness (March 16).

Operation and Maintenance

March 6: Site inspection was conducted; no maintenance required.

March 16: Site inspection was conducted; no maintenance required.

Vector Activities

The MCTT at was found breeding during this period. The site was abated with Altosid liquid on March 10, 2000.

Issues/Solutions

None this period.

Via Verde PR MCTT Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.14	N	N	NA	NA	N
12/31/99	0.35	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.88	Y	Y	N	N	Y
1/30-31/00	0.34	N	N	NA	NA	N
2/10-11/00	0.90	N	N	NA	NA	N
2/12-14/00	1.02	N	N	NA	NA	N
2/16/00	1.15	N	N	NA	NA	N
2/20-21/00	2.52	Y	Y	Y	Y	Y
2/23/00	1.47	N	N	NA	NA	N
2/27/00	0.40	Y	Y	Y	Y	Y
3/8/00	0.75	Y	Y	Y	Y	Y

Lakewood Park and Ride MCTT (Site ID 74208) Brown and Caldwell

Monitoring/Sampling Activities

An underpredicted storm occurred on March 3. No teams were mobilized for this event. Another storm occurred on March 5. Since this event did not meet the 48-hour antecedent dry period criteria, no teams were mobilized for the March 5 event.

BC mobilized and successfully captured the storm of March 8, 2000, which produced a total onsite rainfall of 0.98 inches. Grab and composite samples were collected; empirical observations were recorded. The BMP filled to capacity and bypass occurred.

During the routine weekly inspection, clean sample bottles were installed, and the influent and effluent stations were put into storm readiness (March 20).

Operation and Maintenance

March 6 and March 20: Site inspection was conducted; no maintenance required.

Vector Activities

The MCTT was found breeding during this period. The site was abated with Altosid liquid on February 29 and March 14, 22, 2000.

Issues/Solutions

The transfer pump in the sediment chamber does not operate correctly due to the pump's high power load. A lower amperage pump is being investigated to correct the problem.

Lakewood PR MCTT Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.17	N	N	NA	NA	N
12/31/99	0.06	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.53	Y	Y	N	N	Y
1/30-31/00	0.32	N	N	NA	NA	N
2/10-11/00	0.34	N	N	NA	NA	N
2/12-14/00	0.46	N	N	NA	NA	N
2/16/00	0.55	N	N	NA	NA	N
2/20-21/00	1.89	Y	Y	Y	Y	Y
2/23/00	1.06	N	N	NA	NA	N
2/27/00	0.14	Y	Y	Y	Y	Y
3/8/00	0.98	Y	Y	Y	Y	Y

Altadena Maintenance Station Bio Strip and Infiltration Trench (Site ID 73211 a, b) MW/Law

Monitoring/Sampling Activities

3/2/00 through 3/25/00: Data was downloaded from the monitoring equipment.

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.43 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 2.21 inches of rainfall. No teams were mobilized because the 48-hour antecedent dry period was not met.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.55 inches of rainfall. Teams were mobilized and composite samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

3/13/00: Installed loaner Troll 4000 (pressure transducer- logs depth of water in the well).

3/21/00: Calibrated the Troll 4000.

Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.19	N	N	NA	NA	N
12/31/99	0.25	N	N	NA	NA	N
1/16/00	0.04	N	N	NA	NA	N
1/25/00	0.45	Y	Y	Y	Y	Y
1/30-31/00	0.83	N	N	NA	NA	N
2/10-11/00	0.27	N	N	NA	NA	N
2/12-14/00	0.76	N	N	NA	NA	N
2/16/00	0.90	Y	Y	Y	N	Y
2/20-21/00	3.11	Y	Y	Y	N	Y
2/23/00	1.84	N	N	NA	NA	N
2/27/00	0.77	Y	Y	Y	Y	Y
3/3-4/00	0.40	N	N	NA	NA	N
3/5-6/00	1.01	N	N	NA	NA	Y
3/7-8/00	0.83	Y	Y	Y	NA	Y

Operations and Maintenance

3/7/00: Conducted post-storm inspections and drained spreader ditch.

3/8/00: Flow passed through the entire strip and discharged into the infiltration trench. No channelization or ponding was observed. During a short period of the storm, rainfall intensity was so great that it caused runoff from the maintenance yard to sheetflow directly into the collector ditch (bypassing flume).

3/10/00: Conducted post-storm inspections and drained spreader ditch.

3/16/00: Conducted monthly inspections. Any maintenance meeting MID thresholds will be conducted during the week of 3/27/00. A detailed summary of vegetation coverage is provided as Attachment 1 of this document.

Vector Activities

None noted during routine inspection.

Issues / Solutions

3/21/00: While at the site, it was observed that the flume approach sections for the CDS units had been blown off their pallets into the biofiltration strip. Winds upwards of 40 mph occurred in the area on 3/21/00. The approach sections will be relocated onto the pavement beside the biofiltration strip by 3/25/00.

Foothill Maintenance Station Drain Inlet Insert (StreamGuard and Fossil Filter Inserts) (Site ID 73216 a, b) MW/Law

Monitoring/Sampling Activities

3/2/00 through 3/25/00: Data was downloaded from the monitoring equipment.

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.37 inch of rainfall. No teams were mobilized because the deployment criteria were not met.

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.77 inches of rainfall. A team was mobilized to conduct during storm inspections in accordance with the MID. Sampling was not performed because the 48-hour antecedent dry period was not met.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.82 inches of rainfall. Teams were mobilized because the 48-hour antecedent dry period was met and because inspection during the storm is required per the MID. Composite samples were collected at both Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Foothill MS DII Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.10	N	N	NA	NA	N
12/31/99	0.28	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.65	Y	Y	Y	NA	Y
1/30-31/00	0.31	Y	Y	Y	NA	Y
2/10-11/00	0.79	N	N	NA	NA	N
2/12-14/00	1.34	N	N	NA	NA	N

2/16/00	0.92	Y	Y	Y	NA	Y
2/20-21/00	3.05	Y	Y	Y	NA	Y
2/23/00	1.60	N	N	NA	NA	N
2/27/00	0.48	Y	Y	Y	NA	Y
3/3-4/00	0.37	N	N	NA	NA	N
3/5-6/00	1.77	N	Y*	NA	NA	Y
3/7-8/00	0.82	Y	Y	Y	NA	Y

* Deployment criteria met; team mobilized to conduct during-storm inspection.

Operations and Maintenance

3/5/00: Some debris accumulated in the Fossil Filter DII partially blocking the filter cartridge but did not cause flow bypass. DII was subsequently cleaned once during the storm event in accordance with the MID. Some trash and sediment accumulated in the StreamGuard DII. No bypass occurred and no maintenance was required.

3/7/00: Conducted pre-storm inspection of DIIs. Trash and debris were removed from the Fossil Filter DII in accordance with the MID. No maintenance was required at the StreamGuard DII.

3/8/00: Flow bypassed the Fossil Filter DII because of the cartridge's filtering capacity was exceeded. No bypass was observed at the StreamGuard DII. No maintenance was required of either DII during the storm.

3/10/00: Conducted post-storm inspection of DIIs. A small amount of organic material was removed from the Fossil Filter DII. No maintenance was required of the StreamGuard DII.

3/16/00: Conducted monthly inspections of DIIs. Some leaves and trash were removed from the Fossil Filter DII. No maintenance was required of the StreamGuard DII.

Vector Activities

None noted during routine inspection.

Issues / Solutions

None

Las Flores Maintenance Station Drain Inlet Insert (StreamGuard and Fossil Filter Inserts) (Site ID 73217 a, b) MW/Law

Monitoring/Sampling Activities

3/2/00 through 3/25/00: Data was downloaded from the monitoring equipment.

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.20 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.06 inches of rainfall. A team was mobilized to conduct during

storm inspections in accordance with the MID. Sampling was not performed because the 48-hour antecedent dry period was not met.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.91 inch of rainfall. A team was mobilized to conduct during storm inspections in accordance with the MID. Sampling was not performed because the 48-hour antecedent dry period was not met.

Las Flores MS DII Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.48	N	N	NA	NA	N
12/31/99	0.03	N	N	NA	NA	N
1/16/00	0.07	N	N	NA	NA	N
1/25/00	0.86	Y	Y	Y*	NA	Y
1/30-31/00	0.42	Y	Y	Y**	NA	Y
2/10-11/00	0.45	Y	Y	Y	NA	Y
2/12-14/00	1.67	N	N	NA	NA	N
2/16/00	0.48	N	Y***	NA	NA	Y
2/20-21/00	2.38	Y	Y	Y	NA	Y
2/23/00	1.80	N	N	NA	NA	N
2/27/00	0.50	Y	Y	Y	NA	Y
3/3-4/00	0.20	N	N	NA	NA	N
3/5-6/00	1.06	N	Y***	NA	NA	Y
3/7-8/00	0.91	N	Y***	NA	NA	Y

* Not enough sample collected from StreamGuard DII for analysis
** Not enough sample collected from Fossil Filter DII for analysis
*** Deployment criteria met; team mobilized to conduct during-storm inspection.

Operations and Maintenance

3/5/00: Sandbags were placed on the west side of the Fossil Filter DII by Caltrans staff. However, flow was still able to discharge into the DII. Trash accumulated in the Fossil Filter DII partially blocking the filter cartridge but did not cause flow bypass. DII was subsequently cleaned once during the storm event in accordance with the MID. Some organic material accumulated in the StreamGuard DII. Approximately 18” of standing water in the StreamGuard caused the fabric slip away from the drain inlet grate, which allowed flow bypass.

3/7/00: Sandbags were placed on the west side of the Fossil Filter DII by Caltrans staff. However, flow was still able to discharge into the DII. Conducted during-storm inspections of the DIIs. Sediment was removed from the top of the Fossil Filter cartridge once during the storm in accordance with the MID. Trickle flow entered the Fossil Filter DII and no bypass was observed. The StreamGuard DII was re-secured in the drain inlet by compressing the fabric against the drain inlet wall and grate using wood shims. Trickle flow entered the StreamGuard DII and no bypass was observed.

3/13/00: Sandbags were placed on the west side of the Fossil Filter DII by Caltrans staff. Conducted post-storm inspection of DIIs. Organic material was removed from the Fossil Filter DII. No maintenance was required of the StreamGuard DII.

3/16/00: Conducted monthly inspections of DIIs. Sandbags were placed on the west side of the Fossil Filter DII by Caltrans staff. No maintenance was required of the either DII.

Vector Activities

None noted during routine inspection.

Issues / Solutions

None

Rosemead Maintenance Station Drain Inlet Insert (StreamGuard and Fossil Filter Inserts) (Site ID 73218 a, b) MW/Law

Monitoring/Sampling Activities

3/2/00 through 3/25/00: Data was downloaded from the monitoring equipment.

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.53 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.57 inches of rainfall. A team was mobilized to conduct during storm inspections in accordance with the MID. Sampling was not performed because the 48-hour antecedent dry period was not met.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.81 inches of rainfall. Teams were mobilized because the 48-hour antecedent dry period was met and because inspection during the storm is required per the MID. Composite samples were collected at both Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. However, bottles containing both samples broke during transport to the laboratory. Consequently, laboratory analysis could not be conducted Empirical observations were made.

3/15/00: Repaired berm around the Fossil Filter monitoring vault.

Rosemead MS DII Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.12	N	N	NA	NA	N
12/31/99	0.34	N	N	NA	NA	N
1/16/00	0.01	N	N	NA	NA	N
1/25/00	0.72	Y	Y	Y	NA	Y
1/30-31/00	0.21	Y	Y	Y	NA	Y
2/10-11/00	0.46	N	N	NA	NA	N
2/12-14/00	1.05	N	N	NA	NA	N
2/16/00	0.90	N	Y*	NA	NA	Y
2/20-21/00	2.65	Y	Y	Y	NA	Y
2/23/00	1.89	N	N	NA	NA	N
2/27/00	0.46	Y	Y	Y	NA	Y

3/3-4/00	0.53	N	N	NA	NA	N
3/5-6/00	1.57	N	Y*	NA	NA	Y
3/7-8/00	0.81	Y	Y	N	NA	Y

* Deployment criteria met; team mobilized to conduct during-storm inspection.

Operations and Maintenance

3/5/00: Some sediment and trash accumulated in the Fossil Filter DII partially blocking the filter cartridge causing flow bypass. DII was subsequently cleaned once during the storm event in accordance with the MID. Bypass was not observed after the Fossil filter DII was cleaned. Some trash and sediment accumulated in the StreamGuard DII. No bypass occurred and no maintenance was required.

3/7/00: Conducted pre-storm inspection of DIIs. Organic material and paper were removed from the Fossil Filter DII in accordance with the MID. No maintenance was required at the StreamGuard DII.

3/8/00: Flow bypassed the Fossil Filter DII because of the cartridge's filtering capacity was exceeded. A small amount of organic material was removed from the Fossil Filter once during the storm in accordance with the MID. The StreamGuard slipped away from the curb side during the event. However, no bypass was observed at the StreamGuard DII.

3/10/00: Conducted post-storm inspection of DIIs. Trash and leaves were removed from the Fossil Filter DII. The StreamGuard DII was re-secured in the drain inlet.

3/16/00: Conducted monthly inspections of DIIs. Some leaves and trash were removed from the Fossil Filter DII. No maintenance was required of the StreamGuard DII.

Vector Activities

None noted during routine inspection.

Issues / Solutions

None

I-605/SR-91 Interchange Bio Strip & Swale (Site ID 73222 a, b) MW/Law

Monitoring/Sampling Activities

Strip:

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.40 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.01 inches of rainfall. The minimum antecedent dry period was not met. However, a team was mobilized to make hydraulic residence time measurements at the I-605/SR-91 swale and was able to make empirical observations of the strip.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.83 inches of rainfall. Teams were mobilized and grab and composite samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and

minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

3/9/00: Re-calibrated effluent sampler's aliquot volume.

605/91 Biostrip Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.09	N	N	NA	NA	N
12/31/99	0.52	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.55	Y	Y	N	N	Y
1/30-31/00	0.25	N	N	NA	NA	N
2/10-11/00	0.26	N	N	NA	NA	N
2/12-14/00	1.14	N	Y*	NA	NA	Y
2/16/00	0.62	N	N	NA	NA	N
2/20-21/00	2.14	Y	Y	N	Y	Y
2/23/00	0.98	N	N	NA	NA	N
2/27/00	0.16	Y	Y	N	N	Y
3/3-4/00	0.40	N	N	NA	NA	N
3/5-6/00	1.01	N	Y**	NA	NA	Y
3/7-8/00	0.83	Y	Y	Y	Y	Y

*A team was mobilized to the Cerritos Maintenance Station swale to conduct hydraulic residence time measurements. Empirical observations of the strip were made while the team was in the area.

**A team was mobilized to the I-605/SR-91 swale to conduct hydraulic residence time measurements. Empirical observations of the strip were made while the team was in the area.

Swale:

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.40 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.01 inches of rainfall. The minimum antecedent dry period was not met. However, a team was mobilized to make hydraulic residence time measurements at the swale.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.83 inches of rainfall. Teams were mobilized and grab and composite samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

3/21/00: Internal battery died on influent sampler. Subsequently, battery was replaced and sampler re-calibrated.

605/91 Bioswale Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.09	N	N	NA	NA	N
12/31/99	0.52	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.55	Y	Y	N	N	Y
1/30-31/00	0.25	N	N	NA	NA	N
2/10-11/00	0.26	N	N	NA	NA	N
2/12-14/00	1.14	N	Y*	NA	NA	Y
2/16/00	0.62	N	N	NA	NA	N
2/20-21/00	2.14	Y	Y	N	Y	Y
2/23/00	0.98	N	N	NA	NA	N
2/27/00	0.16	Y	Y	N	N	Y
3/3-4/00	0.40	N	N	NA	NA	N
3/5-6/00	1.01	N	Y**	NA	NA	Y
3/7-8/00	0.83	Y	Y	Y	Y	Y

*A team was mobilized to the Cerritos Maintenance Station swale to conduct hydraulic residence time measurements. Empirical observations of the swale were made while the team was in the area.

** A team was mobilized to the swale to conduct hydraulic residence timer measurements.

Operations and Maintenance

Strip:

3/5/00: Flow was perceptible as it passed through the strip. Trash and debris accumulated at the asphalt/strip interface. No channelization or ponding was observed within the strip.

3/7/00: Gopher traps set in fresh burrows and old burrows filled in with soil. One gopher caught.

3/8/00: Flow was perceptible as it passed through the strip. Trash and debris accumulated at the asphalt/strip interface. No channelization or ponding was observed within the strip.

3/20/00: Gopher traps set in fresh burrows and old burrows filled in with soil. One gopher caught.

3/22/00: Conducted monthly inspections. Any maintenance meeting MID thresholds will be conducted during the week of 3/27/00. A detailed summary of vegetation growth is provided as Attachment 1 of this document.

Swale:

3/5/00: Flow was perceptible as it passed through the swale. Trash and debris accumulated in the energy dissipator and at the concrete spreader/biofilter interface. No channelization or ponding was observed within the swale. Hydraulic residence time measurements were conducted. The hydraulic residence time was estimated to be approximately 56 minutes (calculated from the time dye first entered the swale to the time it reached the end of the swale).

3/7/00: Gopher traps set in fresh burrows and old burrows filled in with soil.

3/8/00: Flow was perceptible as it passed through the swale. Trash and debris accumulated in the energy dissipator and at the concrete spreader/biofilter interface. No channelization or ponding was observed within the swale.

3/20/00: Gopher traps set in fresh burrows and old burrows filled in with soil.

3/22/00: Conducted monthly inspections. Any maintenance meeting MID thresholds will be conducted during the week of 3/27/00. A detailed summary of vegetation coverage is provided as Attachment 1 of this document.

Vector Activities

None noted during routine inspection.

Issues / Solutions

None

Cerritos Maintenance Station Bio Swale (Site ID 73223) MW/Law

Monitoring/Sampling Activities

3/2/00 through 3/25/00: Data was downloaded from the monitoring equipment.

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.40 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.01 inches of rainfall. The minimum antecedent dry period was not met. However, a team was mobilized to make hydraulic residence time measurements at the I-605/SR-91 swale and was able to make empirical observations of the swale.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.83 inches of rainfall. Teams were mobilized and composite samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Cerritos MS Bioswale Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.09	N	N	NA	NA	N
12/31/99	0.52	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.55	Y	Y	N	N	Y
1/30-31/00	0.25	N	N	NA	NA	N
2/10-11/00	0.26	N	N	NA	NA	N
2/12-14/00	1.14	N*	Y**	NA	NA	Y
2/16/00	0.62	N	N	NA	NA	N
2/20-21/00	2.14	Y	Y	Y	Y	Y
2/23/00	0.98	N	N	NA	NA	N
2/27/00	0.16	Y	Y	N	Y	Y
3/3-4/00	0.40	N	N	NA	NA	N
3/5-6/00	1.01	N	Y***	NA	NA	Y
3/7-8/00	0.83	Y	Y	Y	NA	Y

*Criteria were not met for sampling.
**Hydraulic residence time measurements were taken.
***A team was mobilized to the I-605/SR-91 swale to conduct hydraulic residence timer measurements. Empirical observations of the swale were made while the team was in the area.

Operations and Maintenance

3/5/00: As flow progressed through the swale, it infiltrated through previously filled-in gopher holes at the downstream end of the swale causing the runoff to flow into the subsurface gopher hole laterals. Flow eventually eroded areas of the side slope where gopher holes had been previously filled in and where new gopher holes had been burrowed during the storm event, resulting in damage to the swale and flow bypass. Sediment, trash and debris accumulated in the energy dissipator and within the first third of the swale.

3/7/00: Gopher traps set in fresh burrows and old burrows filled in with soil.

3/8/00: As flow progressed through the swale, it infiltrated through previously filled-in gopher holes at the downstream end of the swale causing the runoff to flow into the subsurface gopher hole laterals. Flow eventually eroded areas of the side slope where gopher holes had been previously filled in and where new gopher holes had been burrowed during the storm event, resulting in damage to the swale and flow bypass. Sediment, trash and debris accumulated in the energy dissipator and within the first third of the swale.

3/20/00: Gopher traps set in fresh burrows and old burrows filled in with soil.

3/21/00: Repaired downstream end of swale slope by removing, replacing, and compacting a 6 to 8 foot section of the swale.

3/22/00: Conducted monthly inspections. Any maintenance meeting MID thresholds will be conducted during the week of 3/27/00. A detailed summary of vegetation coverage is provided as Attachment 1 of this document.

Vector Activities

None noted during routine inspection.

Issues / Solutions

Gophers continue to burrow through the swale.

I-5/I-605 Bio Swale (Site ID 73224) MW/Law

Monitoring/Sampling Activities

3/2/00 through 3/25/00: Data was downloaded from the monitoring equipment.

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.37 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.30 inches of rainfall. The minimum antecedent dry period was not met. However, a team was mobilized to make hydraulic residence time measurements at the swale.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.93 inches of rainfall. Teams were mobilized and composite samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

5/605 Bioswale Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.16	N	N	NA	NA	N
12/31/99	0.22	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.55	Y	Y	N	N	Y
1/30-31/00	0.30	N	N	NA	NA	N
2/10-11/00	0.45	N	N	NA	NA	N
2/12-14/00	1.01	N	N	NA	NA	N
2/16/00	0.58	N	N	NA	NA	N

2/20-21/00	2.29	Y	Y	Y	Y	Y
2/23/00	1.23	N	N	NA	NA	N
2/27/00	0.21	Y	Y	Y	Y	Y
3/3-4/00	0.37	N	N	NA	NA	N
3/5-6/00	1.30	N	Y*	NA	NA	Y
3/7-8/00	0.93	Y	Y	Y	NA	Y

** A team was mobilized to the swale to conduct hydraulic residence timer measurements.

Operations and Maintenance

3/5/00: Flow was perceptible as it passed through the swale. Trash and debris accumulated in the energy dissipator and at the concrete spreader/biofilter interface. No channelization or ponding was observed within the swale. Hydraulic residence time measurements were conducted. The hydraulic residence time was estimated to be approximately 8 minutes (calculated from the time dye first entered the swale to the time it reached the end of the swale).

3/7/00: Gopher traps set in fresh burrows and old burrows filled in with soil.

3/8/00: Flow was perceptible as it passed through the swale. Trash and debris accumulated in the energy dissipator and at the concrete spreader/biofilter interface. No channelization or ponding was observed within the swale.

3/20/00: Gopher traps set in fresh burrows and old burrows filled in with soil.

3/22/00: Conducted monthly inspections. Any maintenance meeting MID thresholds will be conducted during the week of 3/27/00. A detailed summary of vegetation coverage is provided as Attachment 1 of this document.

Vector Activities

None noted during routine inspection.

Issues / Solutions

None

I-605/Carson & Del Amo Bio Swale (Site ID 73225) MW/Law

Monitoring/Sampling Activities

3/2/00: Forecast predicted showers to produce < 0.10 inch of rainfall with a 60% probability of occurrence. Storm event produced 0.40 inch of rainfall. No teams were mobilized because the deployment criteria were not met

3/5/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 100% probability of occurrence. Storm event produced 1.01 inches of rainfall. No teams were mobilized because the minimum antecedent dry period was not met.

3/7/00: Forecast predicted rain to produce between 1 and 2 inches of rainfall with a 80% probability of occurrence. Storm event produced 0.83 inch of rainfall. Teams were mobilized and grab and composite samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Carson/Del Amo Bioswale Monitoring Summary

Date	Rainfall Total	Antecedent Dry Period & Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
11/8/99	0.09	N	N	NA	NA	N
12/31/99	0.52	N	N	NA	NA	N
1/16/00	0.00	N	N	NA	NA	N
1/25/00	0.55	Y	Y	N	N	Y
1/30-31/00	0.25	N	N	NA	NA	N
2/10-11/00	0.26	N	N	NA	NA	N
2/12-14/00	1.14	N	N	NA	NA	N
2/16/00	0.62	N	N	NA	NA	N
2/20-21/00	2.14	Y	Y*	N	Y	Y
2/23/00	0.98	N	N	NA	NA	N
2/27/00	0.16	Y	Y	N	N	Y
3/3-4/00	0.40	N	N	NA	NA	N
3/5-6/00	1.01	N	N	NA	NA	N
3/7-8/00	0.83	Y	Y	Y	NA	Y

* Hydraulic residence time measurements were taken.

Operations and Maintenance

3/8/00: Flow was perceptible as it passed through the swale. Trash and debris accumulated in the energy dissipator and at the concrete spreader/biofilter interface. No channelization or ponding was observed within the swale.

3/22/00: Conducted monthly inspections. Any maintenance meeting MID thresholds will be conducted during the week of 3/27/00. A detailed summary of vegetation coverage is provided as Attachment 1 of this document.

Vector Activities

None noted during routine inspection.

Issues / Solutions

None

District 11 BMP Pilot Sites

Monitoring Activities Applicable to all sites

On March 5, 2000, teams were mobilized for a storm event. Rainfall, percent capture, and sample aliquot numbers are provided in a table below. Additional monitoring information is provided in the discussion for each site.

March 5, 2000 Storm Event					
Site	**Influent # of Aliquots**	**% Capt.**	**Effluent # of Aliquots**	**% Capt.**	**Rainfall (inches)**
I-5/SR-56 EDB	91	100	108	100	1.12
I-15/SR-78 EDB	102	100	110	100	1.12
Manchester EDB	57	100	81	100	1.19
La Costa P&R SF	40	100	44	100	0.69
I-5/SR-78 P&R SF	50	100	53	100	1.15
Escondido MS SF	85	100	78	100	1.19
Kearny Mesa MS MF	94	99.5	93	100	1.00
Melrose Swale	17	100	0	NA	0.58
Palomar Swale	79	100	62	100	0.65
Carlsbad MS St/IT	34	92.5	12	100	0.41
La Costa WB	52	100	40	100	0.63
La Costa IB	N/A		N/A		0.52

On March 8, 2000, teams were mobilized for another storm event. Rainfall, percent capture, and sample aliquot numbers are provided in a table below. Even though this event was forecasted to be larger in San Diego than in Los Angeles, minimal rainfall fell for most sites. Only samples from Kearny Mesa Maintenance Station and I-5/SR-78 Park and Ride were sent in for analysis.

March 8, 2000 Storm Event					
Site	**Influent # of Aliquots**	**% Capt.**	**Effluent # of Aliquots**	**% Capt.**	**Rainfall (inches)**
I-5/SR-56 EDB	1	100	0	NA	0.04
I-15/SR-78 EDB	9	100	4	100	0.10
Manchester EDB	2	100	4	100	0.10
La Costa P&R SF	6	100	4	100	0.07
I-5/SR-78 P&R SF	10	100	6	100	0.19
Escondido MS SF	11	100	3	100	0.10
Kearny Mesa MS MF	38	100	37	100	0.29
Melrose Swale	2	100	0	NA	0.11
Palomar Swale	3	100	0	NA	0.11
Carlsbad MS St/IT	8	100	0	NA	0.08
La Costa WB	4	100	4	100	0.05
La Costa IB	N/A		N/A		0.07

For clarification, the storm event on March 3rd was isolated thunder showers which occurred in Los Angeles County but did not reach San Diego County.

Maintenance Activities Applicable to all sites

Site inspections have been done at all sites after monitored storm events. Minor trash pick-up occurred during these inspections.

Vector Activities Applicable to all sites

Vector inspections of all BMP sites occurred on March 6, 14 and 20.

I-5/SR-56 Extended Detention Basin (Site ID 111101) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see summary table below.

I-5/SR-56 EDB Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.17	Y	Y	Y	N	Y
2/16/00	0.20	Y	Y	Y	Y	Y
2/20-21/00	1.64	Y	Y	Y	Y	Y
3/5-6/00	1.12	Y	Y	Y	N	Y
3/7-8/00	0.04	Y	Y	N	N	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, the entire BMP (the first and second basins) was full of standing water about 1' deep. No mosquito breeding was noted. On March 14, the first basin had standing water about 2' deep and the second basin had standing water throughout with about 6" at the north end. No mosquito breeding was noted. On March 20, the first basin had about 50-60 square feet of standing water. This was found to be breeding mosquitoes. The second basin had standing water but no mosquito breeding was noted there. No treatment was deemed necessary.

Issues / Solutions

None this period.

SR-78/I-15 Extended Detention Basin (Site ID 111102) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see summary table below.

I-15/SR-78 EDB Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.30	Y	Y	Y	Y	Y
2/16/00	0.38	Y	Y	Y	Y	Y
2/20-21/00	1.99	Y	Y	Y	Y	Y
3/5-6/00	1.12	Y	Y	Y	N	Y
3/7-8/00	0.10	Y	Y	N	N	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, there was standing water about 2-4" deep at the inlet (about 200 sq. ft.) and the outlet (150 sq. ft.) and in the trough between the two. No mosquito breeding was noted. On March 14 and 20, the site was dry.

Issues / Solutions

None this period.

I-5/La Costa Avenue Infiltration Basin (Site ID 111103) KLI

Monitoring/Sampling Activities

Well depth measurements were taken on March 15 and are provided as Attachment 2 to this report.

Storm monitoring occurred on March 5 and March 8, see summary table below.

La Costa IB Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.17	Y	Y	NA	NA	Y
2/16/00	0.16	Y	Y	NA	NA	Y
2/20-21/00	1.45	Y	Y	NA	NA	Y
3/5-6/00	0.65	Y	Y	NA	NA	Y
3/7-8/00	0.06	Y	Y	NA	NA	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, there was about 2.5' of standing water in the basin, covering the surrounding asphalt path. No mosquito breeding was noted. On March 14, the standing water was about 2.4' deep in the basin. Cattails were starting to sprout. No mosquito breeding was noted. On March 20, there were about 2' of standing water in the basin and no mosquito breeding was noted.

Issues / Solutions

The solar panel was stolen on March 6 and was re-installed with locks and chains for security on March 10.

I-5/La Costa Wet Basin (Site ID 111104) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see summary table below.

La Costa WB Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.16	Y	Y	Y	Y	Y
2/16/00	0.16	Y	Y	Y	Y	Y
2/20-21/00	1.45	Y	Y	Y	Y	Y
3/5-6/00	0.63	Y	Y	Y	N	Y
3/7-8/00	0.05	Y	Y	N	N	Y

Operations and Maintenance

The diversion dam was re-built after the March 5 storm event. Mylar strips have been placed around the wet basin as a bird deterrent on March 21 per the MID.

Vector Activities

On March 6 and 14, there was standing water in the basin. Gambusia were plentiful. The cattails are encroaching into the open standing water areas. The cattails are increasing along the edges. No mosquito breeding was noted. The Wet Basin was found breeding on March 20, 2000.

Issues / Solutions

None this period.

I-5/Manchester Avenue Extended Detention Basin (Site ID 111105) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see summary table below.

Manchester EDB Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.16	Y	Y	N	N	Y
2/16/00	0.22	Y	Y	Y	Y	Y
2/20-21/00	1.53	Y	Y	Y	Y	Y
3/5-6/00	1.19	Y	Y	Y	N	Y
3/7-8/00	0.10	Y	Y	N	N	Y

Operations and Maintenance

Sediment was cleaned out of inlet channel and pipe on March 2 and 21.

Vector Activities

On March 6, the site contained a good sized pond over 1' deep. No mosquito breeding was noted. On March 14, the site was dry. On March 20, standing water covered about 60% of the bottom of the BMP. Staff noted a mosquito egg raft in the standing water but no larvae or pupae.

Issues/Solutions

None this period.

Kearny Mesa Maintenance Station StormFilter - Perlite/Zeolite (Site ID 112201) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see table below.

Kearny Mesa MS MF Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.08	Y	Y	Y	N	Y
2/16/00	0.10	Y	Y	Y	Y	Y
2/20-21/00	2.32	Y	Y	Y	Y	Y
3/5-6/00	1.00	Y	Y	Y	N	Y
3/7-8/00	0.29	Y	Y	N	N	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, 14 and 20, the first chamber held about 2' of water. There was standing water in the spreader troughs of the second, third, and forth chambers. No mosquito breeding was noted.

Issues / Solutions

None this period.

Escondido Maintenance Station Media Filter - Sand (Site ID 112202) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see table below.

Escondido MS MF Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.29	Y	Y	Y	Y	Y
2/16/00	0.50	Y	Y	Y	Y	Y
2/20-21/00	2.12	Y	Y	Y	Y	Y
3/5-6/00	1.19	Y	Y	Y	N	Y
3/7-8/00	0.19	Y	Y	N	N	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, the standing water in the first basin was about 1" below the spillway to the second basin. No mosquito breeding was noted. On March 14, the standing water in the first basin was about 4" below the spillway to the second basin. No mosquito breeding was noted. On March 20, the standing water in the first basin was about 11" deep. No mosquito breeding was noted.

Issues / Solutions

None this period.

La Costa Park and Ride Media Filter - Sand (Site ID 112203) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see table below.

La Costa P&R SF Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.19	Y	Y	Y	Y	Y
2/16/00	0.16	Y	Y	Y	Y	Y
2/20-21/00	1.45	Y	Y	Y	Y	Y
3/5-6/00	0.69	Y	Y	Y	N	Y
3/7-8/00	0.07	Y	Y	N	N	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, no mosquito breeding noted. On March 14, there was less than 1/4" of standing water in areas of the first basin. There was also standing water in the spreader trough of the second basin. No mosquito breeding was noted. On March 20, there was standing water in the spreader trough of the second basin. No mosquito breeding was noted.

Issues / Solutions

None this period.

SR-78/I-5 Park and Ride Media Filter - Sand (Site ID 112204) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see table below.

I-5/SR78 P&R SF Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.27	Y	Y	Y	Y	Y
2/16/00	0.14	Y	Y	Y	Y	Y
2/20-21/00	2.16	Y	Y	Y	Y	Y
3/5-6/00	1.15	Y	Y	N	N	Y
3/7-8/00	0.19	Y	Y	Y	N	Y

Operations and Maintenance

Sediment was cleaned out of inlet pipe on March 2.

Vector Activities

On March 6, there was standing water about 2-3" deep covering the first basin and there was also standing water in the spreader trough of the second basin. No mosquito breeding was noted. On March 14, there was standing water about 1/4" deep in the southwest corner of the first basin. There was standing water in the spreader trough of the second basin. No mosquito breeding was noted. On March 20, there was standing water in the spreader trough of the second basin. No mosquito breeding was noted

Issues / Solutions

None this period.

Melrose Ave/SR-78 Bio Swale (Site ID 112205) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see table below.

Melrose Swale Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.22	Y	Y	N	N	Y
2/16/00	0.25	Y	Y	N	N	Y
2/20-21/00	2.29	Y	Y	N	N	Y
3/5-6/00	0.58	Y	Y	N	N	Y
3/7-8/00	0.11	Y	Y	N	N	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, 14 and 20, there was no standing water. Active signs of gophers were noted.

Issues / Solutions

The solar panel at the inlet was stolen on March 6. As the inlet is constantly shaded, it was determined that a replacement solar panel was not necessary at this site.

I-5 Palomar Airport Biofiltration Swale (Site ID 112206) KLI

Monitoring/Sampling Activities

Hydraulic residence time data taken on the February 23 storm event is provided as Attachment 3 to this report.

Storm monitoring occurred on March 5 and March 8, see table below.

Palomar Swale Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.17	Y	Y	N	N	Y
2/16/00	0.16	Y	Y	N	N	Y
2/20-21/00	0.62	Y	Y	Y	Y	Y
3/5-6/00	0.65	Y	Y	Y	Y	Y
3/7-8/00	0.11	Y	Y	N	N	Y

Operation and Maintenance

Gopher holes were collapsed and plugged on March 13.

Vector Activities

On March 6, there was about 2" of standing water covering half of the second grass section. No mosquito breeding was noted. Signs of active gophers were noted. On March 14 and 20, the site was dry with signs of active gophers.

Issues / Solutions

None this period.

Carlsbad Maintenance Station Bio Strip Infiltration Trench (Site ID 112207) KLI

Monitoring/Sampling Activities

Storm monitoring occurred on March 5 and March 8, see table below.

Carlsbad MS St/IT Monitoring Summary

Date	Rainfall Total	Deployment Criteria Met	Mobilized	Sampled		Empirical Observations
				Comp	Grab	
1/25/00	0.29	Y	Y	N	N	Y
2/16/00	0.16	Y	Y	N	N	Y
2/20-21/00	0.58	Y	Y	Y	Y	Y
3/5-6/00	0.41	Y	Y	Y	Y	Y
3/7-8/00	0.11	Y	Y	N	N	Y

Operations and Maintenance

No maintenance activities to note during this period.

Vector Activities

On March 6, there was standing water about 1/4" deep in the bottom of about one half of the concrete-lined channel. No mosquito breeding was noted. On March 14 and 20, the site was dry.

Issues / Solutions

None this period.

ESTIMATED BMP OPERATION SCHEDULE FOR REMAINING SITES UNDER CONSTRUCTION

Location	BMP Type	Monitor Consultant	Estimated Date Site "On-line"[2]	Begin Instrument Install[1]	Complete Instrument Install	Operational[3] (start empirical and maintain)	Ready for Water Quality Monitoring[4]
DISTRICT 7							
I-210 East of Orcas	CDS	MW/Law	4/13/00	4/13/00	4/27/00	4/27/00	4/27/00
I-210 East of Filmore	CDS	MW/Law	4/13/00	4/13/00	4/27/00	4/27/00	4/27/00
Paxton Park & Ride	MF	BC	12/20/00	12/20/00	1/12/01	1/12/01	1/12/01
Metro MS	MCTT	BC	12/20/00	12/20/00	1/12/01	1/12/01	1/12/01

[1] Equipment installation schedule is dependent upon construction schedule.

[2] Site on-line means BMP will receive stormwater runoff, not necessarily ready for monitoring or operations.

[3] Site operational means BMP meets completion criteria and BMP is turned over to monitoring/maintenance teams to begin empirical observations and maintenance.

[4] Ready for water quality monitoring means BMP has a full equipment installation and the equipment is ready to draw samples.

SUMMARY OF REQUIRED AND SUCCESSFULLY SAMPLED STORMS PER SITE

Location	BMP Type	Monitoring Consultant	Operational (yes/no)	Operational Date	Maximum Storms Required	Successfully Sampled Storms [1]	
						1998-1999	1999-2000 PRELIMINARY
District 7							
I-605/SR-91	IB	MW/Law	Yes	4/9/99	4	N/A[5]	N/A[5]
I-210 East of Orcas	CDS	MW/Law	No	4/27/00[2]	8	0	
I-210 East of Filmore	CDS	MW/Law	No	4/27/00[2]	8	0	
I-5/I-605	EDB	BC	Yes	2/26/99	10	2	3
I-605/SR-91	EDB	BC	Yes	2/22/99	10	3	2[4]
Paxton Park & Ride	MF	BC	No	1/12//01[2]	8	0	
Metro MS	MCTT	BC	No	1/12//01[2]	8	0	
Alameda MS	OWS	BC	Yes	5/17/99	8	0	3
Eastern MS	MF	BC	Yes	2/15/99	8	1	3
Foothill MS	MF	BC	Yes	3/8/99	8	2	3
Termination Park & Ride	MF	BC	Yes	5/17/99	8	0	3
Via Verde Park & Ride	MCTT	BC	Yes	5/17/99	8	0	3
Lakewood Park & Ride	MCTT	BC	Yes	5/17/99	8	0	3
Altadena	Bio Strip	MW/Law	Yes	10/1/99	8	0	5[3,]
	Infiltration Trench	MW/Law	Yes	10/1/99	8	N/A[5]	N/A[5]
Foothill MS	DII north- SG Insert	MW/Law	Yes	1/22/99	8	4	6
	DII south- FF Insert	MW/Law	Yes	1/22/99	8	3	6[3,6]
Las Flores MS	DII north-SG Insert	MW/Law	Yes	1/22/99	8	5	4
	DII south-FF Insert	MW/Law	Yes	1/22/99	8	2	4[3]
Rosemead MS	DII north-FF Insert	MW/Law	Yes	1/22/99	8	3	4[3]
	DII south-SG Insert	MW/Law	Yes	1/22/99	8	3	4
I-605/SR-91	Bio Strip	MW/Law	Yes	1/22/99	8	0	1
	Bio Swale	MW/Law	Yes	10/1/99	8	0	1
Cerritos MS	BioSwale	MW/Law	Yes	10/1/99	8	0	3[7]
I-5/I-605	BioSwale	MW/Law	Yes	10/1/99	8	0	3
I-605/ Del Amo	BioSwale	MW/Law	Yes	10/1/99	8	0	1
District 11							
I-5/SR-56	EDB	KLI	Yes	1/24/99	4	5	4[3]
I-15/SR-78	EDB	KLI	Yes	1/24/99	10	4	4[3]
I-5/La Costa (West)	IB	KLI	Yes	1/24/99	4	N/A[5]	N/A[5]
I-5/La Costa (East)	WB	KLI	Yes	10/1/99	4	0	4[3]
I-5/Manchester (East)	EDB	KLI	Yes	10/1/99	4	0	3
Kearney Mesa MS	StormFilter (Perlite/Zeolite)	KLI	Yes	10/1/99	8	3	5[3]
Escondido MS	MF	KLI	Yes	2/16/99	8	3	4
La Costa Park & Ride	MF	KLI	Yes	2/16/99	4	3	4[3]
SR-78/I-5 Park & Ride	MF	KLI	Yes	2/26/99	8	2	5
Melrose Ave/SR-78	Bio Swale	KLI	Yes	3/1/99	8	0	
I-5 Palomar Airport Road	Bio Swale	KLI	Yes	10/1/99	8	0	2
Carlsbad MS	Bio Strip	KLI	Yes	10/1/99	4	0	2
	Infiltration Trench	KLI	Yes	10/1/99	4	N/A[5]	N/A[5]

1.

2. All DII data in question. A criteria for acceptance has been established . Data will be reviewed at the end of the year.
3. Subject to Schedule Update
4. OMM Manual goal of 12 aliquot minimum sample not attained (25 January 2000 event)
5. Less than 12 aliquots collected (at the influent at Altadena, at the effluent at the 605/91 EDB)
6. N/A – Groundwater or Vadose Zone Samples
7. OMM Manual goal of 12 aliquot minimum sample not attained (30 January 2000 event)
8. OMM Manual goal of 12 aliquot minimum sample not attained (27 February 2000 event)

OMM PLAN ACTIVITIES

Volumes I and II

No activity this period. Documents have been finalized and adopted.

Maintenance Indicator Document

A revised MID dated March 22, 2000 was submitted to the Plaintiffs via email on March 22. Revisions/additions were made regarding MCTT draining annually and guidelines on Wet Basin sediment removal.

Database

Last update on the database was on March 15, 2000. Data is posted on the web site www.rbf.com/caltrans. A site-by-site reporting feature has been incorporated to the web site.

O&M Cost

Next update will be provided with the next Biweekly Report (Report date April 7, 2000).

VECTOR ACTIVITIES

Following is a summary of vector issues from 2/29/00 to 3/25/00. Site-specific details on vector activities are provided in the OMM Activities of the individual BMP sites.

DISTRICT 7

San Gabriel Valley Vector Control District

The MCTT at the Via Verde P&R (Site #74206) was found breeding during this period. The site was abated with Altosid liquid on March 10, 2000.

The Media Filter at the Foothill MS (Site #74203) was found breeding during this period. The site (the spreader trough in the media vault) was abated with Altosid liquid on March 17, 2000.

Greater Los Angeles County Vector Control District

The MCTT at the Lakewood P&R (Site #74208) was found breeding during this period. The site was abated with Altosid liquid on February 29 and March 14, 22, 2000.

Los Angeles County West Vector Control District

No sites were found breeding during this period.

No abatement was carried out during this period.

DISTRICT 11

County of San Diego Vector Surveillance and Control

The Extended Detention Basin at I-5/SR-56 (Site #111101) and the Wet Basin at La Costa (Site #111104) was found breeding on March 20, 2000.

No abatement was carried out during this period.

Department Of Health Services

The Department of Health Services (DHS) continues soliciting vector production information from other states and municipalities with structural BMPs. At this time, 77 surveys had been returned (24 from within California and 53 from out-of-state).

DHS continues its vector production study and is collecting data on a biweekly basis.

In response to Bob Pitt's recommendations for the MCTT sites, DHS will assist Brown and Caldwell in "mosquito proofing" the MCTT at the Lakewood P&R. This will consist of examining the feasibility of utilizing a floating "pool screen" and covering the sedimentation vault with mosquito proof netting. An initial meeting of all parties has been tentatively scheduled for 3/30/00. DHS will also be available to provide guidance on mosquito proofing other BMP sites.

DHS continues to oversee all aspects of vector monitoring and data collection by the local vector control districts and incorporate this information into its database. The database is scheduled to be delivered to the pilot project team for inclusion in the overall pilot project database by 4/1/00.

DHS continues to search for engineering expertise within its organization to assist in undertaking the general design review and formulating design recommendations with regard to vector production problems associated with the BMPs.

ADULT MONITORING

Control Site Issue

The project is being carried out under the auspices of Caltrans; it is justified to locate traps on Caltrans property. One cannot place traps randomly in such densely populated urban and suburban sites because of the strong potential that traps, batteries, etc. might be vandalized, tampered with, or stolen. Theft of traps and trap components has already happened several times despite the fact that the purpose of the trapping, contact numbers, etc. are on labels, in both English and Spanish on trap components, and that we are trapping in comparatively secure locations. Additionally, there may be legal issues pertaining to trapping on property that does not belong to the California Department of Transportation.

If there is a bias resulting from the placement of the current "control" locations which are paired with stormwater BMP sites on maintenance stations, it is that the control sites might be too close to the stormwater BMP sites and the numbers of mosquitoes collected at the paired sites would be expected not to differ statistically. *Culex quinquefasciatus* is the most prevalent mosquito in the collections from sites in both Districts 7 and 11. Reisen et al. (1991. J. Medical Entomology 28: 357-371) found the mean distance dispersed by host-seeking *Culex quinquefasciatus* ranges from 0.6 to 1.0 km per day. If this mosquito were produced from standing water at a maintenance station, it can easily disperse throughout the local area. Further, if this mosquito is produced from sites outside the boundaries of the maintenance station and is drawn to the maintenance station, it is capable of dispersing throughout the maintenance station. The "control" locations are in areas (e.g., vegetation, near comparatively humid environs such as mulch piles) where one is highly likely to encounter mosquitoes. Therefore, we have purposefully made an effort not to bias the control locations by situating traps in environments that are unfavorable for mosquitoes. In fact, the control sites may provide a comparatively more favorable site for resting mosquitoes than do the fences adjacent to the stormwater BMP devices. If a stormwater BMP device were producing mosquitoes, then collections at a paired control site are more likely to be biased by the BMP-derived populations than the other way around. In fact, the converse (control sites biasing counts at a stormwater BMP device) would probably never happen. The pairing of control sites with particular stormwater BMP devices represents a reasonable effort to trap in locations that are close enough so that the background levels of mosquito activity are likely to be equivalent, yet, the sites are far enough apart so as not to significantly influence each other.

The adult mosquito monitoring data collected at each of the BMP sites and the control sites for the months of January, February, and part of March 2000 is included as Attachment 4 to this Biweekly Report.

Final Report

The Final Report on the Adult Monitoring Program is scheduled to be delivered by Dr. Walton on 8/30/00.

Sites Monitored by Vector Control District

Location	BMP Type	Monitor Consultant	Vector Control District	Activities
DISTRICT 7				
I-605/SR-91	IB	MW/Law	GLACVCD	None noted during routine inspection.
I-210 East of Orcas	CDS	MW/Law	GLACVCD	N/A
I-210 East of Filmore	CDS	MW/Law	GLACVCD	N/A
I-5/I-605	EDB	BC	GLACVCD	None noted during routine inspection.
I-605/SR-91	EDB	BC	GLACVCD	None noted during routine inspection.
Paxton Park & Ride	MF	BC	GLACVCD	N/A
Metro MS	MCTT	BC	GLACVCD	N/A
Alameda MS	OWS	BC	GLACVCD	None noted during routine inspection.
Eastern MS	MF	BC	GLACVCD	None noted during routine inspection.
Foothill MS	MF	BC	SGVVCD	None noted during routine inspection.
Termination Park & Ride	MF	BC	GLACVCD	None noted during routine inspection.
Via Verde Park & Ride	MCTT	BC	SGVVCD	Mosquito breeding detected during inspection March 10; treated with Altosid liquid on March 10.
Lakewood Park & Ride	MCTT	BC	GLACVCD	The MCTT was found breeding during this period. The site was abated with Altosid liquid on February 29 and March 14, 22, 2000.
Altadena	Bio Strip/IT	MW/Law	GLACVCD	None noted during routine inspection.
Foothill	DII	MW/Law	SGVVCD	None noted during routine inspection.
LasFlores	DII	MW/Law	LA Co West	None noted during routine inspection.
Rosemead	DII	MW/Law	SGVVCD	None noted during routine inspection.
I-605/SR-91	Bio Strip/Swale	MW/Law	GLACVCD	None noted during routine inspection.
Cerritos MS	BioSwale	MW/Law	GLACVCD	None noted during routine inspection.
I-5/I-605	BioSwale	MW/Law	GLACVCD	None noted during routine inspection.
I-605/ Del Amo	BioSwale	MW/Law	GLACVCD	None noted during routine inspection.

Location	BMP Type	Monitor Consultant	Vector Control Agency	Activities
DISTRICT 11				
I-5/SR-56	EDB	KLI	SD Co VC	List basin found breeding on March 20. None in 2nd basin; no treatment performed
I-15/SR-78	EDB	KLI	SD Co VC	None noted during routine inspection.
I-5/La Costa (West)	IB	KLI	SD Co VC	Two moquito larvae found on March 20.
I-5/La Costa (East)	WB	KLI	SD Co VC	Mosquito egg raft detected on March 20 inspection.
I-5/Manchester (East)	EDB	KLI	SD Co VC	None noted during routine inspection.
Kearny Mesa MS	StormFilter (Perlite/Zeolite)	KLI	SD Co VC	None noted during routine inspection.
Escondido MS	MF	KLI	SD Co VC	None noted during routine inspection.
La Costa Park & Ride	MF	KLI	SD Co VC	None noted during routine inspection.
SR-78/I-5 Park & Ride	MF	KLI	SD Co VC	None noted during routine inspection.
Melrose Ave/SR-78	Bio Swale	KLI	SD Co VC	None noted during routine inspection.
I-5 Palomar Airport Road	Bio Swale	KLI	SD Co VC	None noted during routine inspection.
Carlsbad MS	Bio Strip/IT	KLI	SD Co VC	None noted during routine inspection.

ENVIRONMENTAL ISSUES

The monthly monitoring survey will be conducted the week of March 27th.

Coordination and design efforts are underway for net deployment at three sites in San Diego: La Costa infiltration basin (to prevent waterfowl from carrying in San Diego fairy shrimp) and the media filters at I5/78 Park and Ride and the La Costa Park and Ride sites per the MID (prevent nesting of birds in the sand bed).

A recommendation letter is currently being prepared addressing the current gopher trapping protocol and the potential burrowing owl issues at the biofilter sites.

WEATHER

Precipitation data for Los Angeles and San Diego were obtained from NOAA.

The data presented here is as a reference only. The actual rainfall at individual BMP sites will vary from the values given in the table. The data presented above for Los Angeles is as of 4:00 p.m. for the preceding 24 hours on the date indicated. For San Diego, is as of 5:00 p.m. for the preceding 24 hours.

March 2000

Los Angeles – Downtown/USC				**San Diego**			
Day	**Precip. (Inches)**	**Day**	**Precip. (Inches)**	**Day**	**Precip. (Inches)**	**Day**	**Precip. (Inches)**
1	0.00	16	0.00	1	0.04	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.01	18	0.00	3	0.01	18	0.00
4	0.27	19	0.00	4	Trace	19	0.00
5	1.78	20	0.00	5	0.65	20	0.10
6	0.04	21	0.00	6	0.08	21	0.00
7	0.00	22	0.00	7	0.05	22	0.00
8	0.71	23	0.00	8	0.06	23	0.00
9	0.01	24	0.00	9	0.00	24	0.00
10	0.00	25		10	0.00	25	
11	0.00	26		11	0.00	26	
12	0.00	27		12	0.00	27	
13	0.00	28		13	0.00	28	
14	0.00	29		14	0.00	29	
15	0.00	30		15	0.00	30	
		31				31	

ATTACHMENTS

Attachment 1: Biofilter Vegetation Coverage – District 7

BIOFILTER VEGETATION COVERAGE – DISTRICT 7

Estimation Of Coverage

Coverage was estimated during by measuring the length of the swale or strip and the length of the total bare or total brown areas and calculating a percentage. Where bare or brown patches were very small, the area was estimated by sight. The brown areas of salt grass were examined closely to check for green tips. The following table summarizes coverage:

Site ID	Site Name	Date Inspected	% Coverage				
			Salt Grass				Erosion Control Mix
			Main Area	% Main Area Being Brown w/ Green Tips	% Main Area Being Brown: No Green Tips	Transplanted Area	Hydroseeded Area
073101	605/91 IB	3/22/00	NA	NA	NA	NA	Floor: 50; Slopes: 60-65
073211	Altadena Strip	3/16/00	98	0	0	NA	NA
073222a	605/91 Strip	3/22/00	96	1	3	55	95
073222b	605/91 Swale	3/22/00	90	0	1	Not discernible from main area	55
073223	Cerritos Swale	3/22/00	80	2	1	NA	50
073224	5/605 Swale	3/22/00	90	4	6	NA	70
073225	605/Del Amo Swale	3/22/00	98	9	9	NA	60

Photograph 1 for Site 073101

I-605/SR-91 Infiltration Basin, Showing Vegetation Cover.

Photograph 1 for Site 073211

Altadena Biofiltration Strip, Showing Vegetation Cover.

Photograph 1 for Site 073222a

I-605/SR-91 Biofiltration Strip, Showing Vegetation Cover and Larger Transplanted Area in Foreground.

Photograph 2 for Site 073222a

I-605/SR-91 Biofiltration Strip, Showing Bare Patches In Smaller Transplanted Area.

Photograph 1 for Site 073222b

I-605/SR-91 Biofiltration Swale, Showing Vegetation Cover.

Photograph 1 for Site 073223

Effluent End of Cerritos Biofiltration Swale, Showing Bare Patch and Brown Grass Where Gopher Hole Network Repairs Were

Photograph 2 for Site 073223

Cerritos Biofiltration Swale, Showing Vegetation Cover and Bare Patches At Influent End.

Photograph 3 for Site 073223

Cerritos Biofiltration Swale, Showing Repaired Embankment Near Effluent End. Repairs Required Due To Gopher Activities.

Photograph 1 for Site 073224

I-5/I-605 Biofiltration Swale, Showing Vegetation Cover. Facing North West.

Photograph 2 for Site 073224

I-5/I-605 Biofiltration Swale, Showing Vegetation Cover. Facing South East.

Photograph 1 for Site 073225

I-605/Del Amo Biofiltration Swale, Showing Area of Brown Salt Grass At Influent End.

Photograph 2 for Site 073225

I-605/Del Amo Biofiltration Swale, Showing Vegetation Cover. Facing North.

Attachment 2: PS&E Location 3, I-5/La Costa Ave Infiltration Basin – Water Surface Elevation Summary

BMP RETROFIT PILOT PROGRAM
PS&E LOCATION 3
I-5/LA COSTA AVE INFILTRATION BASIN

TABLE 1
WATER SURFACE ELEVATION SUMMARY SHEET

Date	Time	Field Reading		Pond Depth*	Groundwater Elev (FT)*	Delta	By
		Headwall (FT)	Monitoring Well (FT)	(FT)		(FT)	
12/12/1997	---	---	BORING WW-1	---	2.22	4.67	GDC
12/13/1997	---	---	BORING WW-2	---	1.69	5.20	GDC
12/23/1997	---	---	---	---	No groundwater encountered.	---	GDC
2/10/1998	---	---	3.00	---	7.92	-1.03	GDC
4/21/1998	---	---	5.85	---	7.34	-0.45	GDC
6/30/1998	10:00am	---	6.90	---	6.29	0.60	KLI
7/31/1998	4:15pm	---	6.95	---	6.24	0.65	KLI
8/31/1998	11:57am	---	7.17	---	6.02	0.87	KLI
9/28/1998	---	---	---	---	4.38	---	RBF
11/2/1998	4:04pm	---	7.60	---	5.59	1.30	KLI
11/11/1998	4:55pm	---	7.60	---	5.59	1.30	KLI
12/2/1998	---	---	7.61	---	5.58	1.31	KLI
12/17/1998	---	---	---	---	0.00	---	CT RE
1/20/1999	7:05am	---	7.14	---	6.05	0.84	GDC
2/24/1999	10:15am	2.08	---	---	---	---	GC
3/2/1999	2:00pm	1.88	---	---	---	---	AW
3/9/1999	11:00am	1.73	---	---	---	---	GC
3/12/1999	1:00pm	1.86	9.00	1.45	4.19	2.70	AW
3/16/1999	4:55pm	1.98	6.90	1.57	6.29	0.60	AW
3/23/1999	10:00am	1.76	7.08	1.35	6.11	0.78	AW
3/26/1999	10:20am	2.48	9.00	2.07	4.19	2.70	AW
3/30/1999	9:05am	2.28	8.85	1.87	4.34	2.55	AW
4/2/1999	8:15am	2.89	8.35	2.48	4.84	2.05	AW
4/6/1999	2:00pm	2.69	7.00	2.28	6.19	0.70	AW
4/9/1999	10:00am	2.67	7.00	2.26	6.19	0.70	AW
4/13/1999	10:00am	2.89	6.91	2.48	6.28	0.61	AW
4/20/1999	9:50am	2.52	9.30	2.11	3.89	3.00	AW
4/27/1999	2:25pm	2.50	7.10	2.09	6.09	0.80	AW
5/5/1999	1:10pm	2.06	7.00	1.65	6.19	0.70	AW
5/18/1999	5:55pm	1.66	7.15	1.25	6.04	0.85	AW

BMP RETROFIT PILOT PROGRAM
PS&E LOCATION 3
I-5/LA COSTA AVE INFILTRATION BASIN

TABLE 1
WATER SURFACE ELEVATION SUMMARY SHEET

Date	Time	Field Reading		Pond Depth*	Groundwater Elev (FT)*	Delta	By
		Headwall (FT)	Monitoring Well (FT)	(FT)		(FT)	
5/25/1999	5:40pm	1.50	7.10	1.09	6.09	0.80	AW
6/8/1999	5:40pm	1.30	7.25	0.89	5.94	0.95	AW
6/15/1999	1:45pm	1.10	7.20	0.69	5.99	0.90	AW
6/28/1999	1:50pm	0.82	7.30	0.41	5.89	1.00	AW
7/7/1999	12:45pm	0.62	7.50	0.21	5.69	1.20	AW
7/19/1999	10:30am	0.43	7.40	0.02	5.79	1.10	AW
8/3/1999	11:45am	0.22	7.50	-0.19	5.69	1.20	AW
8/17/1999	10:50am	0.12	7.55	-0.29	5.64	1.25	AW
8/31/1999	9:50am	0.12	7.55	-0.29	5.64	1.25	AW
9/15/1999	11:45am	-0.26	7.60	-0.67	5.59	1.30	AW
9/28/1999	11:55am	0.08	7.60	-0.33	5.59	1.30	AW
10/12/1999	10:05am	0.08	7.65	-0.33	5.54	1.35	AW
10/26/1999	3:00pm	0.08	7.70	-0.33	5.49	1.40	AW
11/9/1999	2:35pm	0.08	7.65	-0.33	5.54	1.35	AW
11/23/1999	4:05pm	No standing water.	7.60	No standing water.	5.59	1.30	FP
12/8/1999	10:15am	No standing water.	7.75	No standing water.	5.44	1.45	AW
12/21/1999	3:30pm	No standing water.	7.75	No standing water.	5.44	1.45	AW
1/4/2000	12:20pm	No standing water.	7.65	No standing water.	5.54	1.35	AW

BMP RETROFIT PILOT PROGRAM
PS&E LOCATION 3
I-5/LA COSTA AVE INFILTRATION BASIN

TABLE 1
WATER SURFACE ELEVATION SUMMARY SHEET

Date	Time	Field Reading		Pond Depth*	Groundwater Elev (FT)*	Delta	By
		Headwall (FT)	Monitoring Well (FT)	(FT)		(FT)	
1/18/2000	8:50am	No standing water.	7.85	No standing water.	5.34	1.55	AW
2/1/2000	10:15am	Small Pools.	7.45	No standing water.	5.74	1.15	CW
2/15/2000	4:45pm	1.60	7.50	1.19	5.69	1.20	MZ
2/29/2000	12:30pm	2.90	7.25	2.49	5.94	0.95	MZ
3/15/2000	2:30pm	2.90	7.18	2.49	6.01	0.88	CW

*
Temporary Well: Well Cover elevation 10.99 ft (3.35m). Well rim elevation 10.92 ft.

WSE at monitoring well = Well cover elevation (FT) - Monitoring Well Reading (FT)

*
Permanent Well: Monitoring well notch at elevation 13.186 ft (4.02m)

WSE at monitoring well = Notch elevation (FT) - Monitoring Well Reading (FT)
Monitoring Well reading = Distance to groundwater surface

*
Pond Depth = Headwall Field Reading (FT) - Pipe Invert Location on the Headwall Gauge (FT)

Pipe Invert Location on the Headwall Gauge (FT) = 0.41 ft
Note: Negative Pond Depths indicate ponded water is below invert.
This is due to scour and settlement of the invert material.

Delta = Basin Invert - Groundwater elevation
Basin Invert = 6.89 FT (2.1m)

AW- RBF
FP- RBF
GC- RBF
GDC-Group Delta Consultants (Formerly LKR- The LKR Group, Consulting Geotechnical Engineers)
KLI- Kinnetic Laboratories, Inc.
CT RE- Caltrans Resident Engineer

Comment
Existing surface elevation: 10.22 ft (3.117m)
Existing surface elevation: 10.69 ft (3.258m)
SD-7 Initial investigation monitoring well installed. (Bottom at 5 ft bgs.)
Reading after a series of rain storms. Adjacent ground saturated and surface ponding observed.
SDMW-1 Permanent monitoring well installed. (Bottom at 20 ft bgs.)
Exploratory hole excavated by contractor. Ground water elevation 0.54ft below original design invert, 4.92ft (1.5m)
Exploratory holes excavated 10.2 feet below invert elevation. No groundwater observed.
No signs of mosquitoes. Surface has 2"-3" dia algae.
No vector issues.
No vector issues - no algae present from 2/24/99.
No vector issues, < 0.1in rain on 3/11/99, no algae.
No vector issues, < 0.2in rain on 3/15/99, 2mm dia algae scattered on water surface. Dried high-algae-line observed on headwall at 2.84ft mark.
No vector issues, no algae.
No vector issues, < 0.5in rain on 3/25/99, no algae.
No vector issues, 6-sf algae at NW corner. Vector Control District treated basin with Altosid briquettes and stocked basin with mosquito fish.
No vector issues, <0.5in rain on 4/1/99, no algae.
No vector issues, no algae. No vector issues, 1mm dia algae, 8sf at NW corner.
No vector issues, <0.8in rain on 4/11/99, <1mm dia algae approx 8sf.
No vector issues, alga mats at NW corner.
No vector issues, 6-1-2ft dia alga mats.
No vector issues, few scattered 1-5mm dia algae.
Minor vector issues, refer to OMM Vector Issues, collection of small floating algae mats varying 4-8" wide and approx. 10ft long.

Comment
No vector issues, 6-12" wide alga mat at perimeter of the basin.
No vector issues, alga mats at perimeter and interior of the basin. <0.14" Rain rcvd June 1,2,3
No vector issues, alga mats at perimeter and interior of the basin.
No vector issues, alga mats at perimeter and scattered 2/3 length within basin interior.
No vector issues, alga mats 2/3 length of the basin at perimeter and scattered 10inch mats within interior.
No vector issues, alga mats cover 60% of basin.
No vector issues, alga mats cover 90% of basin.
Basin is empty. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft). No vector issues.
Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft). No vector issues.
Basin is empty. Surface of the southern portion of the basin is dry. A 1sft, 1in deep puddle of water is located at the scour hole adjacent to the outlet. No vector issues.
Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft). No vector issues.
Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft). No vector issues.
Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft). No vector issues.
Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft). No vector issues.
Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed. No vector issues.
Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed. No vector issues.
Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed. No vector issues.
Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed. No vector issues.

Comment
Basin is empty. Surface of the basin is damp. The invert of the scour hole at the outlet is saturated. No ponding was observed. No vector issues.
Ponding was observed in several small pools in center of basin. Strong H2S smell from well.
Strong H2S smell from well. Basin has a large pool of water at 1.6ft. No vectors present.
Groundwater was sampled for water quality. Strong H2S smell from well. Basin at capacity with a 2.9 ft stage. No vectors present.
Strong H2S smell from well. Basin at capacity with a 2.9 ft stage. No vectors present.

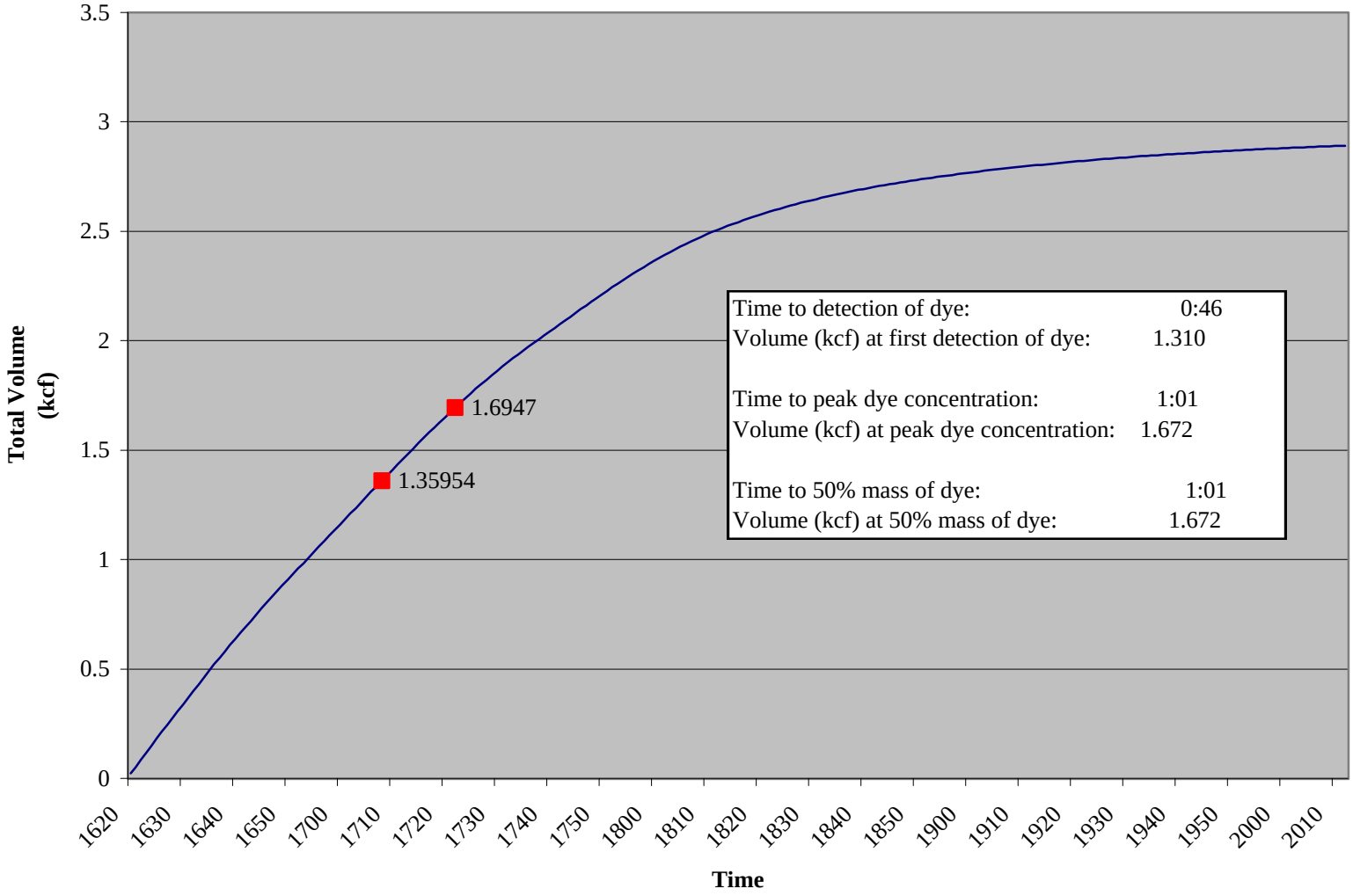
Attachment 3: Palomar Hydraulic Residence Time

Total Volume

Flow Rate

Fluorescence

Palomar Hydraulic Residence Time:
Total Volume



Attachment 4: Vector Control Sites

		Caltrans Retrofit Pilot Program District 7			Host-seeking	Total	Gravid
Date	WQ Site No.	Bkgrnd. Monitor No.	Site	BMP Type	mosquitoes	midges	mosquitoes
1/20/2000		1	I-210/West of Orcas Ave.	Control	0	0	1
1/20/2000	73102	2	I-210/East of Orcas Ave.	CDS	0	0	0
1/20/2000	73103	3	I-210/East of Filmore St.	CDS	0	0	0
1/20/2000		4	I-210/East of Van Nuys Blvd.	Control	0	0	0
1/20/2000	73217	5	Las Flores MS	DII	0	0	0
1/20/2000	73218	6	Rosemead MS	DII	0	0	24
1/20/2000	74203	7	Foothill MS	MF	0	0	0
1/20/2000	74102	8	I-605/SR-91 Intersection	EDB	0	0	0
1/20/2000	74101	9	I-5/I-605 Intersection	EDB	0	0	5
1/20/2000	73101	10	I-605/SR-91 Interchange	IB	0	6	11
1/20/2000	73211a,b	11	Altadena MS	Bio. Strip + IT	0	0	0
1/20/2000	73223	12	Cerritos MS	Bio. Swale	0	0	4
1/20/2000	73222a,b	13	I-605/SR-91 Interchange	Bio.Strip+Swale	0	0	8
1/20/2000	73224	14	I-5/I-605	Bio. Swale	0	0	8
1/20/2000	73225	15	I-605/Carson & Del Amo Ave.	Bio. Swale	0	0	5
1/20/2000	74202	16	Eastern Regional MS	MF	0	0	0
1/20/2000	74204	17	Termination P&R	MF	0	1	13
1/20/2000	74103	18	Paxton P&R	MF	0	0	1
1/20/2000	74201	19	Alameda MS	Oil/Water Sep.	0	0	3
1/20/2000	74104	20	Metro MS	MCTT	0	0	2
1/20/2000	74206	21	Via Verde P&R	MCTT	0	1	2
1/20/2000	74208	22	Lakewood P&R	MCTT	0	0	9
1/20/2000		23	Foothill MS	Control	0	0	0
1/20/2000		24	Altadena MS	Control	0	0	0
1/20/2000		25	Eastern Regional MS	Control	0	0	0
1/20/2000		26	Termination P&R	Control	0	8	5
		Caltrans Retrofit Pilot Program District 11					
1/10/2000	111102	1	I-15/SR-78	EDB	0	0	0
1/10/2000	111105	2	I-5/ Manchester Ave.	EDB	0	0	0
1/10/2000	112207a,b	3	Carlsbad MS	Bio. Strip + IT	0	0	0
1/10/2000	112206	4	I-5/Palomar Airport Rd.	Bio. Strip	0	0	0
1/10/2000	112205	5	SR-78/Melrose Dr.	Bio. Swale	0	0	2
1/10/2000	111103	6	I-5/La Costa Ave. (w)	Control	0	0	0
1/10/2000	111104	7	I-5/La Costa Ave (se)	Wet Basin	0	0	0
1/10/2000	112202	8	Escondido MS	MF/Control	0	0	0
1/10/2000	112203	9	I-5/La Costa P&R	MF	0	0	0
1/10/2000	112204	10	SR-78/I-5 P&R	MF	0	6	0
1/10/2000	111101	11	I-5/SR-56	EDB	0	0	0
1/10/2000	112201	12	Kearny Mesa MS	MF	1	1	0
1/10/2000		13	Carlsbad MS	Control	0	0	0
1/10/2000		14	Kearny Mesa MS	Control	0	0	0
		Caltrans Retrofit Pilot Program District 11					
1/28/2000	111102	1	I-15/SR-78	EDB	0	0	0
1/28/2000	111105	2	I-5/ Manchester Ave.	EDB	1	2	0
1/28/2000	112207a,b	3	Carlsbad MS	Bio. Strip + IT	0	2	1
1/28/2000	112206	4	I-5/Palomar Airport Rd.	Bio. Strip	0	0	0
1/28/2000	112205	5	SR-78/Melrose Dr.	Bio. Swale	0	0	1
1/28/2000	111103	6	I-5/La Costa Ave. (w)	Control	3	0	0
1/28/2000	111104	7	I-5/La Costa Ave (se)	Wet Basin	1	0	1
1/28/2000	112202	8	Escondido MS	MF/Control	0	0	0
1/28/2000	112203	9	I-5/La Costa P&R	MF	0	0	0
1/28/2000	112204	10	SR-78/I-5 P&R	MF	0	1	1
1/28/2000	111101	11	I-5/SR-56	EDB	0	1	0
1/28/2000	112201	12	Kearny Mesa MS	MF	0	0	0
1/28/2000		13	Carlsbad MS	Control	0	0	0
1/28/2000		14	Kearny Mesa MS	Control	0	0	1

Attachment 5: Preliminary Water Quality Data - Additions since last year's data is printed in Red

BMP Retrofit Pilot Study - District 11, Draft Analytical Data

PRELIMINARY DATA

Submitted 2/29/00

Sample Date	Location	Site ID	BMP Type	% Storm Capture	pH	Specific Conductance (umhos/cm)	Hardness (mg/L)	TSS (mg/L)	Total (ug/L) Cu	Total (ug/L) Pb	Total (ug/L) Zn	Dissolved (ug/L) Cu	Dissolved (ug/L) Pb	Dissolved (ug/L) Zn	Nitrate-Nitrogen (mg/L)	TKN (mg/L)	Total P (mg/L)	Fecal Coliform (MPN/ 100 ml)	TPH - Diesel (ug/L)	TPH - Gasoline (ug/L)	
Storm Water Matrix																					
10/27/1999	Carlsbad MS GW Well (Baseline)		Biofiltration strip/ infiltration trench	NA	6.5	16000	2500	12	29	0.5	18	22	0.5	15	58.0	0.7	0.21	<200	<100	<50	
9/30/1999	La Costa WET inflow (Baseline)		Wet Basin	NA	7.5	3100	1700	<1	130	3.3	56	130	2.0	52	25	2.2	3.7	<200	1100*	<50	*Quantified as diesel but chromatographic pattern does not match th
10/28/1999	La Costa WET inflow (Baseline)		Wet Basin	NA	7.5	2900	910	2	120	1.2	72	110	1.2	70	11	0.78	3.6	<200	<100	<50	
11/30/1999	La Costa WET inflow (Baseline)		Wet Basin	NA	7.4	2700	1100	9	60	3.8	38	58	1.8	37	12	1.5	3.0	<200	<100	<50	
12/28/1999	La Costa WET inflow (Baseline)		Wet Basin	NA	7.5	2800	1100	44	80	8.2	140	53	1.9	100	20	2	4.6	50	<100	<50	
2/3/2000	La Costa WET inflow (Baseline)		Wet Basin	NA														9000			
1/18/2000	La Costa Infiltration (Baseline)		Infiltration Basin	NA														<200			