STORMWATER MONITORING AND RESEARCH PROGRAM

ANNUAL DATA SUMMARY REPORT

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EXECUTIVE SUMMARY

The Caltrans Stormwater Monitoring and Research Program is a multi-year study to characterize stormwater and stormwater-related materials which are carried from Caltrans facilities and into adjacent surface water bodies by rain and snowmelt runoff. The program also includes studies of proposed technologies to treat storm-related runoff from Caltrans facilities in order to comply with the requirements of the State Water Resources Control Board and associated Regional Water Quality Control Boards. This report comprises a summary of all data generated from this program during the 2006-2007 storm season.

During the 2006-2007 monitoring season, samples were collected for water quality (water chemistry) analysis and for quantification of gross solids (vegetation and litter). No sediment samples were collected for particle size analysis during the season. Samples were collected for water quality analysis from two sites in Caltrans District 1, six sites in Caltrans District 2, sixteen sites in Caltrans District 3, five sites in District 4, seven sites in District 7, four sites in District 11, and thirty seven sites in District 12, for a total of 77 monitoring sites throughout California. Samples were collected for gross solids analysis from one site in Caltrans District 12.

A total of 12,675 data points for water quality and two data points for gross solids were generated during the 2006-2007 storm season.

This report summarizes water quality data and gross solids data. Water quality data presented in this document may be considered to fall into one of two categories: *Stormwater Runoff Characterization* data is taken from stormwater runoff from Caltrans facilities throughout the State, and is intended to describe typical water quality of Caltrans runoff. *Treatment Technology Pilot Studies* data is taken from samples of water that flows through proposed water-quality treatment devices in order to assess the effectiveness and efficiency of these devices.

Stormwater Runoff Characterization and Treatment Technology Pilot Studies data are summarized in Section 2 of this report. Gross solids data is summarized in Section 3.

NOTES ON REPORTING

The Caltrans Data Analysis Tool was used to calculate the mean and standard deviation for data sets containing non-detect (censored) data. In the statistical summary tables, constituents showing no mean or standard deviation values (denoted "--") had insufficient detected data to perform these analyses.

Throughout this report each data set is summarized as a range of observed values expressed as a minimum and maximum reported value. When this range is bounded by a non-detected value, the range boundary is given as "<" (less than) the reporting limit.

Analytical constituents are often reported as either Total or Dissolved fractions, or both. Dissolved measurements are made on samples that have been passed through a 0.45 micron filter in order to remove particulate matter prior to analysis. Total measurements are made on unfiltered samples.

Each monitoring site in this report is designated by a unique monitoring site identifier (Site ID). Site IDs are composed of two parts separated by a hyphen; the first part is the number of the Caltrans District in which the monitoring site resides, and the second part is a sequentially assigned three-digit number. For example, monitoring site 201 in Caltrans District 7 is identified as Site ID 7-201. The site number portion a Site ID is not unique; individual sites in different Caltrans districts can be assigned the same site number. For example, site number 201 exists in Caltrans District 6 (Site ID 6-201) and in Caltrans District 7 (Site ID 7-201).

SECTION 1 Introduction

This report comprises a summary of all data generated from the Caltrans Stormwater Monitoring and Research Program during the 2006-2007 storm season. The season ran from October 1, 2006, to April 30, 2007. A total of 12,677 data points were generated during the season, including 12,675 data points for water quality and two data point for gross solids.

Both water quality (water chemistry) and gross solids (litter and vegetation) data are presented in this report. No sediment characterization studies were performed during the 2006-2007 monitoring season.

Water quality data contained in this report was generated from the analysis of flow-weighted composite samples with two exceptions. The water chemistry samples for the Gross Solids Removal Device Pilot Study were collected as grab samples; and the microbiology and oil & grease data for all projects were generated from the analysis of grab samples.

Samples were collected and analyzed in accordance with the Caltrans Comprehensive Protocols Guidance Manual. Laboratory and field data were validated using the Caltrans Laboratory Electronic Data Deliverables (EDD) Error Checker and the Caltrans Automated Data Validation Program.

Water quality data in this report is presented in summary format. Each data set is summarized in a table which consists of the number of samples in the data set (n), standard deviation, mean concentration, and percentage of samples in which the analyte was detected. The Caltrans Data Analysis Tool was used to generate summary statistics for data sets that contained non-detect (censored) data. Analytical results are reported as a range of the lowest and highest observed value.

Organization of This Report

Water quality data presented in this report are grouped together by project, and are ordered within each project by Caltrans Site ID. Caltrans stormwater quality monitoring data may be thought of as falling into the following two general categories.

Runoff Characterization Data

The Caltrans Statewide Runoff Characterization Study is a multi-year project designed to characterize the quality of stormwater runoff from representative Caltrans facilities such as freeways and highways, Park-and-Ride facilities, rest areas, vehicle inspection facilities, toll plazas, and maintenance yards. Monitoring sites have been selected which represent typical Caltrans operations. Runoff characterization data is generated from samples of untreated runoff at the monitoring locations, and is used to ascertain what materials are carried by precipitation

runoff from Caltrans facilities. In this document, runoff characterization data are designated with sample names that include the word “Influent”, or “In”.

Stormwater Treatment Technology Pilot Studies Data

Runoff from Caltrans facilities often requires treatment before it is allowed to enter the surrounding surface water bodies. Untreated runoff may contain materials such as metals, sediment, organic compounds, anions and cations, pathogens such as coliform bacteria, nutrients, and pesticides which have the potential to negatively impact natural water bodies. Treatment best management practices (BMPs) are developed to remove these constituents before the runoff is released into the environment. Before a treatment BMP is approved by Caltrans for general use it must be tested to ensure that it removes compounds of concern effectively and reliably, that it does not contribute materials to the runoff stream which could compromise the surrounding environment, and that it does not entail unacceptable construction costs, maintenance costs, or maintenance requirements.

When a new BMP design is being evaluated, samples are typically collected from both the influent and effluent of the BMP under consideration. A comparison of the water quality between influent and effluent is used to appraise BMP performance. Since influent data from BMP pilot studies is generated from the analysis of untreated runoff from Caltrans facilities, this data is also used as runoff characterization data.

Water quality data are presented in Section 2 of this report.

Gross Solids

Runoff from Caltrans facilities often contains Gross Solids, defined as vegetation and litter of manmade origin. Treatment BMPs are used in some locations to remove Gross Solids from Caltrans stormwater runoff before it enters receiving waters. Pilot studies have been initiated to evaluate several BMP designs for removing Gross Solids from stormwater runoff. data for one Gross Solids BMP pilot study was generated during the 2006-2007 storm season.

Gross Solids data are presented in Section 3 of this report.

SECTION 2 Stormwater Quality Data Summary

2.1 Areas of Special Biological Significance (ASBS) Study

An Area of Special Biological Significance (ASBS) is defined in the California Ocean Plan (Ocean Plan) as a marine area which requires "protection of species or biological communities to the extent that alteration of natural water quality is undesirable."

The ASBS Monitoring Project was developed to characterize stormwater runoff from Caltrans highways which are tributary to ASBSs on the California Coast. This project also includes several natural streams which discharge into or near ASBSs. The ASBS study was initiated at the request of the State Water Quality Control Board.

Table 2.1.0 Areas of Special Biological Significance Monitoring Sites

Site ID	Outfall ID	Caltrans District	Regional Board	County	Catchment Area (he)
1-301	ASBS 8	1	North Coast	Del Norte	Not Reported
4-301	ASBS 9	4	Central Coast	San Mateo	Not Reported
4-302	ASBS 15	4	Central Coast	San Mateo	Not Reported
7-304	ASBS 24	7	Los Angeles	Ventura	Not Reported
12-331	ASBS 33	12	Santa Ana	Orange	Not Reported
1-302	Wilson Creek	1	North Coast	Del Norte	103.5
4-303	Waddell Creek	4	Central Coast	Santra Cruz	304.11

Table 2.1. 1 Caltrans Site ID 1-301 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	27 - 747	168	393	6	100.0%
Hardness as CaCO3	mg/L	6 - 48	20	19	6	100.0%
Ph	pH Units	6.1 - 6.6	6.3	0.24	6	100.0%
TSS	mg/L	1 - 17	6.5	6.4	6	100.0%
Turbidity	NTU	1.5 - 28	9.2	11	6	100.0%
Nutrients						
Ammonia-N	mg/L	<0.01 - 0.54	0.12	0.18	12	50.0%
Nitrate-N	mg/L	<0.1 - 0.39	--	--	6	33.3%
TOC	mg/L	2.5 - 82	17	44	6	100.0%
DOC	mg/L	2.5 - 72	15	39	6	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.07	--	--	6	16.7%
Orthophosphate, Total	mg/L	<0.03 - 0.05	--	--	6	33.3%
Metals						
Antimony, Total	ug/L	<0.5 - 1.4	--	--	6	33.3%
Antimony, Dissolved	ug/L	<0.5 - 0.8	--	--	6	33.3%
Arsenic, Total	ug/L	<0.5 - 0.8	--	--	6	33.3%
Arsenic, Dissolved	ug/L	<0.5 - <0.5	--	--	6	0.0%
Beryllium, Total	ug/L	<1 - <1	--	--	6	0.0%
Beryllium, Dissolved	ug/L	<1 - <1	--	--	6	0.0%
Cadmium, Total	ug/L	<0.2 - 0.2	--	--	6	33.3%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	6	16.7%
Chromium, Total	ug/L	<1 - 12	3.5	5.3	6	83.3%
Chromium, Dissolved	ug/L	<1 - 2.1	1.4	0.53	6	83.3%
Cr (VI)	ug/L	<0.5 - 0.84	--	--	6	16.7%
Copper, Total	ug/L	2.5 - 15	5.8	5.8	6	100.0%
Copper, Dissolved	ug/L	2.4 - 9.8	4.5	3.3	6	100.0%
Lead, Total	ug/L	<0.5 - 2.1	1.1	0.72	6	66.7%
Lead, Dissolved	ug/L	<0.5 - 0.5	--	--	6	16.7%
Mercury, Total	ug/L	<0.0018 – 0.01	0.0016	0.0041	90	54.4%
Mercury, Dissolved	ug/L	<0.2 - <0.2	--	--	42	0.0%
Nickel, Total	ug/L	5.5 - 26	11	9.3	6	100.0%
Nickel, Dissolved	ug/L	3.6 - 16	6.9	5.6	6	100.0%
Selenium, Total	ug/L	<2 - <2	--	--	6	0.0%
Selenium, Dissolved	ug/L	<2 - <2	--	--	6	0.0%
Silver, Total	ug/L	<0.2 - 0.8	--	--	6	33.3%
Silver, Dissolved	ug/L	<0.2 - 0.2	--	--	6	16.7%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Thallium, Total	ug/L	<1 - <1	--	--	6	0.0%
Thallium, Dissolved	ug/L	<1 - <1	--	--	6	0.0%
Zinc, Total	ug/L	21 - 120	41	52	6	100.0%
Zinc, Dissolved	ug/L	15 - 78	30	31	6	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1 - 4	--	--	7	71.4%
Microbiologicals						
Fecal Coliform	MPN/100 mL	23 - 3000	1093	1554	4	100.0%
Total Coliform	MPN/100 mL	1300 - 11000	5575	4518	4	100.0%
Polynuclear Aromatic Hydrocarbons						
Acenaphthylene	ug/L	<2 - <2	--	--	6	0.0%
Anthracene	ug/L	<2 - <2	--	--	6	0.0%
Benzo(a)Anthracene	ug/L	<2 - <2	--	--	6	0.0%
Benzo(a)Pyrene	ug/L	<2 - <2	--	--	6	0.0%
Benzo(b)Fluoranthene	ug/L	<2 - <2	--	--	6	0.0%
Benzo(ghi)Perylene	ug/L	<2 - <2	--	--	6	0.0%
Benzo(k)Fluoranthene	ug/L	<2 - <2	--	--	6	0.0%
Chrysene	ug/L	<2 - <2	--	--	6	0.0%
Dibenzo(a,h)Anthracene	ug/L	<2 - <2	--	--	6	0.0%
Fluorene	ug/L	<2 - <2	--	--	6	0.0%
Indeno(1,2,3-c,d)Pyrene	ug/L	<2 - <2	--	--	6	0.0%
Phenanthrene	ug/L	<2 - <2	--	--	6	0.0%
Pyrene	ug/L	<2 - <2	--	--	6	0.0%

Table 2.1. 2 Caltrans Site ID 4-301 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	89 - 192	137	46	5	100.0%
Hardness as CaCO3	mg/L	20 - 72	41	22	5	100.0%
pH	pH Units	5.8 - 6.6	6.3	0.36	5	100.0%
TSS	mg/L	5 - 214	83	92	5	100.0%
Turbidity	NTU	29 - 295	119	124	5	100.0%
Nutrients						
Ammonia-N	mg/L	<0.01 - 1.3	0.49	0.4	11	90.9%
Nitrate-N	mg/L	0.12 - 0.23	0.18	0.047	5	100.0%
TOC	mg/L	6.3 - 17	10	5.3	5	100.0%
DOC	mg/L	4.3 - 10	7.5	2.5	5	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.15	0.059	0.079	5	60.0%
Orthophosphate, Total	mg/L	<0.03 - 0.04	--	--	5	40.0%
Metals						
Antimony, Total	ug/L	1 - 7.3	4.5	2.6	5	100.0%
Antimony, Dissolved	ug/L	<0.5 - 4.2	2.5	1.8	5	80.0%
Arsenic, Total	ug/L	<0.5 - 0.8	--	--	5	40.0%
Arsenic, Dissolved	ug/L	<0.5 - 0.6	--	--	5	60.0%
Beryllium, Total	ug/L	<1 - <1	--	--	5	0.0%
Beryllium, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Cadmium, Total	ug/L	<0.2 - 0.4	--	--	5	40.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	5	0.0%
Chromium, Total	ug/L	4.8 - 19	11	5.9	5	100.0%
Chromium, Dissolved	ug/L	2.7 - 6.3	4.1	1.7	5	100.0%
Cr (VI)	ug/L	<0.5 - 2.9	2	0.87	5	80.0%
Copper, Total	ug/L	14 - 56	33	17	5	100.0%
Copper, Dissolved	ug/L	6.8 - 18	12	4.6	5	100.0%
Lead, Total	ug/L	2.6 - 21	10	8	5	100.0%
Lead, Dissolved	ug/L	0.6 - 3.2	1.7	1.2	5	100.0%
Mercury, Total	ug/L	0.002 – 0.0087	0.0055	0.0029	11	100.0%
Mercury, Dissolved	ug/L	<0.2 - <0.2	--	--	5	0.0%
Nickel, Total	ug/L	6.7 - 21	13	5.9	5	100.0%
Nickel, Dissolved	ug/L	2.2 - 6.2	4.6	1.7	5	100.0%
Selenium, Total	ug/L	<2 - <2	--	--	5	0.0%
Selenium, Dissolved	ug/L	<2 - <2	--	--	5	0.0%
Silver, Total	ug/L	<0.2 - 0.2	--	--	5	40.0%
Silver, Dissolved	ug/L	<0.2 - 0.2	--	--	5	20.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Thallium, Total	ug/L	<1 - <1	--	--	5	0.0%
Thallium, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Zinc, Total	ug/L	33 - 180	93	63	5	100.0%
Zinc, Dissolved	ug/L	16 - 87	36	36	5	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	1 - 7	4.3	2.5	6	100.0%
Microbiologicals						
Total Coliform	MPN/100 mL	50 - 38000	13050	17999	5	100.0%
Fecal Coliform	MPN/100 mL	30 - 14000	3915	8848	4	100.0%
Enterococus	MPN/100 mL	240 - 46000	12626	23595	5	100.0%
Polynuclear Aromatic Hydrocarbons						
Acenaphthylene	ug/L	<2 - <2	--	--	5	0.0%
Anthracene	ug/L	<2 - <2	--	--	5	0.0%
Benzo(a)Anthracene	ug/L	<2 - <2	--	--	5	0.0%
Benzo(a)Pyrene	ug/L	<2 - <2	--	--	5	0.0%
Benzo(b)Fluoranthene	ug/L	<2 - <2	--	--	5	0.0%
Benzo(ghi)Perylene	ug/L	<2 - <2	--	--	5	0.0%
Benzo(k)Fluoranthene	ug/L	<2 - <2	--	--	5	0.0%
Chrysene	ug/L	<2 - <2	--	--	5	0.0%
Dibenzo(a,h)Anthracene	ug/L	<2 - <2	--	--	5	0.0%
Fluorene	ug/L	<2 - <2	--	--	5	0.0%
Indeno(1,2,3-c,d)Pyrene	ug/L	<2 - <2	--	--	5	0.0%
Phenanthrene	ug/L	<2 - <2	--	--	5	0.0%
Pyrene	ug/L	<2 - <2	--	--	5	0.0%

Table 2.1. 3 Caltrans Site ID 4-302 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	13 - 53	28	21	4	100.0%
Hardness as CaCO3	mg/L	2 - 42	17	18	5	100.0%
pH	pH Units	5.9 - 6.9	6.3	0.55	4	100.0%
TSS	mg/L	6 - 101	50	46	4	100.0%
Turbidity	NTU	24 - 223	107	100	4	100.0%
Nutrients						
Ammonia-N	mg/L	0.01 - 0.47	0.23	0.18	10	100.0%
Nitrate-N	mg/L	<0.1 - 0.27	--	--	5	20.0%
TOC	mg/L	3.5 - 7.3	5.3	2	4	100.0%
DOC	mg/L	2.4 - 4.4	3.4	0.9	4	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.28	0.11	0.14	5	60.0%
Orthophosphate, Total	mg/L	<0.03 - 0.04	--	--	5	40.0%
Metals						
Antimony, Total	ug/L	<0.5 - 2.1	--	--	5	40.0%
Antimony, Dissolved	ug/L	<0.5 - 1.4	--	--	5	20.0%
Arsenic, Total	ug/L	1.4 - 9.7	4.5	3.7	5	100.0%
Arsenic, Dissolved	ug/L	0.7 - 4	2.1	1.3	5	100.0%
Beryllium, Total	ug/L	<1 - <1	--	--	5	0.0%
Beryllium, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Cadmium, Total	ug/L	<0.2 - 0.2	--	--	5	20.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	5	20.0%
Chromium, Total	ug/L	2 - 11	5.1	4.1	5	100.0%
Chromium, Dissolved	ug/L	<1 - 4.6	2	1.9	5	80.0%
Cr (VI)	ug/L	<0.5 - 3.3	--	--	5	40.0%
Copper, Total	ug/L	3.8 - 27	12	11	5	100.0%
Copper, Dissolved	ug/L	2.3 - 11	5.7	4.3	5	100.0%
Lead, Total	ug/L	1.9 - 12	5.3	4.6	5	100.0%
Lead, Dissolved	ug/L	0.5 - 3.4	1.5	1.3	5	100.0%
Mercury, Total	ug/L	0.0023 – 0.0099	0.0057	0.0028	11	100.0%
Mercury, Dissolved	ug/L	<0.2 - <0.2	--	--	5	0.0%
Nickel, Total	ug/L	2 - 13	6.3	4.7	5	100.0%
Nickel, Dissolved	ug/L	<1 - 8.9	3.7	3.7	5	80.0%
Selenium, Total	ug/L	<2 - <2	--	--	5	0.0%
Selenium, Dissolved	ug/L	<2 - <2	--	--	5	0.0%
Silver, Total	ug/L	<0.2 - <0.2	--	--	5	0.0%
Silver, Dissolved	ug/L	<0.2 - <0.2	--	--	5	0.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Thallium, Total	ug/L	<1 - <1	--	--	5	0.0%
Thallium, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Zinc, Total	ug/L	20 - 84	42	29	5	100.0%
Zinc, Dissolved	ug/L	15 - 30	21	6.8	5	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1 - 5	--	--	6	83.3%
Microbiologicals						
Total Coliform	MPN/100 mL	81 - 14000	4320	8491	4	100.0%
Fecal Coliform	MPN/100 mL	14 - 300	111	222	3	100.0%
Enterococus	MPN/100 mL	<200 - 410	181	205	4	75.0%
Polynuclear Aromatic Hydrocarbons						
Acenaphthylene	ug/L	<2 - <2	--	--	4	0.0%
Anthracene	ug/L	<2 - <2	--	--	4	0.0%
Benzo(a)Anthracene	ug/L	<2 - <2	--	--	4	0.0%
Benzo(a)Pyrene	ug/L	<2 - <2	--	--	4	0.0%
Benzo(b)Fluoranthene	ug/L	<2 - <2	--	--	4	0.0%
Benzo(ghi)Perylene	ug/L	<2 - <2	--	--	4	0.0%
Benzo(k)Fluoranthene	ug/L	<2 - <2	--	--	4	0.0%
Chrysene	ug/L	<2 - <2	--	--	4	0.0%
Dibenzo(a,h)Anthracene	ug/L	<2 - <2	--	--	4	0.0%
Fluorene	ug/L	<2 - <2	--	--	4	0.0%
Indeno(1,2,3-c,d)Pyrene	ug/L	<2 - <2	--	--	4	0.0%
Phenanthrene	ug/L	<2 - <2	--	--	4	0.0%
Pyrene	ug/L	<2 - <2	--	--	4	0.0%

Table 2.1. 4 Caltrans Site ID 7-304

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	420 - 570	463	97	4	100.0%
Hardness as CaCO3	mg/L	80 - 100	87	10	4	100.0%
pH	pH Units	7.2 - 8.6	8.1	0.74	4	100.0%
TSS	mg/L	15 - 44	28	13	4	100.0%
TDS	mg/L	280 - 390	315	64	4	100.0%
Turbidity	NTU	40 - 84	63	20	4	100.0%
Nutrients						
Ammonia-N	mg/L	0.15 - 2.7	0.96	1.5	4	100.0%
Nitrate-N	mg/L	0.58 - 1	0.84	0.21	4	100.0%
TOC	mg/L	21 - 34	25	8.3	4	100.0%
DOC	mg/L	21 - 35	--	--	4	100.0%
Phosphorus, Total	mg/L	0.074 - 0.15	0.12	0.041	4	100.0%
Orthophosphate, Dissolved	mg/L	<0.02 - 0.036	--	--	4	50.0%
Metals						
Antimony, Total	ug/L	0.72 - 1.3	1	0.26	4	100.0%
Antimony, Dissolved	ug/L	0.5 - 0.75	0.66	0.13	4	100.0%
Arsenic, Total	ug/L	3.3 - 8.3	6.1	2.5	4	100.0%
Arsenic, Dissolved	ug/L	1.1 - 2.1	1.8	0.62	4	100.0%
Beryllium, Total	ug/L	<0.5 - <0.5	--	--	4	0.0%
Beryllium, Dissolved	ug/L	<0.5 - <0.5	--	--	4	0.0%
Cadmium, Total	ug/L	<0.2 - 0.3	--	--	4	50.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	4	0.0%
Chromium, Total	ug/L	5 - 8.5	6.5	1.6	4	100.0%
Chromium, Dissolved	ug/L	2.2 - 3.1	2.8	0.45	4	100.0%
Cr (VI)	ug/L	1.9 - 2.5	2.3	0.36	4	100.0%
Copper, Total	ug/L	11 - 24	15	8.3	4	100.0%
Copper, Dissolved	ug/L	9.1 - 20	12	6.5	4	100.0%
Lead, Total	ug/L	1.9 - 4.2	2.8	1.1	4	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	4	0.0%
Mercury, Total	ug/L	<0.0048 – <0.2	--	--	9	0.0%
Mercury, Dissolved	ug/L	<0.2 - <0.2	--	--	4	0.0%
Nickel, Total	ug/L	4.7 - 9.9	6.2	3.3	4	100.0%
Nickel, Dissolved	ug/L	2.4 - 4.2	3.1	0.94	4	100.0%
Selenium, Total	ug/L	<0.5 - 1.3	0.7	0.52	4	75.0%
Selenium, Dissolved	ug/L	0.86 - 1.2	0.97	0.19	4	100.0%
Silver, Total	ug/L	<0.5 - <0.5	--	--	4	0.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Silver, Dissolved	ug/L	<0.5 - <0.5	--	--	4	0.0%
Thallium, Total	ug/L	<0.5 - <0.5	--	--	4	0.0%
Thallium, Dissolved	ug/L	<0.5 - <0.5	--	--	4	0.0%
Zinc, Total	ug/L	34 - 130	61	62	4	100.0%
Zinc, Dissolved	ug/L	7 - 46	20	21	4	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<4.5 - 5.2	--	--	4	25.0%
Microbiologicals						
Total Coliform	MPN/100 mL	220 - 3000	938	1896	4	100.0%
Fecal Coliform	MPN/100 mL	140 - 500	293	171	4	100.0%
Enterococcus	MPN/100 mL	80 - 800	335	390	4	100.0%
Polynuclear Aromatic Hydrocarbons						
Acenaphthylene	ug/L	<5 - <5	--	--	4	0.0%
Anthracene	ug/L	<5 - <5	--	--	4	0.0%
Benzo(a)Anthracene	ug/L	<2 - <2	--	--	4	0.0%
Benzo(a)Pyrene	ug/L	<2 - <2	--	--	4	0.0%
Benzo(b)Fluoranthene	ug/L	<5 - <5	--	--	4	0.0%
Benzo(g,h,i)Perylene	ug/L	<10 - <10	--	--	4	0.0%
Benzo(k)Fluoranthene	ug/L	<5 - <5	--	--	4	0.0%
Chrysene	ug/L	<2 - <2	--	--	4	0.0%
Dibenzo(a,h)Anthracene	ug/L	<5 - <5	--	--	4	0.0%
Fluorene	ug/L	<5 - <5	--	--	4	0.0%
Indeno(1,2,3-cd)Pyrene	ug/L	<10 - <10	--	--	4	0.0%
Phenanthrene	ug/L	<5 - <5	--	--	4	0.0%
Pyrene	ug/L	<5 - <5	--	--	4	0.0%

Table 2.1. 5 Caltrans Site ID 12-331 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	290 - 780	412	229	6	100.0%
Hardness as CaCO3	mg/L	48 - 110	65	28	6	100.0%
pH	pH Units	7 - 7.3	7.1	0.12	6	100.0%
TSS	mg/L	30 - 250	106	88	6	100.0%
TDS	mg/L	210 - 550	295	162	6	100.0%
Turbidity	NTU	58 - 220	110	68	6	100.0%
Nutrients						
Ammonia-N	mg/L	0.59 - 3.2	1.9	1.2	4	100.0%
Nitrate-N	mg/L	1.1 - 2.9	1.6	0.8	6	100.0%
TOC	mg/L	23 - 82	36	30	6	100.0%
DOC	mg/L	25 - 83	38	29	6	100.0%
Phosphorus, Total	mg/L	0.23 - 2.9	0.74	1.5	6	100.0%
Orthophosphate, Dissolved	mg/L	0.085 - 0.23	0.15	0.056	6	100.0%
Metals						
Antimony, Total	ug/L	4.5 - 27	13	9.6	6	100.0%
Antimony, Dissolved	ug/L	4.2 - 13	7.8	3.5	6	100.0%
Arsenic, Total	ug/L	4.4 - 7	5.7	1.1	6	100.0%
Arsenic, Dissolved	ug/L	1.2 - 2.1	1.6	0.34	6	100.0%
Beryllium, Total	ug/L	<0.5 - <0.5	--	--	6	0.0%
Beryllium, Dissolved	ug/L	<0.5 - <0.5	--	--	6	0.0%
Cadmium, Total	ug/L	0.58 - 1.8	0.98	0.51	6	100.0%
Cadmium, Dissolved	ug/L	0.3 - 0.79	0.42	0.24	6	100.0%
Chromium, Total	ug/L	7.1 - 33	17	10	6	100.0%
Chromium, Dissolved	ug/L	2.3 - 13	6.5	4.9	6	100.0%
Cr (VI)	ug/L	1.8 - 11	4.9	3.8	6	100.0%
Copper, Total	ug/L	62 - 300	126	107	6	100.0%
Copper, Dissolved	ug/L	52 - 200	92	68	6	100.0%
Lead, Total	ug/L	4 - 21	8.5	7.7	6	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	6	0.0%
Mercury, Total	ug/L	0.0041 - 0.0067	0.0052	0.0011	11	100.0%
Mercury, Dissolved	ug/L	<0.2 - <0.2	--	--	6	0.0%
Nickel, Total	ug/L	16 - 48	24	16	6	100.0%
Nickel, Dissolved	ug/L	12 - 32	17	10	6	100.0%
Selenium, Total	ug/L	0.81 - 2.2	1.2	0.66	6	100.0%
Selenium, Dissolved	ug/L	1.2 - 2.3	1.5	0.48	6	100.0%
Silver, Total	ug/L	<0.5 - <0.5	--	--	6	0.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Silver, Dissolved	ug/L	<0.5 - <0.5	--	--	6	0.0%
Thallium, Total	ug/L	<0.5 - <0.5	--	--	6	0.0%
Thallium, Dissolved	ug/L	<0.5 - <0.5	--	--	6	0.0%
Zinc, Total	ug/L	150 - 720	283	274	6	100.0%
Zinc, Dissolved	ug/L	90 - 400	194	129	6	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<4.3 - 5.7	--	--	4	50.0%
Microbiologicals						
Total Coliform	MPN/100 mL	300 - 30000	10825	15999	4	100.0%
Fecal Coliform	MPN/100 mL	1700 - 30000	9750	17799	4	100.0%
Enterococcus	MPN/100 mL	1300 - 13000	9075	6620	4	100.0%
Polynuclear Aromatic Hydrocarbons						
Acenaphthylene	ug/L	<5 - <5	--	--	6	0.0%
Anthracene	ug/L	<5 - <5	--	--	6	0.0%
Benzo(a)Anthracene	ug/L	<2 - <2	--	--	6	0.0%
Benzo(a)Pyrene	ug/L	<2 - <2	--	--	6	0.0%
Benzo(b)Fluoranthene	ug/L	<5 - <5	--	--	6	0.0%
Benzo(g,h,i)Perylene	ug/L	<10 - <10	--	--	6	0.0%
Benzo(k)Fluoranthene	ug/L	<5 - <5	--	--	6	0.0%
Chrysene	ug/L	<2 - <2	--	--	6	0.0%
Dibenzo(a,h)Anthracene	ug/L	<5 - <5	--	--	6	0.0%
Fluorene	ug/L	<5 - <5	--	--	6	0.0%
Indeno(1,2,3-cd)Pyrene	ug/L	<10 - <10	--	--	6	0.0%
Phenanthrene	ug/L	<5 - <5	--	--	6	0.0%
Pyrene	ug/L	<5 - <5	--	--	6	0.0%

Table 2.1. 6 Caltrans Site ID 1-302 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	25 - 205	58	30	42	100.0%
Hardness as CaCO3	mg/L	4 - 58	22	12	42	100.0%
pH	pH Units	<0.1 - 7	6	0.35	42	97.6%
TSS	mg/L	<1 - 26	2.5	5	42	35.7%
Turbidity	NTU	0.5 - 27	3.8	6.4	42	100.0%
Nutrients						
Ammonia-N	mg/L	<0.01 - 0.4	0.13	0.13	46	73.9%
Nitrate-N	mg/L	<0.1 - 1	0.6	0.18	42	92.9%
TOC	mg/L	<1 - 111	6	23	42	95.2%
DOC	mg/L	<1 - 96	5.1	20	42	81.0%
Phosphorus, Total	mg/L	<0.03 - 0.12	--	--	42	2.4%
Orthophosphate, Total	mg/L	<0.03 - 0.28	--	--	42	9.5%
Metals						
Antimony, Total	ug/L	<0.5 - 3.2	--	--	42	19.0%
Antimony, Dissolved	ug/L	<0.5 - 1.6	--	--	42	9.5%
Arsenic, Total	ug/L	<0.5 - 0.8	--	--	42	2.4%
Arsenic, Dissolved	ug/L	<0.5 - 0.5	--	--	42	2.4%
Beryllium, Total	ug/L	<1 - <1	--	--	42	0.0%
Beryllium, Dissolved	ug/L	<1 - <1	--	--	42	0.0%
Cadmium, Total	ug/L	<0.2 - <0.2	--	--	42	0.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	42	0.0%
Chromium, Total	ug/L	<1 - 2.2	0.88	0.42	42	35.7%
Chromium, Dissolved	ug/L	<1 - 1.3	--	--	42	9.5%
Cr (VI)	ug/L	<0.5 - <0.5	--	--	42	0.0%
Copper, Total	ug/L	<1 - 2.6	--	--	42	16.7%
Copper, Dissolved	ug/L	<1 - 2.6	--	--	42	7.1%
Lead, Total	ug/L	<0.5 - 1	--	--	42	2.4%
Lead, Dissolved	ug/L	<0.5 - <0.5	--	--	42	0.0%
Mercury, Total	ug/L	0.0006 - 0.03	0.0016	0.0041	90	100.0%
Mercury, Dissolved	ug/L	<0.2 - <0.2	--	--	42	0.0%
Nickel, Total	ug/L	<1 - 10	1.7	1.9	42	59.5%
Nickel, Dissolved	ug/L	<1 - 4.4	0.89	0.93	42	21.4%
Selenium, Total	ug/L	<2 - <2	--	--	42	0.0%
Selenium, Dissolved	ug/L	<2 - <2	--	--	42	0.0%
Silver, Total	ug/L	<0.2 - 0.2	--	--	42	2.4%
Silver, Dissolved	ug/L	<0.2 - <0.2	--	--	42	0.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Thallium, Total	ug/L	<1 - <1	--	--	42	0.0%
Thallium, Dissolved	ug/L	<1 - <1	--	--	42	0.0%
Zinc, Total	ug/L	<5 - 26	3.5	5.1	42	21.4%
Zinc, Dissolved	ug/L	<5 - 14	--	--	42	7.1%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1 - 2	--	--	4	25.0%
Microbiologicals						
Total Coliform	MPN/100 mL	17 - 240	96	165	3	100.0%
Fecal Coliform	MPN/100 mL	4 - 8	6.3	2.5	3	100.0%
Polynuclear Aromatic Hydrocarbons						
Acenaphthylene	ug/L	<2 - <2	--	--	42	0.0%
Anthracene	ug/L	<2 - <2	--	--	42	0.0%
Benzo(a)Anthracene	ug/L	<2 - <2	--	--	42	0.0%
Benzo(a)Pyrene	ug/L	<2 - <2	--	--	42	0.0%
Benzo(b)Fluoranthene	ug/L	<2 - <2	--	--	42	0.0%
Benzo(ghi)Perylene	ug/L	<2 - <2	--	--	42	0.0%
Benzo(k)Fluoranthene	ug/L	<2 - <2	--	--	42	0.0%
Chrysene	ug/L	<2 - <2	--	--	42	0.0%
Dibenzo(a,h)Anthracene	ug/L	<2 - <2	--	--	42	0.0%
Fluorene	ug/L	<2 - <2	--	--	42	0.0%
Indeno(1,2,3-c,d)Pyrene	ug/L	<2 - <2	--	--	42	0.0%
Phenanthrene	ug/L	<2 - <2	--	--	42	0.0%
Pyrene	ug/L	<2 - <2	--	--	42	0.0%

Table 2.1. 7 Caltrans Site ID 4-303 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	57 - 694	259	184	16	100.0%
Hardness as CaCO3	mg/L	14 - 148	66	32	15	100.0%
pH	pH Units	5.5 - 7.4	6.4	0.57	16	100.0%
TSS	mg/L	<1 - 111	20	34	15	86.7%
Turbidity	NTU	1 - 74	19	20	16	100.0%
Nutrients						
Ammonia-N	mg/L	<0.01 - 0.11	0.014	0.035	16	25.0%
Nitrate-N	mg/L	<0.1 - 0.73	0.15	0.23	16	56.3%
TOC	mg/L	4.5 - 27	17	5	15	100.0%
DOC	mg/L	3.8 - 27	16	5.2	15	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.13	0.037	0.04	15	53.3%
Orthophosphate, Total	mg/L	<0.03 - 0.09	0.052	0.024	16	37.5%
Metals						
Antimony, Total	ug/L	<0.5 - 2.4	--	--	16	12.5%
Antimony, Dissolved	ug/L	<0.5 - 2.2	--	--	16	12.5%
Arsenic, Total	ug/L	<0.5 - 1.4	0.78	0.34	16	81.3%
Arsenic, Dissolved	ug/L	<0.5 - 1	0.47	0.21	16	56.3%
Beryllium, Total	ug/L	<1 - <1	--	--	16	0.0%
Beryllium, Dissolved	ug/L	<1 - <1	--	--	16	0.0%
Cadmium, Total	ug/L	<0.2 - 0.3	--	--	16	18.8%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	16	0.0%
Chromium, Total	ug/L	<1 - 47	4.5	16	16	75.0%
Chromium, Dissolved	ug/L	<1 - 1.7	0.84	0.43	16	37.5%
Cr (VI)	ug/L	<0.5 - <0.5	--	--	16	0.0%
Copper, Total	ug/L	<1 - 5	1.9	1.5	16	81.3%
Copper, Dissolved	ug/L	<1 - 1.8	1.1	0.34	16	75.0%
Lead, Total	ug/L	<0.5 - 1.6	0.54	0.54	16	25.0%
Lead, Dissolved	ug/L	<0.5 - <0.5	--	--	16	0.0%
Mercury, Total	ug/L	0.0007 - 0.2	0.0078	0.045	40	100.0%
Mercury, Dissolved	ug/L	<0.2 - <0.2	--	--	16	6.3%
Nickel, Total	ug/L	2.6 - 24	6.1	6.1	16	100.0%
Nickel, Dissolved	ug/L	<1 - 4.4	3.5	0.63	16	93.8%
Selenium, Total	ug/L	<2 - <2	--	--	16	0.0%
Selenium, Dissolved	ug/L	<2 - <2	--	--	16	0.0%
Silver, Total	ug/L	<0.2 - <0.2	--	--	16	0.0%
Silver, Dissolved	ug/L	<0.2 - <0.2	--	--	16	0.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Thallium, Total	ug/L	<1 - <1	--	--	16	0.0%
Thallium, Dissolved	ug/L	<1 - <1	--	--	16	0.0%
Zinc, Total	ug/L	<5 - 26	9.3	8.6	16	75.0%
Zinc, Dissolved	ug/L	<5 - 9.3	--	--	16	18.8%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1 - <1	--	--	1	0.0%
Microbiologicals						
Total Coliform	MPN/100 mL	1600 - 1600	--	--	1	100.0%
Fecal Coliform	MPN/100 mL	500 - 500	--	--	1	100.0%
Enterococus	MPN/100 mL	27 - 27	--	--	1	100.0%
Polynuclear Aromatic Hydrocarbons						
Acenaphthylene	ug/L	<2 - <2	--	--	14	0.0%
Anthracene	ug/L	<2 - <2	--	--	14	0.0%
Benzo(a)Anthracene	ug/L	<2 - <2	--	--	14	0.0%
Benzo(a)Pyrene	ug/L	<2 - <2	--	--	14	0.0%
Benzo(b)Fluoranthene	ug/L	<2 - <2	--	--	14	0.0%
Benzo(ghi)Perylene	ug/L	<2 - <2	--	--	14	0.0%
Benzo(k)Fluoranthene	ug/L	<2 - <2	--	--	14	0.0%
Chrysene	ug/L	<2 - <2	--	--	14	0.0%
Dibenzo(a,h)Anthracene	ug/L	<2 - <2	--	--	14	0.0%
Fluorene	ug/L	<2 - <2	--	--	14	0.0%
Indeno(1,2,3-c,d)Pyrene	ug/L	<2 - <2	--	--	14	0.0%
Phenanthrene	ug/L	<2 - <2	--	--	14	0.0%
Pyrene	ug/L	<2 - <2	--	--	14	0.0%

2.2 Tahoe Basin Full-Scale Media Filter Pilot Study

The Tahoe Basin Full-Scale Media Filter Study is a series of pilot stormwater treatment BMPs located along Highway 50 and State Route 267 in the Lake Tahoe Basin. These BMPs were designed and constructed to test the effectiveness of an enhanced treatment strategy involving settling and filtration through several types of alternative filter media. The goal of this study is to evaluate the treatment effectiveness and potential water quality impacts of three types of alternative media filters in the Tahoe Basin and to document operations and maintenance requirements for these alternative media filters under various environmental conditions that occur in the Tahoe Basin.

Table 2.2. 0 Tahoe Basin Full-Scale Media Filer Pilot Study Monitoring Sites

Site ID	Site Name	Caltrans District	Regional Board	County	Catchment Area (he)
3-234	Basin B103 Influent	3	Lahontan	El Dorado	0.23
3-235	Basin B103 Effluent	3	Lahontan	El Dorado	0.28
3-237	Basin B111 Influent	3	Lahontan	El Dorado	0.35
3-238	Basin B111 Effluent	3	Lahontan	El Dorado	0.4
3-309	Site 1 Influent	3	Lahontan	Placer	0.29
3-310	Site 1 Effluent	3	Lahontan	Placer	0.34
3-312	Site 2 Influent	3	Lahontan	Placer	0.2
3-313	Site 2 Effluent	3	Lahontan	Placer	0.25
3-315	Site 3 Influent	3	Lahontan	Placer	0.25
3-316	Site 3 Effluent	3	Lahontan	Placer	0.3
3-318	Site 4 Influent	3	Lahontan	Placer	0.36
3-319	Site 4 Effluent	3	Lahontan	Placer	0.41

Table 2.2. 1 Caltrans Site ID 3-234 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	4 - 22	14	7.1	6	100.0%
Conductivity	umhos/cm	5.5 - 13400	4248	5672	6	100.0%
Hardness as CaCO3	mg/L	8 - 260	81	110	6	100.0%
pH	pH Units	6.3 - 6.8	6.6	0.24	6	100.0%
TSS	mg/L	91 - 592	233	220	6	100.0%
TDS	mg/L	444 - 6764	2731	2605	6	100.0%
Turbidity	NTU	68 - 704	344	268	6	100.0%
Temperature	Degrees F	51 - 51	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	0.34 - 1.4	0.65	0.45	6	100.0%
Nitrate-N	mg/L	<0.1 - 0.34	0.21	0.11	6	83.3%
Nitrite-N	mg/L	<0.1 - 0.19	--	--	6	16.7%
TKN	mg/L	0.45 - 2.8	1.6	0.86	6	100.0%
TOC	mg/L	6.8 - 41	27	13	6	100.0%
DOC	mg/L	2.5 - 26	15	9.3	6	100.0%
Phosphorus, Total	mg/L	0.04 - 0.6	0.23	0.23	6	100.0%
Phosphorus, Dissolved	mg/L	<0.03 - 0.14	0.054	0.076	6	50.0%
Orthophosphate, Total	mg/L	<0.03 - 0.03	--	--	6	16.7%
Metals						
Aluminum, Total	ug/L	479 - 16200	5775	5698	12	100.0%
Aluminum, Dissolved	ug/L	397 - 4600	2325	1903	6	100.0%
Arsenic, Total	ug/L	<0.5 - 7.3	3.3	2.5	6	66.7%
Arsenic, Dissolved	ug/L	<0.5 - 4.4	1.8	1.9	6	50.0%
Cadmium, Total	ug/L	<0.2 - 4.1	0.86	2.2	6	66.7%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	6	33.3%
Chromium, Total	ug/L	3.9 - 31	18	9.5	6	100.0%
Chromium, Dissolved	ug/L	7.6 - 17	13	4.4	6	100.0%
Copper, Total	ug/L	9.9 - 8200	1392	4776	6	100.0%
Copper, Dissolved	ug/L	6.1 - 23	16	7.6	6	100.0%
Iron, Total	ug/L	2590 - 19800	10962	6754	6	100.0%
Iron, Dissolved	ug/L	415 - 3980	2055	1667	6	100.0%
Lead, Total	ug/L	3.2 - 690	125	391	6	100.0%
Lead, Dissolved	ug/L	<1 - 11	4.7	4.4	6	83.3%
Nickel, Total	ug/L	5.5 - 140	35	69	6	100.0%
Nickel, Dissolved	ug/L	4 - 9.7	6.9	2.4	6	100.0%
Zinc, Total	ug/L	55 - 22000	3771	12775	6	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Zinc, Dissolved	ug/L	44 - 100	68	27	6	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	7 - 7	--	--	1	100.0%

Table 2.2. 2 Caltrans Site ID 3-235 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	22 - 50	39	11	6	100.0%
Conductivity	umhos/cm	5.9 - 5600	2748	2439	6	100.0%
Hardness as CaCO3	mg/L	6 - 232	114	88	6	100.0%
pH	pH Units	6.4 - 7.4	6.9	0.36	6	100.0%
TSS	mg/L	5 - 18	12	5.6	6	100.0%
TDS	mg/L	248 - 3348	1791	1363	6	100.0%
Turbidity	NTU	6.7 - 93	29	39	6	100.0%
Temperature	Degrees F	52 - 52	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.61	0.29	0.2	6	83.3%
Nitrate-N	mg/L	0.13 - 0.98	0.51	0.3	6	100.0%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	6	0.0%
TKN	mg/L	<0.1 - 0.72	0.46	0.2	6	83.3%
TOC	mg/L	3.1 - 25	13	9.6	6	100.0%
DOC	mg/L	2.4 - 23	11	9	6	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.03	--	--	6	16.7%
Phosphorus, Dissolved	mg/L	<0.03 - 0.03	--	--	6	16.7%
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	6	0.0%
Metals						
Aluminum, Total	ug/L	40 - 3540	784	1160	12	100.0%
Aluminum, Dissolved	ug/L	<25 - 1350	613	634	6	83.3%
Arsenic, Total	ug/L	<0.5 - 1.5	--	--	6	33.3%
Arsenic, Dissolved	ug/L	<0.5 - 1	--	--	6	33.3%
Cadmium, Total	ug/L	<0.2 - <0.2	--	--	6	0.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	6	0.0%
Chromium, Total	ug/L	1.4 - 7	5.2	2.3	6	100.0%
Chromium, Dissolved	ug/L	2.4 - 7	5	1.7	6	100.0%
Copper, Total	ug/L	1.5 - 51	11	26	6	100.0%
Copper, Dissolved	ug/L	1 - 6.4	2.9	2.2	6	100.0%
Iron, Total	ug/L	104 - 3160	1076	1314	6	100.0%
Iron, Dissolved	ug/L	<25 - 1270	502	566	6	83.3%
Lead, Total	ug/L	<1 - 5	--	--	6	33.3%
Lead, Dissolved	ug/L	<1 - 2.1	--	--	6	33.3%
Nickel, Total	ug/L	<2 - 5.7	2.1	2.3	6	50.0%
Nickel, Dissolved	ug/L	<2 - 2.5	--	--	6	33.3%
Zinc, Total	ug/L	<5 - 130	29	66	6	83.3%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Zinc, Dissolved	ug/L	<5 - 14	8.3	4.4	6	83.3%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<2 - <2	--	--	1	0.0%

Table 2.2. 3 Caltrans Site ID 3-237 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	6 - 34	22	11	5	100.0%
Conductivity	umhos/cm	4.1 - 4400	1534	1986	5	100.0%
Hardness as CaCO3	mg/L	14 - 152	62	63	5	100.0%
pH	pH Units	6.4 - 6.8	6.7	0.18	5	100.0%
TSS	mg/L	66 - 252	167	74	5	100.0%
TDS	mg/L	160 - 2356	1111	1090	5	100.0%
Nutrients						
Turbidity	NTU	115 - 283	204	71	5	100.0%
Ammonia-N	mg/L	0.15 - 0.45	0.33	0.13	5	100.0%
Nitrate-N	mg/L	<0.1 - 0.29	0.26	0.026	5	60.0%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	5	0.0%
TKN	mg/L	0.23 - 1.7	0.88	0.57	5	100.0%
TOC	mg/L	4.9 - 36	20	12	5	100.0%
DOC	mg/L	3.3 - 18	12	6.8	5	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.38	0.17	0.15	5	80.0%
Phosphorus, Dissolved	mg/L	<0.03 - 0.11	0.039	0.052	5	60.0%
Orthophosphate, Total	mg/L	<0.03 - 0.03	--	--	5	20.0%
Metals						
Aluminum, Total	ug/L	352 - 9120	3707	3472	10	100.0%
Aluminum, Dissolved	ug/L	517 - 1500	953	417	5	100.0%
Arsenic, Total	ug/L	1.8 - 4.5	3	1.2	5	100.0%
Arsenic, Dissolved	ug/L	<0.5 - 2.5	--	--	5	60.0%
Cadmium, Total	ug/L	<0.2 - 0.4	--	--	5	40.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	5	40.0%
Chromium, Total	ug/L	4.3 - 23	13	7.4	5	100.0%
Chromium, Dissolved	ug/L	2.2 - 15	8.2	5.1	5	100.0%
Copper, Total	ug/L	11 - 50	25	18	5	100.0%
Copper, Dissolved	ug/L	6.1 - 26	12	9.9	5	100.0%
Iron, Total	ug/L	4470 - 8930	7078	2157	5	100.0%
Iron, Dissolved	ug/L	539 - 1290	928	298	5	100.0%
Lead, Total	ug/L	4.4 - 9.3	6.5	2	5	100.0%
Lead, Dissolved	ug/L	<1 - 2.3	--	--	5	40.0%
Nickel, Total	ug/L	4 - 13	8.5	3.8	5	100.0%
Nickel, Dissolved	ug/L	2.2 - 6.6	4.4	2	5	100.0%
Zinc, Total	ug/L	64 - 160	99	43	5	100.0%
Zinc, Dissolved	ug/L	27 - 67	41	18	5	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Petroleum Hydrocarbons						
Oil & Grease	mg/L	7 - 7	--	--	1	100.0%

Table 2.2. 4 Caltrans Site ID 3-238 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	26 - 62	48	16	5	100.0%
Conductivity	umhos/cm	3.2 - 6230	1854	3125	5	100.0%
Hardness as CaCO3	mg/L	22 - 150	85	58	5	100.0%
pH	pH Units	6.4 - 7.1	6.9	0.32	5	100.0%
TSS	mg/L	6 - 22	11	8	5	100.0%
TDS	mg/L	264 - 2856	1187	1181	5	100.0%
Turbidity	NTU	5.8 - 58	23	24	5	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.49	--	--	5	40.0%
Nitrate-N	mg/L	<0.1 - 0.12	0.099	0.016	5	60.0%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	5	0.0%
TKN	mg/L	<0.1 - 0.6	0.28	0.26	5	80.0%
TOC	mg/L	3.7 - 23	9.3	9.5	5	100.0%
DOC	mg/L	3.7 - 21	8.3	8.9	5	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.05	--	--	5	20.0%
Phosphorus, Dissolved	mg/L	<0.03 - 0.03	--	--	5	20.0%
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	5	0.0%
Metals						
Aluminum, Total	ug/L	37 - 1940	511	691	10	100.0%
Aluminum, Dissolved	ug/L	52 - 1050	505	484	5	100.0%
Arsenic, Total	ug/L	<0.5 - 0.8	--	--	5	40.0%
Arsenic, Dissolved	ug/L	<0.5 - 0.7	--	--	5	40.0%
Cadmium, Total	ug/L	<0.2 - 0.2	--	--	5	20.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	5	0.0%
Chromium, Total	ug/L	1.9 - 6.3	3.7	1.8	5	100.0%
Chromium, Dissolved	ug/L	1.9 - 6.1	3.4	1.8	5	100.0%
Copper, Total	ug/L	1.5 - 5.1	2.6	1.7	5	100.0%
Copper, Dissolved	ug/L	<1 - 7.4	2.7	3.3	5	80.0%
Iron, Total	ug/L	91 - 1870	794	816	5	100.0%
Iron, Dissolved	ug/L	54 - 985	427	442	5	100.0%
Lead, Total	ug/L	<1 - 1.5	--	--	5	40.0%
Lead, Dissolved	ug/L	<1 - 1.5	--	--	5	40.0%
Nickel, Total	ug/L	<2 - 3.5	2.4	0.95	5	60.0%
Nickel, Dissolved	ug/L	<2 - 2.8	--	--	5	40.0%
Zinc, Total	ug/L	6.2 - 17	11	5.3	5	100.0%
Zinc, Dissolved	ug/L	5.7 - 26	11	10	5	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<2 - <2	--	--	1	0.0%

Table 2.2. 5 Caltrans Site ID 3-309 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	10 - 24	16	5.9	7	100.0%
Conductivity	umhos/cm	4.5 - 1330	751	466	7	100.0%
Hardness as CaCO3	mg/L	14 - 64	40	19	7	100.0%
pH	pH Units	6 - 6.9	6.4	0.34	7	100.0%
TSS	mg/L	27 - 734	191	300	7	100.0%
TDS	mg/L	240 - 1452	587	479	7	100.0%
Turbidity	NTU	36 - 1050	256	442	7	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.82	0.31	0.29	7	85.7%
Nitrate-N	mg/L	<0.1 - 0.59	0.26	0.2	7	71.4%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	7	0.0%
TKN	mg/L	0.25 - 1.6	0.78	0.51	7	100.0%
TOC	mg/L	8 - 19	13	4.5	7	100.0%
DOC	mg/L	6.7 - 15	9.9	3.3	7	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.57	0.18	0.22	7	71.4%
Phosphorus, Dissolved	mg/L	<0.03 - 0.18	0.085	0.055	7	71.4%
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	7	0.0%
Metals						
Aluminum, Total	ug/L	291 - 30800	5176	9370	14	100.0%
Aluminum, Dissolved	ug/L	742 - 5200	2037	1770	7	100.0%
Arsenic, Total	ug/L	1 - 6	2.1	2.2	7	100.0%
Arsenic, Dissolved	ug/L	0.8 - 1.4	1	0.24	7	100.0%
Cadmium, Total	ug/L	<0.2 - 0.4	--	--	7	28.6%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	7	14.3%
Chromium, Total	ug/L	3.2 - 15	6.8	4.7	7	100.0%
Chromium, Dissolved	ug/L	1.7 - 6	3.6	1.8	7	100.0%
Copper, Total	ug/L	4.4 - 53	18	19	7	100.0%
Copper, Dissolved	ug/L	3.4 - 15	7.4	4.4	7	100.0%
Iron, Total	ug/L	1130 - 21500	6317	8425	7	100.0%
Iron, Dissolved	ug/L	462 - 2990	1152	1016	7	100.0%
Lead, Total	ug/L	<1 - 10	3.2	3.8	7	85.7%
Lead, Dissolved	ug/L	<1 - 1.8	--	--	7	28.6%
Nickel, Total	ug/L	<2 - 23	7.3	8.7	7	85.7%
Nickel, Dissolved	ug/L	<2 - 8.9	2.3	3.7	7	42.9%
Zinc, Total	ug/L	16 - 170	60	61	7	100.0%
Zinc, Dissolved	ug/L	13 - 46	25	12	7	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

Table 2.2. 6 Caltrans Site ID 3-310 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	20 - 42	31	8.7	7	100.0%
Conductivity	umhos/cm	2.8 - 1300	638	430	7	100.0%
Hardness as CaCO3	mg/L	28 - 258	75	104	7	100.0%
pH	pH Units	6.4 - 7.2	6.7	0.3	7	100.0%
TSS	mg/L	6 - 100	56	37	7	100.0%
TDS	mg/L	124 - 2364	648	974	7	100.0%
Turbidity	NTU	35 - 251	108	80	7	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.51	0.22	0.17	7	85.7%
Nitrate-N	mg/L	0.2 - 0.47	0.34	0.12	7	100.0%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	7	0.0%
TKN	mg/L	0.19 - 0.57	0.38	0.17	7	100.0%
TOC	mg/L	6.6 - 19	12	4.3	7	100.0%
DOC	mg/L	4.3 - 16	9.4	4.3	7	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.21	0.11	0.065	7	71.4%
Phosphorus, Dissolved	mg/L	<0.03 - 0.13	0.062	0.045	7	42.9%
Orthophosphate, Total	mg/L	<0.03 - 0.03	--	--	7	14.3%
Metals						
Aluminum, Total	ug/L	139 - 11300	2879	3418	14	100.0%
Aluminum, Dissolved	ug/L	310 - 6000	3213	2035	7	100.0%
Arsenic, Total	ug/L	<0.5 - 2.8	1.3	0.89	7	85.7%
Arsenic, Dissolved	ug/L	<0.5 - 1.8	1	0.51	7	85.7%
Cadmium, Total	ug/L	<0.2 - <0.2	--	--	7	0.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	7	0.0%
Chromium, Total	ug/L	3.2 - 8.5	5.5	2.5	7	100.0%
Chromium, Dissolved	ug/L	1.8 - 6.6	4.1	2	7	100.0%
Copper, Total	ug/L	4 - 21	9.1	6.6	7	100.0%
Copper, Dissolved	ug/L	2.7 - 9.1	5.2	2.3	7	100.0%
Iron, Total	ug/L	1180 - 6610	2691	2165	7	100.0%
Iron, Dissolved	ug/L	251 - 3050	1345	972	7	100.0%
Lead, Total	ug/L	<1 - 3.6	1.7	1.1	7	85.7%
Lead, Dissolved	ug/L	<1 - 1.5	0.95	0.37	7	42.9%
Nickel, Total	ug/L	<2 - 8.7	3.9	2.8	7	85.7%
Nickel, Dissolved	ug/L	<2 - 5.8	2.3	2	7	57.1%
Zinc, Total	ug/L	12 - 53	25	16	7	100.0%
Zinc, Dissolved	ug/L	9 - 21	15	4.5	7	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

Table 2.2. 7 Caltrans Site ID 3-312 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	4 - 22	12	5.4	9	100.0%
Conductivity	umhos/cm	353 - 6160	1565	2199	9	100.0%
Hardness as CaCO3	mg/L	10 - 64	30	19	9	100.0%
pH	pH Units	6.2 - 6.9	6.5	0.26	9	100.0%
TSS	mg/L	25 - 332	125	99	9	100.0%
TDS	mg/L	112 - 3040	747	1090	9	100.0%
Turbidity	NTU	35 - 460	186	134	9	100.0%
Temperature	Degrees F	50 - 50	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	0.19 - 1.6	0.65	0.47	9	100.0%
Nitrate-N	mg/L	<0.1 - 0.45	0.21	0.17	9	66.7%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	9	0.0%
TKN	mg/L	0.39 - 2.2	1.3	0.74	9	100.0%
TOC	mg/L	2 - 34	17	12	9	100.0%
DOC	mg/L	1.5 - 29	12	9.3	9	100.0%
Phosphorus, Total	mg/L	0.06 - 0.65	0.22	0.2	9	100.0%
Phosphorus, Dissolved	mg/L	<0.03 - 0.24	0.096	0.081	9	77.8%
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	9	0.0%
Metals						
Aluminum, Total	ug/L	329 - 36900	6504	9900	18	100.0%
Aluminum, Dissolved	ug/L	39 - 9970	2422	3593	9	100.0%
Arsenic, Total	ug/L	<0.5 - 4.2	2	1.4	9	88.9%
Arsenic, Dissolved	ug/L	<0.5 - 1.7	1.1	0.4	9	88.9%
Cadmium, Total	ug/L	<0.2 - 0.4	0.21	0.1	9	66.7%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	9	11.1%
Chromium, Total	ug/L	3.5 - 13	8	3.8	9	100.0%
Chromium, Dissolved	ug/L	1.3 - 8.2	4.5	2.7	9	100.0%
Copper, Total	ug/L	5.2 - 35	19	11	9	100.0%
Copper, Dissolved	ug/L	2.1 - 36	11	12	9	100.0%
Iron, Total	ug/L	1120 - 19700	6633	6400	9	100.0%
Iron, Dissolved	ug/L	46 - 3610	1220	1317	9	100.0%
Lead, Total	ug/L	<1 - 14	4.1	4.7	9	88.9%
Lead, Dissolved	ug/L	<1 - 3.1	1.1	1.1	9	44.4%
Nickel, Total	ug/L	<2 - 14	6.8	3.9	9	77.8%
Nickel, Dissolved	ug/L	<2 - 7.1	3.1	2.1	9	55.6%
Zinc, Total	ug/L	16 - 140	75	46	9	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Zinc, Dissolved	ug/L	14 - 71	39	23	9	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

Table 2.2. 8 Caltrans Site ID 3-313 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	20 - 38	25	6.8	9	100.0%
Conductivity	umhos/cm	573 - 1830	1173	478	9	100.0%
Hardness as CaCO3	mg/L	20 - 130	50	38	9	100.0%
pH	pH Units	6.3 - 7.2	6.7	0.3	9	100.0%
TSS	mg/L	6 - 259	49	104	9	100.0%
TDS	mg/L	186 - 824	508	207	9	100.0%
Turbidity	NTU	19 - 380	89	141	9	100.0%
Temperature	Degrees F	51 - 51	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.41	0.24	0.087	9	77.8%
Nitrate-N	mg/L	0.16 - 0.92	0.54	0.26	9	100.0%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	9	0.0%
TKN	mg/L	0.27 - 0.92	0.47	0.22	9	100.0%
TOC	mg/L	3.6 - 25	14	6.3	9	100.0%
DOC	mg/L	2.4 - 16	10	5.2	9	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.08	0.049	0.024	9	77.8%
Phosphorus, Dissolved	mg/L	<0.03 - 0.07	0.038	0.022	9	55.6%
Metals						
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	9	0.0%
Aluminum, Total	ug/L	180 - 11300	3481	3636	18	100.0%
Aluminum, Dissolved	ug/L	284 - 6700	3120	2061	9	100.0%
Arsenic, Total	ug/L	<0.5 - 1.8	0.88	0.49	9	77.8%
Arsenic, Dissolved	ug/L	<0.5 - 1.7	0.73	0.47	9	77.8%
Cadmium, Total	ug/L	<0.2 - 0.2	--	--	9	11.1%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	9	0.0%
Chromium, Total	ug/L	2.9 - 12	4.8	3.5	9	100.0%
Chromium, Dissolved	ug/L	1.8 - 9.9	3.8	2.9	9	100.0%
Copper, Total	ug/L	4.3 - 15	8.6	3.8	9	100.0%
Copper, Dissolved	ug/L	3.3 - 12	6.3	3.4	9	100.0%
Iron, Total	ug/L	790 - 10600	2857	3737	9	100.0%
Iron, Dissolved	ug/L	87 - 2510	1225	784	9	100.0%
Lead, Total	ug/L	<1 - 6.1	1.8	2.1	9	66.7%
Lead, Dissolved	ug/L	<1 - 2.3	0.92	0.73	9	44.4%
Nickel, Total	ug/L	<2 - 6.6	2.6	2.3	9	44.4%
Nickel, Dissolved	ug/L	<2 - 4.4	2.1	1.4	9	33.3%
Zinc, Total	ug/L	7.4 - 63	21	20	9	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Zinc, Dissolved	ug/L	5.6 - 33	13	9.5	9	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

Table 2.2. 9 Caltrans Site ID 3-315 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	6 - 28	13	8.2	7	100.0%
Conductivity	umhos/cm	380 - 2110	1308	741	7	100.0%
Hardness as CaCO3	mg/L	10 - 62	26	21	7	100.0%
pH	pH Units	6.3 - 6.8	6.5	0.17	7	100.0%
TSS	mg/L	50 - 444	182	160	7	100.0%
TDS	mg/L	158 - 1216	706	395	7	100.0%
Turbidity	NTU	71 - 685	280	225	7	100.0%
Nutrients						
Ammonia-N	mg/L	0.26 - 0.75	0.45	0.2	7	100.0%
Nitrate-N	mg/L	0.12 - 2.5	0.67	0.99	7	100.0%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	7	0.0%
TKN	mg/L	0.54 - 2.4	1.2	0.69	7	100.0%
TOC	mg/L	5.4 - 33	15	10	7	100.0%
DOC	mg/L	3.6 - 25	11	8.2	7	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.31	0.18	0.1	7	85.7%
Phosphorus, Dissolved	mg/L	<0.03 - 0.22	0.1	0.072	7	71.4%
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	7	0.0%
Metals						
Aluminum, Total	ug/L	171 - 26200	8016	9777	14	100.0%
Aluminum, Dissolved	ug/L	28 - 19300	5831	7601	7	100.0%
Arsenic, Total	ug/L	<1 - 4.3	2.2	1.5	7	85.7%
Arsenic, Dissolved	ug/L	<1 - 2.4	1.2	0.67	7	85.7%
Cadmium, Total	ug/L	<0.2 - 0.4	0.27	0.11	7	71.4%
Cadmium, Dissolved	ug/L	<0.2 - 0.4	--	--	7	28.6%
Chromium, Total	ug/L	2.4 - 17	8	5.8	7	100.0%
Chromium, Dissolved	ug/L	2.4 - 8.9	4.9	2.5	7	100.0%
Copper, Total	ug/L	10 - 43	23	14	7	100.0%
Copper, Dissolved	ug/L	5.6 - 15	9	3.7	7	100.0%
Iron, Total	ug/L	547 - 16400	8125	6127	7	100.0%
Iron, Dissolved	ug/L	<20 - 6150	2381	2262	7	85.7%
Lead, Total	ug/L	1.2 - 8.7	4.6	2.8	7	100.0%
Lead, Dissolved	ug/L	<1 - 4.5	1.7	1.7	7	71.4%
Nickel, Total	ug/L	<8 - 17	7.9	6.3	7	85.7%
Nickel, Dissolved	ug/L	<2 - 4	2.5	1.1	7	71.4%
Zinc, Total	ug/L	34 - 200	92	67	7	100.0%
Zinc, Dissolved	ug/L	23 - 54	40	11	7	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

Table 2.2. 10 Caltrans Site ID 3-316 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	6 - 24	13	7.4	7	100.0%
Conductivity	umhos/cm	453 - 3810	1636	1219	7	100.0%
Hardness as CaCO3	mg/L	20 - 106	62	37	7	100.0%
pH	pH Units	6.2 - 6.8	6.4	0.23	7	100.0%
TSS	mg/L	4 - 54	25	21	7	100.0%
TDS	mg/L	156 - 1596	791	560	7	100.0%
Turbidity	NTU	19 - 135	60	42	7	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.42	0.19	0.14	7	85.7%
Nitrate-N	mg/L	0.43 - 1.6	0.71	0.5	7	100.0%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	7	0.0%
TKN	mg/L	0.2 - 0.44	0.33	0.091	7	100.0%
TOC	mg/L	3.5 - 16	7	5	7	100.0%
DOC	mg/L	3.2 - 11	5.6	2.9	7	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.14	0.067	0.046	7	71.4%
Phosphorus, Dissolved	mg/L	<0.03 - 0.11	0.048	0.036	7	71.4%
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	7	0.0%
Metals						
Aluminum, Total	ug/L	74 - 7310	2400	2955	14	100.0%
Aluminum, Dissolved	ug/L	<25 - 7260	2711	2916	7	85.7%
Arsenic, Total	ug/L	<0.5 - 1.8	0.71	0.61	7	57.1%
Arsenic, Dissolved	ug/L	<0.5 - 1	0.54	0.25	7	57.1%
Cadmium, Total	ug/L	<0.2 - <0.2	--	--	7	0.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	7	0.0%
Chromium, Total	ug/L	2.3 - 4.7	3.7	0.91	7	100.0%
Chromium, Dissolved	ug/L	2.3 - 4.2	2.8	0.77	7	100.0%
Copper, Total	ug/L	2.8 - 30	9.4	12	7	100.0%
Copper, Dissolved	ug/L	2.6 - 7.9	4.1	2.1	7	100.0%
Iron, Total	ug/L	294 - 4120	1794	1362	7	100.0%
Iron, Dissolved	ug/L	<20 - 2080	827	776	7	85.7%
Lead, Total	ug/L	<1 - 2.5	1.3	0.75	7	71.4%
Lead, Dissolved	ug/L	<1 - 1.4	0.89	0.34	7	42.9%
Nickel, Total	ug/L	<2 - 5.2	2.7	1.7	7	57.1%
Nickel, Dissolved	ug/L	<2 - 5	--	--	7	14.3%
Zinc, Total	ug/L	11 - 38	17	12	7	100.0%
Zinc, Dissolved	ug/L	7.6 - 18	11	3.9	7	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

Table 2.2. 11 Caltrans Site ID 3-318 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	10 - 24	15	5.1	9	100.0%
Conductivity	umhos/cm	196 - 18800	3641	7525	9	100.0%
Hardness as CaCO3	mg/L	10 - 110	57	36	9	100.0%
pH	pH Units	6 - 7.4	6.4	0.49	9	100.0%
TSS	mg/L	11 - 249	143	72	9	100.0%
TDS	mg/L	120 - 10800	1996	4428	9	100.0%
Turbidity	NTU	131 - 1600	388	607	9	100.0%
Temperature	Degrees F	51 - 51	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 1.6	0.37	0.61	9	88.9%
Nitrate-N	mg/L	<0.1 - 0.56	0.33	0.14	9	77.8%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	9	0.0%
TKN	mg/L	0.36 - 2.4	1.3	0.74	9	100.0%
TOC	mg/L	7.5 - 34	17	9.2	9	100.0%
DOC	mg/L	6 - 24	13	6.2	9	100.0%
Phosphorus, Total	mg/L	0.13 - 0.58	0.31	0.19	9	100.0%
Phosphorus, Dissolved	mg/L	<0.03 - 0.21	0.1	0.075	9	77.8%
Orthophosphate, Total	mg/L	<0.03 - 0.06	--	--	9	11.1%
Metals						
Aluminum, Total	ug/L	485 - 36100	8428	10379	18	100.0%
Aluminum, Dissolved	ug/L	<25 - 10500	3810	4138	9	77.8%
Arsenic, Total	ug/L	<0.5 - 4.6	2.2	1.3	9	77.8%
Arsenic, Dissolved	ug/L	<0.5 - 2	1	0.59	9	77.8%
Cadmium, Total	ug/L	<0.2 - 0.4	--	--	9	55.6%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	9	11.1%
Chromium, Total	ug/L	2.9 - 18	8.7	4.7	9	100.0%
Chromium, Dissolved	ug/L	2.6 - 18	5.8	5.8	9	100.0%
Copper, Total	ug/L	9.6 - 32	22	8.1	9	100.0%
Copper, Dissolved	ug/L	4.2 - 17	9.2	4.6	9	100.0%
Iron, Total	ug/L	731 - 21000	7867	6500	9	100.0%
Iron, Dissolved	ug/L	<20 - 3420	1392	1337	9	88.9%
Lead, Total	ug/L	1 - 16	6.2	4.7	9	100.0%
Lead, Dissolved	ug/L	<1 - 6.1	2.7	1.9	9	44.4%
Nickel, Total	ug/L	3 - 20	8.7	5.6	9	100.0%
Nickel, Dissolved	ug/L	<2 - 5.1	2.9	1.7	9	55.6%
Zinc, Total	ug/L	41 - 200	115	48	9	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Zinc, Dissolved	ug/L	33 - 130	68	38	9	100.0%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

Table 2.2. 12 Caltrans Site ID 3-319 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Alkalinity as CaCO3	mg/L	8 - 270	42	121	9	100.0%
Conductivity	umhos/cm	175 - 3750	1678	1129	9	100.0%
Hardness as CaCO3	mg/L	8 - 136	76	48	9	100.0%
pH	pH Units	5.8 - 7.2	6.5	0.44	9	100.0%
TSS	mg/L	6 - 236	71	80	9	100.0%
TDS	mg/L	144 - 1388	769	466	9	100.0%
Turbidity	NTU	17 - 307	132	91	9	100.0%
Temperature	Degrees F	50 - 50	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	<0.05 - 0.4	0.19	0.11	9	77.8%
Nitrate-N	mg/L	<0.1 - 0.91	0.56	0.31	9	88.9%
Nitrite-N	mg/L	<0.1 - <0.1	--	--	9	0.0%
TKN	mg/L	0.17 - 1.1	0.48	0.28	9	100.0%
TOC	mg/L	2.8 - 16	8.7	4.4	9	100.0%
DOC	mg/L	2.5 - 11	7.2	3	9	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.21	0.088	0.066	9	77.8%
Phosphorus, Dissolved	mg/L	<0.03 - 0.11	0.044	0.038	9	55.6%
Orthophosphate, Total	mg/L	<0.03 - <0.03	--	--	9	0.0%
Metals						
Aluminum, Total	ug/L	101 - 17100	3820	4592	18	100.0%
Aluminum, Dissolved	ug/L	<25 - 7480	2349	2779	9	88.9%
Arsenic, Total	ug/L	<1 - 1.6	0.96	0.41	9	88.9%
Arsenic, Dissolved	ug/L	<0.5 - 1	--	--	9	66.7%
Cadmium, Total	ug/L	<0.2 - <0.2	--	--	9	0.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	9	0.0%
Chromium, Total	ug/L	1.8 - 5.4	4.3	1.2	9	100.0%
Chromium, Dissolved	ug/L	1.5 - 4.7	2.9	1	9	100.0%
Copper, Total	ug/L	2.8 - 28	10	8.3	9	100.0%
Copper, Dissolved	ug/L	2.3 - 10	5	3	9	100.0%
Iron, Total	ug/L	264 - 6090	2862	1804	9	100.0%
Iron, Dissolved	ug/L	<20 - 2030	809	763	9	77.8%
Lead, Total	ug/L	<1 - 5	2.2	1.4	9	88.9%
Lead, Dissolved	ug/L	<1 - 3.7	1.3	1.3	9	44.4%
Nickel, Total	ug/L	<2 - 11	4.6	3.4	9	88.9%
Nickel, Dissolved	ug/L	<2 - 3.2	1.4	1.1	9	33.3%
Zinc, Total	ug/L	11 - 42	27	11	9	100.0%

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Zinc, Dissolved	ug/L	<5 - 57	23	18	9	88.9%
Petroleum Hydrocarbons						
Oil & Grease	mg/L	<1.5 - <1.5	--	--	1	0.0%

2.3 State Route 73 Treatment Technology Pilot Study

The State Route 73 (SR 73) Pilot Program consists of various treatment technology BMPs, including optimized detention basins, media filters, and gross solids removal devices located along the San Joaquin Hills Transportation Corridor, State Route 73 (SR-73) in Orange County. These devices were constructed to replace existing Compost Storm Water Filter (CSF) Systems along SR-73 which were originally intended as stormwater BMPs.

At of the beginning of the 2006-2007 stormwater monitoring season, the media filters had not been constructed. The data reported in this section is for the optimized detention basins only.

Table 2.3. 0 SR 73 Treatment Technology Pilot Study Monitoring Sites

Site ID	Site Name	Caltrans District	Regional Board	County	Catchment Area (he)
12-236	883L Inlet	12	San Diego	Orange	1.02
12-237	883L Outlet	12	San Diego	Orange	1.02
12-239	893L Inlet	12	San Diego	Orange	2.22
12-240	893L Outlet	12	San Diego	Orange	2.22
12-242	922R E Inlet	12	Santa Ana	Orange	15.4
12-243	922R E Outlet	12	Santa Ana	Orange	15.4
12-245	922R W Inlet	12	Santa Ana	Orange	15.04
12-246	922R W Outlet	12	Santa Ana	Orange	15.04
12-248	930L Inlet	12	Santa Ana	Orange	1.5
12-249	930L Outlet	12	Santa Ana	Orange	1.5
12-251	1032R Inlet	12	Santa Ana	Orange	10.9
12-252	1032R Outlet	12	Santa Ana	Orange	10.9
12-254	1137L Inlet	12	Santa Ana	Orange	0.405
12-255	1137L Outlet	12	Santa Ana	Orange	0.405
12-305	457L Inlet	12	San Diego	Orange	8.7
12-306	457L Outlet	12	San Diego	Orange	8.7
12-308	535L Inlet	12	San Diego	Orange	1.23
12-309	535L Outlet	12	San Diego	Orange	1.23
12-311	613L Inlet	12	San Diego	Orange	1.7
12-312	613L Outlet	12	San Diego	Orange	1.7
12-314	654R Inlet	12	San Diego	Orange	7.77
12-315	654R Outlet	12	San Diego	Orange	7.77
12-316	654R Overflow	12	San Diego	Orange	7.77
12-320	878R Inlet	12	San Diego	Orange	5.56
12-321	878R Outlet	12	San Diego	Orange	5.56
12-323	859L Inlet	12	San Diego	Orange	3.16
12-324	859L Outlet	12	San Diego	Orange	3.16
12-326	506R Inlet	12	San Diego	Orange	Not Reported

Site ID	Site Name	Caltrans District	Regional Board	County	Catchment Area (he)
12-327	506R Outlet	12	San Diego	Orange	Not Reported
12-329	1149L Inlet	12	Santa Ana	Orange	Not Reported
12-330	1149LOutlet	12	Santa Ana	Orange	Not Reported

Table 2.3. 1 Caltrans Site ID 12-236 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	50 - 98	71	25	4	100.0%
Hardness as CaCO3	mg/L	6.7 - 15	11	4.4	4	100.0%
pH	pH Units	6.3 - 7	6.7	0.35	4	100.0%
TSS	mg/L	9.1 - 97	60	42	4	100.0%
TDS	mg/L	32 - 67	45	18	4	100.0%
Turbidity	NTU	14 - 83	47	31	4	100.0%
Nutrients						
Nitrate-N	mg/L	0.48 - 1.6	1	0.5	4	100.0%
TKN	mg/L	2.2 - 4.7	3.3	1.2	4	100.0%
TOC	mg/L	9.8 - 19	15	4.5	4	100.0%
DOC	mg/L	9.8 - 19	15	4.7	4	100.0%
Phosphorus, Total	mg/L	0.098 - 0.2	0.14	0.054	4	100.0%
Orthophosphate, Dissolved	mg/L	0.058 - 0.079	0.071	0.011	4	100.0%
Metals						
Arsenic, Total	ug/L	2.7 - 6.2	4.6	1.6	4	100.0%
Arsenic, Dissolved	ug/L	1 - 1.8	1.3	0.41	4	100.0%
Cadmium, Total	ug/L	<0.2 - 0.49	0.35	0.16	4	75.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.25	--	--	4	50.0%
Chromium, Total	ug/L	1.4 - 8.6	6	3.8	4	100.0%
Chromium, Dissolved	ug/L	<1 - 2.3	--	--	4	50.0%
Copper, Total	ug/L	27 - 63	45	16	4	100.0%
Copper, Dissolved	ug/L	24 - 50	35	12	4	100.0%
Lead, Total	ug/L	1.6 - 6.8	5	2.8	4	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	4	0.0%
Nickel, Total	ug/L	3.7 - 10	7.5	3.2	4	100.0%
Nickel, Dissolved	ug/L	2.9 - 6.7	4.8	1.9	4	100.0%
Zinc, Total	ug/L	45 - 190	111	67	4	100.0%
Zinc, Dissolved	ug/L	40 - 120	80	36	4	100.0%

Table 2.3. 2 Caltrans Site ID 12-237 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	70 - 120	105	30	4	100.0%
Hardness as CaCO3	mg/L	15 - 26	23	6.2	4	100.0%
pH	pH Units	6.6 - 7.2	6.9	0.28	4	100.0%
TSS	mg/L	<1 - 41	19	20	4	75.0%
TDS	mg/L	35 - 92	64	28	4	100.0%
Turbidity	NTU	12 - 50	28	18	4	100.0%
Nutrients						
Nitrate-N	mg/L	0.92 - 1.9	1.4	0.45	4	100.0%
TKN	mg/L	2.7 - 4.3	3.3	0.86	4	100.0%
TOC	mg/L	14 - 23	19	4.5	4	100.0%
DOC	mg/L	13 - 25	19	5.8	4	100.0%
Phosphorus, Total	mg/L	0.1 - 0.16	0.14	0.029	4	100.0%
Orthophosphate, Dissolved	mg/L	0.056 - 0.097	0.079	0.019	4	100.0%
Metals						
Arsenic, Total	ug/L	2.1 - 5.1	4	1.5	4	100.0%
Arsenic, Dissolved	ug/L	1.2 - 1.8	1.4	0.33	4	100.0%
Cadmium, Total	ug/L	<0.2 - 0.36	0.27	0.11	4	75.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.32	--	--	4	50.0%
Chromium, Total	ug/L	1.8 - 4.4	3.1	1.2	4	100.0%
Chromium, Dissolved	ug/L	<1 - 2.1	1.5	0.88	4	75.0%
Copper, Total	ug/L	30 - 64	47	15	4	100.0%
Copper, Dissolved	ug/L	25 - 57	40	15	4	100.0%
Lead, Total	ug/L	1.2 - 4.1	2.6	1.4	4	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	4	0.0%
Nickel, Total	ug/L	4 - 9	7.1	2.5	4	100.0%
Nickel, Dissolved	ug/L	3.1 - 7.9	6	2.4	4	100.0%
Zinc, Total	ug/L	110 - 250	165	69	4	100.0%
Zinc, Dissolved	ug/L	82 - 220	136	69	4	100.0%

Table 2.3. 3 Caltrans Site ID 12-239 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	81 - 210	129	57	5	100.0%
Hardness as CaCO3	mg/L	20 - 55	32	16	5	100.0%
pH	pH Units	6.5 - 7.2	6.9	0.29	5	100.0%
TSS	mg/L	5.9 - 310	71	188	5	100.0%
TDS	mg/L	58 - 120	90	26	5	100.0%
Turbidity	NTU	4.8 - 24	14	7.8	5	100.0%
Nutrients						
Nitrate-N	mg/L	1.7 - 6.3	3	2.3	5	100.0%
TKN	mg/L	1.7 - 3.6	2.6	0.74	5	100.0%
TOC	mg/L	16 - 29	22	5.8	5	100.0%
DOC	mg/L	15 - 29	22	6.4	5	100.0%
Phosphorus, Total	mg/L	0.086 - 0.74	0.26	0.35	5	100.0%
Orthophosphate, Dissolved	mg/L	0.084 - 0.15	0.12	0.027	5	100.0%
Metals						
Arsenic, Total	ug/L	1 - 6.8	3.9	2.3	5	100.0%
Arsenic, Dissolved	ug/L	<1 - 9.1	--	--	5	20.0%
Cadmium, Total	ug/L	<0.2 - 0.28	--	--	5	60.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.28	0.21	0.053	5	60.0%
Chromium, Total	ug/L	1.3 - 18	4.9	10	5	100.0%
Chromium, Dissolved	ug/L	<1 - 2	1.2	0.66	5	60.0%
Copper, Total	ug/L	32 - 55	44	9.5	5	100.0%
Copper, Dissolved	ug/L	27 - 53	40	11	5	100.0%
Lead, Total	ug/L	<1 - 2.5	1.4	0.84	5	60.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Nickel, Total	ug/L	3.8 - 8.7	6.3	2	5	100.0%
Nickel, Dissolved	ug/L	3.2 - 9.2	5.7	2.5	5	100.0%
Zinc, Total	ug/L	69 - 170	104	46	5	100.0%
Zinc, Dissolved	ug/L	63 - 130	96	29	5	100.0%

Table 2.3. 4 Caltrans Site ID 12-240 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	91 - 200	142	43	5	100.0%
Hardness as CaCO3	mg/L	26 - 57	39	13	5	100.0%
pH	pH Units	6.7 - 7.3	7	0.25	5	100.0%
TSS	mg/L	41 - 160	102	50	5	100.0%
TDS	mg/L	68 - 150	108	32	5	100.0%
Turbidity	NTU	58 - 150	91	41	5	100.0%
Nutrients						
Nitrate-N	mg/L	1.8 - 2.5	2.2	0.3	5	100.0%
TKN	mg/L	1.6 - 3.7	2.6	0.96	5	100.0%
TOC	mg/L	15 - 23	18	3.5	5	100.0%
DOC	mg/L	15 - 26	19	5	5	100.0%
Phosphorus, Total	mg/L	0.23 - 0.7	0.38	0.22	5	100.0%
Orthophosphate, Dissolved	mg/L	0.13 - 0.19	0.15	0.026	5	100.0%
Metals						
Arsenic, Total	ug/L	1.7 - 7.2	4.5	2.2	5	100.0%
Arsenic, Dissolved	ug/L	<1 - 8	--	--	5	40.0%
Cadmium, Total	ug/L	0.21 - 1.2	0.54	0.46	5	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	5	0.0%
Chromium, Total	ug/L	1.6 - 24	9.8	9.9	5	100.0%
Chromium, Dissolved	ug/L	<1 - 2.7	1.5	0.89	5	80.0%
Copper, Total	ug/L	30 - 71	51	18	5	100.0%
Copper, Dissolved	ug/L	24 - 43	31	8.5	5	100.0%
Lead, Total	ug/L	1.9 - 14	6.7	5.1	5	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Nickel, Total	ug/L	4.3 - 22	11	7.7	5	100.0%
Nickel, Dissolved	ug/L	2.7 - 5.8	4.4	1.2	5	100.0%
Zinc, Total	ug/L	85 - 480	239	172	5	100.0%
Zinc, Dissolved	ug/L	41 - 110	64	32	5	100.0%

Table 2.3. 5 Caltrans Site ID 12-242 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	86 - 190	129	65	3	100.0%
Hardness as CaCO3	mg/L	21 - 45	30	17	3	100.0%
pH	pH Units	6.4 - 6.9	6.7	0.32	3	100.0%
TSS	mg/L	3.5 - 32	17	16	3	100.0%
TDS	mg/L	63 - 190	128	71	3	100.0%
Turbidity	NTU	8.6 - 24	18	9.5	3	100.0%
Nutrients						
Nitrate-N	mg/L	2 - 2.5	2.2	0.32	3	100.0%
TKN	mg/L	2.7 - 3.4	3.1	0.46	3	100.0%
TOC	mg/L	18 - 26	21	4.9	3	100.0%
DOC	mg/L	18 - 28	22	7.1	3	100.0%
Phosphorus, Total	mg/L	0.13 - 0.16	0.14	0.018	3	100.0%
Orthophosphate, Dissolved	mg/L	0.08 - 0.11	0.097	0.018	3	100.0%
Metals						
Arsenic, Total	ug/L	1.2 - 4.3	2.9	1.8	3	100.0%
Arsenic, Dissolved	ug/L	<1 - 1	--	--	3	33.3%
Cadmium, Total	ug/L	<0.2 - 0.4	--	--	3	66.7%
Cadmium, Dissolved	ug/L	<0.2 - 0.34	--	--	3	33.3%
Chromium, Total	ug/L	1.2 - 2.5	1.8	0.77	3	100.0%
Chromium, Dissolved	ug/L	<1 - 1.1	--	--	3	33.3%
Copper, Total	ug/L	35 - 56	44	13	3	100.0%
Copper, Dissolved	ug/L	32 - 48	38	11	3	100.0%
Lead, Total	ug/L	1.1 - 2.8	1.9	0.98	3	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	4.5 - 8.8	6.5	2.4	3	100.0%
Nickel, Dissolved	ug/L	4.1 - 8.1	5.8	2.4	3	100.0%
Zinc, Total	ug/L	65 - 170	111	62	3	100.0%
Zinc, Dissolved	ug/L	66 - 140	95	49	3	100.0%

Table 2.3. 6 Caltrans Site ID 12-243 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	95 - 160	118	47	3	100.0%
Hardness as CaCO3	mg/L	18 - 31	--	--	2	100.0%
pH	pH Units	6.7 - 7.2	6.9	0.32	3	100.0%
TSS	mg/L	2.3 - 31	15	17	3	100.0%
TDS	mg/L	63 - 120	86	37	3	100.0%
Turbidity	NTU	6.3 - 15	11	5.1	3	100.0%
Nutrients						
Nitrate-N	mg/L	1.3 - 2.1	1.7	0.45	3	100.0%
TKN	mg/L	1.8 - 4.2	3.2	1.5	3	100.0%
TOC	mg/L	16 - 25	20	5.7	3	100.0%
DOC	mg/L	14 - 26	19	7.4	3	100.0%
Phosphorus, Total	mg/L	0.15 - 0.16	--	--	3	100.0%
Orthophosphate, Dissolved	mg/L	0.063 - 0.11	0.09	0.029	3	100.0%
Metals						
Arsenic, Total	ug/L	1.2 - 4.4	2.9	1.8	3	100.0%
Arsenic, Dissolved	ug/L	<1 - 1.1	--	--	3	33.3%
Cadmium, Total	ug/L	<0.2 - 0.38	--	--	3	66.7%
Cadmium, Dissolved	ug/L	<0.2 - 0.36	--	--	3	33.3%
Chromium, Total	ug/L	1.2 - 2.8	1.8	1.1	3	100.0%
Chromium, Dissolved	ug/L	<1 - 1.2	--	--	3	33.3%
Copper, Total	ug/L	27 - 52	37	16	3	100.0%
Copper, Dissolved	ug/L	26 - 51	35	19	3	100.0%
Lead, Total	ug/L	<1 - 3.4	--	--	3	33.3%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	3.6 - 8.2	5.5	2.8	3	100.0%
Nickel, Dissolved	ug/L	3.5 - 7.8	5.1	3.1	3	100.0%
Zinc, Total	ug/L	66 - 160	115	53	3	100.0%
Zinc, Dissolved	ug/L	66 - 150	94	65	3	100.0%

Table 2.3. 7 Caltrans Site ID 12-245 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	150 - 200	170	26	4	100.0%
Hardness as CaCO3	mg/L	30 - 55	45	12	4	100.0%
pH	pH Units	4.8 - 6.9	6.3	1.3	4	100.0%
TSS	mg/L	2.2 - 15	6.9	6.7	4	100.0%
TDS	mg/L	130 - 170	143	23	4	100.0%
Turbidity	NTU	5.4 - 20	9.9	8.6	4	100.0%
Nutrients						
Nitrate-N	mg/L	4.2 - 5.7	4.8	0.75	4	100.0%
TKN	mg/L	2.2 - 4	3.2	0.88	4	100.0%
TOC	mg/L	20 - 36	30	8.4	4	100.0%
DOC	mg/L	19 - 38	30	9.3	4	100.0%
Phosphorus, Total	mg/L	0.14 - 0.21	0.18	0.033	4	100.0%
Orthophosphate, Dissolved	mg/L	0.094 - 0.15	0.13	0.029	4	100.0%
Metals						
Arsenic, Total	ug/L	2.1 - 5.1	4	1.5	4	100.0%
Arsenic, Dissolved	ug/L	1.4 - 1.9	1.6	0.27	4	100.0%
Cadmium, Total	ug/L	0.26 - 0.41	0.33	0.084	4	100.0%
Cadmium, Dissolved	ug/L	0.22 - 0.37	0.29	0.075	4	100.0%
Chromium, Total	ug/L	1.4 - 2	1.8	0.31	4	100.0%
Chromium, Dissolved	ug/L	<1 - 1.5	--	--	4	50.0%
Copper, Total	ug/L	48 - 79	62	14	4	100.0%
Copper, Dissolved	ug/L	40 - 72	55	15	4	100.0%
Lead, Total	ug/L	<1 - <1	--	--	4	0.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	4	0.0%
Nickel, Total	ug/L	5.7 - 10	8	2.1	4	100.0%
Nickel, Dissolved	ug/L	5 - 9.3	7.2	2.2	4	100.0%
Zinc, Total	ug/L	150 - 300	208	76	4	100.0%
Zinc, Dissolved	ug/L	140 - 250	193	56	4	100.0%

Table 2.3. 8 Caltrans Site ID 12-246 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	130 - 220	168	44	4	100.0%
Hardness as CaCO3	mg/L	33 - 75	50	21	4	100.0%
pH	pH Units	6.7 - 6.9	6.8	0.09	4	100.0%
TSS	mg/L	<1 - 7.6	--	--	4	50.0%
TDS	mg/L	100 - 180	135	39	4	100.0%
Turbidity	NTU	3.8 - 16	8.5	6.2	4	100.0%
Nutrients						
Nitrate-N	mg/L	3.3 - 6.3	4.3	1.7	4	100.0%
TKN	mg/L	1.8 - 3.9	2.9	0.98	4	100.0%
TOC	mg/L	19 - 37	28	8.5	4	100.0%
DOC	mg/L	18 - 36	28	9.1	4	100.0%
Phosphorus, Total	mg/L	0.15 - 0.79	0.36	0.37	4	100.0%
Orthophosphate, Dissolved	mg/L	0.1 - 0.2	0.15	0.047	4	100.0%
Metals						
Arsenic, Total	ug/L	2.1 - 5.2	4	1.5	4	100.0%
Arsenic, Dissolved	ug/L	1.5 - 2.1	1.7	0.34	4	100.0%
Cadmium, Total	ug/L	<0.2 - 0.34	0.26	0.12	4	75.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.32	0.25	0.088	4	75.0%
Chromium, Total	ug/L	1.3 - 2	1.6	0.32	4	100.0%
Chromium, Dissolved	ug/L	<1 - 1.4	--	--	4	50.0%
Copper, Total	ug/L	38 - 62	51	12	4	100.0%
Copper, Dissolved	ug/L	34 - 59	46	13	4	100.0%
Lead, Total	ug/L	<1 - <1	--	--	4	0.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	4	0.0%
Nickel, Total	ug/L	4.7 - 9.1	6.9	2.3	4	100.0%
Nickel, Dissolved	ug/L	4.3 - 8.5	6.4	2.4	4	100.0%
Zinc, Total	ug/L	120 - 240	168	60	4	100.0%
Zinc, Dissolved	ug/L	110 - 240	165	62	4	100.0%

Table 2.3. 9 Caltrans Site ID 12-248 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	120 - 170	154	24	5	100.0%
Hardness as CaCO3	mg/L	35 - 49	41	6.5	5	100.0%
pH	pH Units	6.4 - 6.8	6.6	0.19	5	100.0%
TSS	mg/L	<1 - 7.3	--	--	5	60.0%
TDS	mg/L	98 - 140	128	21	5	100.0%
Turbidity	NTU	3.2 - 12	5.9	4.3	5	100.0%
Nutrients						
Nitrate-N	mg/L	4.2 - 4.9	4.6	0.33	5	100.0%
TKN	mg/L	2.7 - 4.5	3.8	0.77	5	100.0%
TOC	mg/L	26 - 38	32	5.5	5	100.0%
DOC	mg/L	26 - 39	32	5.9	5	100.0%
Phosphorus, Total	mg/L	0.2 - 0.24	0.22	0.019	5	100.0%
Orthophosphate, Dissolved	mg/L	0.16 - 0.2	0.18	0.019	5	100.0%
Metals						
Arsenic, Total	ug/L	2.3 - 7	4.7	1.8	5	100.0%
Arsenic, Dissolved	ug/L	1.4 - 2.3	1.7	0.4	5	100.0%
Cadmium, Total	ug/L	0.29 - 0.42	0.35	0.052	5	100.0%
Cadmium, Dissolved	ug/L	0.22 - 0.4	0.3	0.073	5	100.0%
Chromium, Total	ug/L	1.2 - 1.9	1.6	0.32	5	100.0%
Chromium, Dissolved	ug/L	<1 - 1.7	1.3	0.33	5	60.0%
Copper, Total	ug/L	50 - 74	58	11	5	100.0%
Copper, Dissolved	ug/L	45 - 72	55	12	5	100.0%
Lead, Total	ug/L	<1 - 3.3	--	--	5	40.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Nickel, Total	ug/L	7.1 - 11	8.9	1.7	5	100.0%
Nickel, Dissolved	ug/L	5.6 - 10	7.9	1.8	5	100.0%
Zinc, Total	ug/L	190 - 340	224	88	5	100.0%
Zinc, Dissolved	ug/L	180 - 290	216	52	5	100.0%

Table 2.3. 10 Caltrans Site ID 12-249 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	110 - 180	156	35	5	100.0%
Hardness as CaCO3	mg/L	27 - 48	40	9.2	5	100.0%
pH	pH Units	6.3 - 7.1	6.8	0.33	5	100.0%
TSS	mg/L	3.6 - 42	23	17	5	100.0%
TDS	mg/L	98 - 150	124	24	5	100.0%
Turbidity	NTU	4.4 - 28	19	10	5	100.0%
Nutrients						
Nitrate-N	mg/L	3 - 4.7	3.9	0.69	5	100.0%
TKN	mg/L	1.6 - 4.5	3.2	1.1	5	100.0%
TOC	mg/L	18 - 35	27	7.4	5	100.0%
DOC	mg/L	17 - 37	28	8.6	5	100.0%
Phosphorus, Total	mg/L	0.14 - 1.5	0.46	0.8	5	100.0%
Orthophosphate, Dissolved	mg/L	0.13 - 0.19	0.16	0.025	5	100.0%
Metals						
Arsenic, Total	ug/L	2.3 - 5.1	4.4	1.5	5	100.0%
Arsenic, Dissolved	ug/L	1.4 - 2.1	1.6	0.33	5	100.0%
Cadmium, Total	ug/L	<0.2 - 0.34	0.26	0.088	5	80.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.31	0.21	0.08	5	60.0%
Chromium, Total	ug/L	1.3 - 4.7	2.8	1.4	5	100.0%
Chromium, Dissolved	ug/L	<1 - 1.4	1.2	0.16	5	60.0%
Copper, Total	ug/L	33 - 62	46	12	5	100.0%
Copper, Dissolved	ug/L	32 - 58	42	11	5	100.0%
Lead, Total	ug/L	<1 - 1.1	--	--	5	20.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	5	0.0%
Nickel, Total	ug/L	5.4 - 9.9	8	2.1	5	100.0%
Nickel, Dissolved	ug/L	4.2 - 8.6	6.4	2	5	100.0%
Zinc, Total	ug/L	130 - 390	198	143	5	100.0%
Zinc, Dissolved	ug/L	110 - 290	164	89	5	100.0%

Table 2.3. 11 Caltrans Site ID 12-251 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	140 - 150	--	--	3	100.0%
Hardness as CaCO3	mg/L	39 - 44	41	3.2	3	100.0%
pH	pH Units	6.8 - 7	--	--	3	100.0%
TSS	mg/L	26 - 120	75	53	3	100.0%
TDS	mg/L	120 - 140	--	--	3	100.0%
Turbidity	NTU	37 - 86	63	28	3	100.0%
Nutrients						
Nitrate-N	mg/L	2.4 - 2.9	--	--	3	100.0%
TKN	mg/L	3.4 - 4.5	4	0.63	3	100.0%
TOC	mg/L	34 - 47	41	7.4	3	100.0%
DOC	mg/L	38 - 47	41	6.3	3	100.0%
Phosphorus, Total	mg/L	0.15 - 0.23	0.19	0.045	3	100.0%
Orthophosphate, Dissolved	mg/L	0.06 - 0.12	0.09	0.033	3	100.0%
Metals						
Arsenic, Total	ug/L	1.6 - 7.4	4.4	3.2	3	100.0%
Arsenic, Dissolved	ug/L	1.1 - 8	3.5	5.3	3	100.0%
Cadmium, Total	ug/L	0.32 - 0.72	0.49	0.24	3	100.0%
Cadmium, Dissolved	ug/L	0.21 - 0.34	0.28	0.077	3	100.0%
Chromium, Total	ug/L	3 - 11	6	5.6	3	100.0%
Chromium, Dissolved	ug/L	1.5 - 2.3	1.8	0.49	3	100.0%
Copper, Total	ug/L	60 - 71	66	6.3	3	100.0%
Copper, Dissolved	ug/L	41 - 61	52	12	3	100.0%
Lead, Total	ug/L	1.4 - 4.8	2.6	2.6	3	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	9.6 - 14	12	2.6	3	100.0%
Nickel, Dissolved	ug/L	6.9 - 8.8	7.6	1.3	3	100.0%
Zinc, Total	ug/L	110 - 200	167	63	3	100.0%
Zinc, Dissolved	ug/L	97 - 140	116	26	3	100.0%

Table 2.3. 12 Caltrans Site ID 12-252 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	130 - 160	143	18	3	100.0%
Hardness as CaCO3	mg/L	37 - 51	42	9.5	3	100.0%
pH	pH Units	6.9 - 7.2	--	--	3	100.0%
TSS	mg/L	2.6 - 160	94	97	3	100.0%
TDS	mg/L	110 - 190	147	46	3	100.0%
Turbidity	NTU	39 - 150	93	62	3	100.0%
Nutrients						
Nitrate-N	mg/L	1.5 - 2.6	2	0.62	3	100.0%
TKN	mg/L	2.5 - 4.6	3.3	1.5	3	100.0%
TOC	mg/L	16 - 44	30	16	3	100.0%
DOC	mg/L	17 - 43	31	15	3	100.0%
Phosphorus, Total	mg/L	0.16 - 0.27	0.23	0.072	3	100.0%
Orthophosphate, Dissolved	mg/L	0.06 - 0.12	0.086	0.036	3	100.0%
Metals						
Arsenic, Total	ug/L	1.6 - 7.8	4.6	3.5	3	100.0%
Arsenic, Dissolved	ug/L	1.1 - 8.2	3.5	5.5	3	100.0%
Cadmium, Total	ug/L	0.23 - 0.59	0.38	0.22	3	100.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.23	--	--	3	33.3%
Chromium, Total	ug/L	2.3 - 21	8.8	14	3	100.0%
Chromium, Dissolved	ug/L	1.4 - 1.9	1.6	0.28	3	100.0%
Copper, Total	ug/L	57 - 65	--	--	3	100.0%
Copper, Dissolved	ug/L	31 - 53	44	14	3	100.0%
Lead, Total	ug/L	<1 - 6.1	--	--	3	66.7%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	8.4 - 23	14	10	3	100.0%
Nickel, Dissolved	ug/L	5.5 - 7.6	6.7	1.3	3	100.0%
Zinc, Total	ug/L	120 - 190	157	39	3	100.0%
Zinc, Dissolved	ug/L	33 - 130	91	62	3	100.0%

Table 2.3. 13 Caltrans Site ID 12-254 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	210 - 210	--	--	1	100.0%
Hardness as CaCO3	mg/L	52 - 52	--	--	1	100.0%
pH	pH Units	7.1 - 7.1	--	--	1	100.0%
TSS	mg/L	62 - 62	--	--	1	100.0%
TDS	mg/L	170 - 170	--	--	1	100.0%
Turbidity	NTU	75 - 75	--	--	1	100.0%
Nutrients						
Nitrate-N	mg/L	3.1 - 3.1	--	--	1	100.0%
TKN	mg/L	4.9 - 4.9	--	--	1	100.0%
TOC	mg/L	56 - 56	--	--	1	100.0%
DOC	mg/L	61 - 61	--	--	1	100.0%
Phosphorus, Total	mg/L	0.12 - 0.12	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.12 - 0.12	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	1.4 - 1.4	--	--	1	100.0%
Arsenic, Dissolved	ug/L	1 - 1	--	--	1	100.0%
Cadmium, Total	ug/L	0.79 - 0.79	--	--	1	100.0%
Cadmium, Dissolved	ug/L	0.57 - 0.57	--	--	1	100.0%
Chromium, Total	ug/L	5.2 - 5.2	--	--	1	100.0%
Chromium, Dissolved	ug/L	2.6 - 2.6	--	--	1	100.0%
Copper, Total	ug/L	160 - 160	--	--	1	100.0%
Copper, Dissolved	ug/L	120 - 120	--	--	1	100.0%
Lead, Total	ug/L	6.9 - 6.9	--	--	1	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Nickel, Total	ug/L	18 - 18	--	--	1	100.0%
Nickel, Dissolved	ug/L	15 - 15	--	--	1	100.0%
Zinc, Total	ug/L	840 - 840	--	--	1	100.0%
Zinc, Dissolved	ug/L	640 - 640	--	--	1	100.0%

Table 2.3. 14 Caltrans Site ID 12-255 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	150 - 150	--	--	1	100.0%
Hardness as CaCO3	mg/L	38 - 38	--	--	1	100.0%
pH	pH Units	7 - 7	--	--	1	100.0%
TSS	mg/L	53 - 53	--	--	1	100.0%
TDS	mg/L	110 - 110	--	--	1	100.0%
Turbidity	NTU	56 - 56	--	--	1	100.0%
Nutrients						
Nitrate-N	mg/L	1.6 - 1.6	--	--	1	100.0%
TKN	mg/L	3.2 - 3.2	--	--	1	100.0%
TOC	mg/L	35 - 35	--	--	1	100.0%
DOC	mg/L	38 - 38	--	--	1	100.0%
Phosphorus, Total	mg/L	0.14 - 0.14	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.13 - 0.13	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	<1 - <1	--	--	1	0.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Cadmium, Total	ug/L	0.34 - 0.34	--	--	1	100.0%
Cadmium, Dissolved	ug/L	0.31 - 0.31	--	--	1	100.0%
Chromium, Total	ug/L	3 - 3	--	--	1	100.0%
Chromium, Dissolved	ug/L	2.2 - 2.2	--	--	1	100.0%
Copper, Total	ug/L	94 - 94	--	--	1	100.0%
Copper, Dissolved	ug/L	87 - 87	--	--	1	100.0%
Lead, Total	ug/L	1.9 - 1.9	--	--	1	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Nickel, Total	ug/L	11 - 11	--	--	1	100.0%
Nickel, Dissolved	ug/L	10 - 10	--	--	1	100.0%
Zinc, Total	ug/L	470 - 470	--	--	1	100.0%
Zinc, Dissolved	ug/L	400 - 400	--	--	1	100.0%

Table 2.3. 15 Caltrans Site ID 12-305 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	420 - 460	--	--	2	100.0%
Hardness as CaCO3	mg/L	130 - 140	--	--	2	100.0%
pH	pH Units	7.2 - 7.2	--	--	2	100.0%
TSS	mg/L	6.2 - 140	--	--	2	100.0%
TDS	mg/L	290 - 330	--	--	2	100.0%
Turbidity	NTU	18 - 100	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	2.5 - 2.7	--	--	2	100.0%
TKN	mg/L	2.3 - 3.3	--	--	2	100.0%
TOC	mg/L	23 - 26	--	--	2	100.0%
DOC	mg/L	23 - 25	--	--	2	100.0%
Phosphorus, Total	mg/L	0.2 - 0.25	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.11 - 0.16	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	4.5 - 5.9	--	--	2	100.0%
Arsenic, Dissolved	ug/L	<1 - 1.2	--	--	2	50.0%
Cadmium, Total	ug/L	1.2 - 1.9	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.91 - 1.1	--	--	2	100.0%
Chromium, Total	ug/L	2.8 - 5.5	--	--	2	100.0%
Chromium, Dissolved	ug/L	2.1 - 2.6	--	--	2	100.0%
Copper, Total	ug/L	33 - 40	--	--	2	100.0%
Copper, Dissolved	ug/L	22 - 32	--	--	2	100.0%
Lead, Total	ug/L	<1 - 2.9	--	--	2	50.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	18 - 19	--	--	2	100.0%
Nickel, Dissolved	ug/L	15 - 15	--	--	2	100.0%
Zinc, Total	ug/L	68 - 110	--	--	2	100.0%
Zinc, Dissolved	ug/L	46 - 88	--	--	2	100.0%

Table 2.3. 16 Caltrans Site ID 12-306 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	230 - 290	--	--	2	100.0%
Hardness as CaCO3	mg/L	68 - 100	--	--	2	100.0%
pH	pH Units	7.1 - 7.3	--	--	2	100.0%
TSS	mg/L	16 - 22	--	--	2	100.0%
TDS	mg/L	160 - 210	--	--	2	100.0%
Turbidity	NTU	13 - 29	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	1.3 - 2.6	--	--	2	100.0%
TKN	mg/L	1.5 - 2.6	--	--	2	100.0%
TOC	mg/L	16 - 29	--	--	2	100.0%
DOC	mg/L	16 - 28	--	--	2	100.0%
Phosphorus, Total	mg/L	0.15 - 0.18	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.058 - 0.07	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	4.4 - 5.2	--	--	2	100.0%
Arsenic, Dissolved	ug/L	<1 - 1.1	--	--	2	50.0%
Cadmium, Total	ug/L	0.72 - 1.4	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.56 - 0.76	--	--	2	100.0%
Chromium, Total	ug/L	2.6 - 3.2	--	--	2	100.0%
Chromium, Dissolved	ug/L	2.3 - 3.1	--	--	2	100.0%
Copper, Total	ug/L	24 - 41	--	--	2	100.0%
Copper, Dissolved	ug/L	18 - 35	--	--	2	100.0%
Lead, Total	ug/L	<1 - 1.4	--	--	2	50.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	13 - 14	--	--	2	100.0%
Nickel, Dissolved	ug/L	11 - 13	--	--	2	100.0%
Zinc, Total	ug/L	60 - 63	--	--	2	100.0%
Zinc, Dissolved	ug/L	47 - 110	--	--	2	100.0%

Table 2.3. 17 Caltrans Site ID 12-308 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	270 - 420	--	--	2	100.0%
Hardness as CaCO3	mg/L	86 - 170	--	--	2	100.0%
pH	pH Units	6.7 - 7.4	--	--	2	100.0%
TSS	mg/L	13 - 22	--	--	2	100.0%
TDS	mg/L	240 - 310	--	--	2	100.0%
Turbidity	NTU	18 - 19	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	3.4 - 5.1	--	--	2	100.0%
TKN	mg/L	3 - 9	--	--	2	100.0%
TOC	mg/L	28 - 53	--	--	2	100.0%
DOC	mg/L	29 - 52	--	--	2	100.0%
Phosphorus, Total	mg/L	0.14 - 0.43	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.11 - 0.36	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	1 - 3.7	--	--	2	100.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Cadmium, Total	ug/L	0.57 - 1.3	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.41 - 1.3	--	--	2	100.0%
Chromium, Total	ug/L	1.7 - 1.9	--	--	2	100.0%
Chromium, Dissolved	ug/L	1.3 - 1.4	--	--	2	100.0%
Copper, Total	ug/L	27 - 50	--	--	2	100.0%
Copper, Dissolved	ug/L	24 - 48	--	--	2	100.0%
Lead, Total	ug/L	<1 - <1	--	--	2	0.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	12 - 15	--	--	2	100.0%
Nickel, Dissolved	ug/L	9.8 - 13	--	--	2	100.0%
Zinc, Total	ug/L	69 - 100	--	--	2	100.0%
Zinc, Dissolved	ug/L	48 - 76	--	--	2	100.0%

Table 2.3. 18 Caltrans Site ID 12-309 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	330 - 380	--	--	2	100.0%
Hardness as CaCO3	mg/L	120 - 130	--	--	2	100.0%
pH	pH Units	6.7 - 7.2	--	--	2	100.0%
TSS	mg/L	6.1 - 6.1	--	--	2	100.0%
TDS	mg/L	290 - 320	--	--	2	100.0%
Turbidity	NTU	5.8 - 7.5	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	2.9 - 4.2	--	--	2	100.0%
TKN	mg/L	3.3 - 3.8	--	--	2	100.0%
TOC	mg/L	27 - 34	--	--	2	100.0%
DOC	mg/L	27 - 33	--	--	2	100.0%
Phosphorus, Total	mg/L	0.15 - 0.29	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.13 - 0.19	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	1.1 - 4	--	--	2	100.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Cadmium, Total	ug/L	0.48 - 1.4	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.4 - 1.2	--	--	2	100.0%
Chromium, Total	ug/L	1.5 - 1.6	--	--	2	100.0%
Chromium, Dissolved	ug/L	1.2 - 1.4	--	--	2	100.0%
Copper, Total	ug/L	28 - 37	--	--	2	100.0%
Copper, Dissolved	ug/L	27 - 32	--	--	2	100.0%
Lead, Total	ug/L	<1 - <1	--	--	2	0.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	8.4 - 15	--	--	2	100.0%
Nickel, Dissolved	ug/L	6.9 - 13	--	--	2	100.0%
Zinc, Total	ug/L	83 - 150	--	--	2	100.0%
Zinc, Dissolved	ug/L	64 - 120	--	--	2	100.0%

Table 2.3. 19 Caltrans Site ID 12-311 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	140 - 150	--	--	3	100.0%
Hardness as CaCO3	mg/L	40 - 49	44	5.3	3	100.0%
pH	pH Units	6.7 - 7.3	7	0.35	3	100.0%
TSS	mg/L	7.1 - 28	18	12	3	100.0%
TDS	mg/L	100 - 120	110	11	3	100.0%
Turbidity	NTU	10 - 24	18	8.9	3	100.0%
Nutrients						
Nitrate-N	mg/L	1.3 - 2.3	1.8	0.56	3	100.0%
TKN	mg/L	2 - 2.7	2.4	0.43	3	100.0%
TOC	mg/L	18 - 26	21	4.9	3	100.0%
DOC	mg/L	18 - 26	21	4.9	3	100.0%
Phosphorus, Total	mg/L	0.088 - 0.15	0.11	0.041	3	100.0%
Orthophosphate, Dissolved	mg/L	0.081 - 0.11	0.095	0.016	3	100.0%
Metals						
Arsenic, Total	ug/L	1.1 - 4.4	3	2	3	100.0%
Arsenic, Dissolved	ug/L	<1 - 1	--	--	3	33.3%
Cadmium, Total	ug/L	0.24 - 0.5	0.33	0.19	3	100.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.25	--	--	3	33.3%
Chromium, Total	ug/L	1.8 - 4.8	2.9	2.2	3	100.0%
Chromium, Dissolved	ug/L	1.2 - 1.5	1.4	0.18	3	100.0%
Copper, Total	ug/L	26 - 54	38	17	3	100.0%
Copper, Dissolved	ug/L	22 - 32	28	6.4	3	100.0%
Lead, Total	ug/L	<1 - 5.5	--	--	3	33.3%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	4.6 - 8.4	6.2	2.3	3	100.0%
Nickel, Dissolved	ug/L	4.2 - 6.3	5	1.4	3	100.0%
Zinc, Total	ug/L	62 - 160	103	60	3	100.0%
Zinc, Dissolved	ug/L	46 - 83	63	21	3	100.0%

Table 2.3. 20 Caltrans Site ID 12-312 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	170 - 200	187	18	3	100.0%
Hardness as CaCO3	mg/L	59 - 100	73	32	3	100.0%
pH	pH Units	6.8 - 7.2	7	0.25	3	100.0%
TSS	mg/L	1.2 - 16	6.5	11	3	100.0%
TDS	mg/L	130 - 160	143	18	3	100.0%
Turbidity	NTU	6.7 - 7.5	7.1	0.46	3	100.0%
Nutrients						
Nitrate-N	mg/L	1.2 - 2.3	1.7	0.63	3	100.0%
TKN	mg/L	1.6 - 1.9	1.8	0.21	3	100.0%
TOC	mg/L	18 - 26	22	4.5	3	100.0%
DOC	mg/L	19 - 26	22	4.2	3	100.0%
Phosphorus, Total	mg/L	0.15 - 0.21	0.17	0.04	3	100.0%
Orthophosphate, Dissolved	mg/L	0.11 - 0.14	--	--	3	100.0%
Metals						
Arsenic, Total	ug/L	1.3 - 5.6	3.8	2.6	3	100.0%
Arsenic, Dissolved	ug/L	1.2 - 1.2	--	--	3	100.0%
Cadmium, Total	ug/L	0.28 - 0.73	0.43	0.35	3	100.0%
Cadmium, Dissolved	ug/L	0.21 - 0.36	0.27	0.092	3	100.0%
Chromium, Total	ug/L	1.8 - 2	--	--	3	100.0%
Chromium, Dissolved	ug/L	1.2 - 3.5	2.1	1.5	3	100.0%
Copper, Total	ug/L	23 - 32	--	--	3	100.0%
Copper, Dissolved	ug/L	24 - 28	26	2.5	3	100.0%
Lead, Total	ug/L	<1 - <1	--	--	3	0.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	4.5 - 6.5	5.5	1.1	3	100.0%
Nickel, Dissolved	ug/L	4 - 7.4	5.2	2.5	3	100.0%
Zinc, Total	ug/L	41 - 80	67	30	3	100.0%
Zinc, Dissolved	ug/L	43 - 110	75	38	3	100.0%

Table 2.3. 21 Caltrans Site ID 12-314 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	190 - 190	--	--	1	100.0%
Hardness as CaCO3	mg/L	62 - 62	--	--	1	100.0%
pH	pH Units	7.2 - 7.2	--	--	1	100.0%
TSS	mg/L	430 - 430	--	--	1	100.0%
TDS	mg/L	160 - 160	--	--	1	100.0%
Turbidity	NTU	200 - 200	--	--	1	100.0%
Nutrients						
Nitrate-N	mg/L	1.9 - 1.9	--	--	1	100.0%
TKN	mg/L	4.8 - 4.8	--	--	1	100.0%
TOC	mg/L	23 - 23	--	--	1	100.0%
DOC	mg/L	26 - 26	--	--	1	100.0%
Phosphorus, Total	mg/L	0.48 - 0.48	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.17 - 0.17	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	2.9 - 2.9	--	--	1	100.0%
Arsenic, Dissolved	ug/L	1.2 - 1.2	--	--	1	100.0%
Cadmium, Total	ug/L	1.6 - 1.6	--	--	1	100.0%
Cadmium, Dissolved	ug/L	0.36 - 0.36	--	--	1	100.0%
Chromium, Total	ug/L	9.8 - 9.8	--	--	1	100.0%
Chromium, Dissolved	ug/L	1.7 - 1.7	--	--	1	100.0%
Copper, Total	ug/L	39 - 39	--	--	1	100.0%
Copper, Dissolved	ug/L	25 - 25	--	--	1	100.0%
Lead, Total	ug/L	2.9 - 2.9	--	--	1	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Nickel, Total	ug/L	15 - 15	--	--	1	100.0%
Nickel, Dissolved	ug/L	7.2 - 7.2	--	--	1	100.0%
Zinc, Total	ug/L	130 - 130	--	--	1	100.0%
Zinc, Dissolved	ug/L	31 - 31	--	--	1	100.0%

Table 2.3. 22 Caltrans Site ID 12-315 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	240 - 240	--	--	1	100.0%
Hardness as CaCO3	mg/L	69 - 69	--	--	1	100.0%
pH	pH Units	6.8 - 6.8	--	--	1	100.0%
TSS	mg/L	82 - 82	--	--	1	100.0%
TDS	mg/L	190 - 190	--	--	1	100.0%
Turbidity	NTU	35 - 35	--	--	1	100.0%
Nutrients						
Nitrate-N	mg/L	1.9 - 1.9	--	--	1	100.0%
TKN	mg/L	4.2 - 4.2	--	--	1	100.0%
TOC	mg/L	23 - 23	--	--	1	100.0%
DOC	mg/L	23 - 23	--	--	1	100.0%
Phosphorus, Total	mg/L	0.35 - 0.35	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.16 - 0.16	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	1.7 - 1.7	--	--	1	100.0%
Arsenic, Dissolved	ug/L	1.3 - 1.3	--	--	1	100.0%
Cadmium, Total	ug/L	0.7 - 0.7	--	--	1	100.0%
Cadmium, Dissolved	ug/L	0.47 - 0.47	--	--	1	100.0%
Chromium, Total	ug/L	3.2 - 3.2	--	--	1	100.0%
Chromium, Dissolved	ug/L	1.7 - 1.7	--	--	1	100.0%
Copper, Total	ug/L	34 - 34	--	--	1	100.0%
Copper, Dissolved	ug/L	34 - 34	--	--	1	100.0%
Lead, Total	ug/L	1 - 1	--	--	1	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Nickel, Total	ug/L	9.7 - 9.7	--	--	1	100.0%
Nickel, Dissolved	ug/L	7.9 - 7.9	--	--	1	100.0%
Zinc, Total	ug/L	110 - 110	--	--	1	100.0%
Zinc, Dissolved	ug/L	77 - 77	--	--	1	100.0%

Table 2.3. 23 Caltrans Site ID 12-316 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	170 - 170	--	--	1	100.0%
Hardness as CaCO3	mg/L	51 - 51	--	--	1	100.0%
pH	pH Units	6.9 - 6.9	--	--	1	100.0%
TSS	mg/L	60 - 60	--	--	1	100.0%
TDS	mg/L	130 - 130	--	--	1	100.0%
Turbidity	NTU	42 - 42	--	--	1	100.0%
Nutrients						
Nitrate-N	mg/L	2.2 - 2.2	--	--	1	100.0%
TKN	mg/L	4.3 - 4.3	--	--	1	100.0%
TOC	mg/L	26 - 26	--	--	1	100.0%
DOC	mg/L	28 - 28	--	--	1	100.0%
Phosphorus, Total	mg/L	0.24 - 0.24	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.16 - 0.16	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	1.4 - 1.4	--	--	1	100.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Cadmium, Total	ug/L	0.72 - 0.72	--	--	1	100.0%
Cadmium, Dissolved	ug/L	0.49 - 0.49	--	--	1	100.0%
Chromium, Total	ug/L	4 - 4	--	--	1	100.0%
Chromium, Dissolved	ug/L	2.1 - 2.1	--	--	1	100.0%
Copper, Total	ug/L	43 - 43	--	--	1	100.0%
Copper, Dissolved	ug/L	37 - 37	--	--	1	100.0%
Lead, Total	ug/L	1.3 - 1.3	--	--	1	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Nickel, Total	ug/L	9.9 - 9.9	--	--	1	100.0%
Nickel, Dissolved	ug/L	8.6 - 8.6	--	--	1	100.0%
Zinc, Total	ug/L	140 - 140	--	--	1	100.0%
Zinc, Dissolved	ug/L	100 - 100	--	--	1	100.0%

Table 2.3. 24 Caltrans Site ID 12-320 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	110 - 170	140	33	3	100.0%
Hardness as CaCO3	mg/L	22 - 34	29	7.4	3	100.0%
pH	pH Units	6.5 - 7	--	--	3	100.0%
TSS	mg/L	1.5 - 49	22	29	3	100.0%
TDS	mg/L	74 - 120	98	26	3	100.0%
Turbidity	NTU	11 - 51	28	24	3	100.0%
Nutrients						
Nitrate-N	mg/L	2.7 - 3.9	--	--	3	100.0%
TKN	mg/L	5.5 - 6.2	5.9	0.49	3	100.0%
TOC	mg/L	22 - 29	26	4.2	3	100.0%
DOC	mg/L	21 - 29	--	--	3	100.0%
Phosphorus, Total	mg/L	0.16 - 0.22	0.19	0.033	3	100.0%
Orthophosphate, Dissolved	mg/L	0.1 - 0.12	--	--	3	100.0%
Metals						
Arsenic, Total	ug/L	1.3 - 4.2	3.1	1.9	3	100.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Cadmium, Total	ug/L	0.24 - 0.44	0.35	0.12	3	100.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.31	--	--	3	66.7%
Chromium, Total	ug/L	1.3 - 3.7	2.5	1.3	3	100.0%
Chromium, Dissolved	ug/L	<1 - 1.1	--	--	3	33.3%
Copper, Total	ug/L	30 - 48	38	10	3	100.0%
Copper, Dissolved	ug/L	28 - 40	33	7.4	3	100.0%
Lead, Total	ug/L	<1 - 2.6	--	--	3	66.7%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	5.3 - 9.1	7.6	2.5	3	100.0%
Nickel, Dissolved	ug/L	4.2 - 7.3	6.2	2.3	3	100.0%
Zinc, Total	ug/L	95 - 200	148	59	3	100.0%
Zinc, Dissolved	ug/L	76 - 140	115	43	3	100.0%

Table 2.3. 25 Caltrans Site ID 12-321 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	120 - 190	153	39	3	100.0%
Hardness as CaCO3	mg/L	47 - 52	--	--	2	100.0%
pH	pH Units	7 - 7.1	--	--	3	100.0%
TSS	mg/L	<1 - 12	--	--	3	66.7%
TDS	mg/L	82 - 140	111	32	3	100.0%
Turbidity	NTU	4.9 - 21	11	11	3	100.0%
Nutrients						
Nitrate-N	mg/L	2 - 3.5	2.7	0.88	3	100.0%
TKN	mg/L	4.7 - 5.7	5.3	0.58	3	100.0%
TOC	mg/L	22 - 32	27	5.7	3	100.0%
DOC	mg/L	21 - 29	25	4.6	3	100.0%
Phosphorus, Total	mg/L	0.06 - 0.17	0.13	0.072	3	100.0%
Orthophosphate, Dissolved	mg/L	0.087 - 0.14	0.11	0.03	3	100.0%
Metals						
Arsenic, Total	ug/L	1.1 - 4.5	3.3	2.5	3	100.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Cadmium, Total	ug/L	0.28 - 0.52	0.38	0.15	3	100.0%
Cadmium, Dissolved	ug/L	0.28 - 0.47	0.36	0.12	3	100.0%
Chromium, Total	ug/L	1.3 - 1.8	1.6	0.32	3	100.0%
Chromium, Dissolved	ug/L	<1 - 1.2	--	--	3	33.3%
Copper, Total	ug/L	26 - 37	32	6.3	3	100.0%
Copper, Dissolved	ug/L	26 - 35	31	5.3	3	100.0%
Lead, Total	ug/L	<1 - <1	--	--	3	0.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	3	0.0%
Nickel, Total	ug/L	4.8 - 7.8	6.5	1.8	3	100.0%
Nickel, Dissolved	ug/L	4.4 - 6.8	5.7	1.4	3	100.0%
Zinc, Total	ug/L	89 - 130	113	25	3	100.0%
Zinc, Dissolved	ug/L	81 - 130	107	28	3	100.0%

Table 2.3. 26 Caltrans Site ID 12-323 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	120 - 260	173	72	4	100.0%
Hardness as CaCO3	mg/L	28 - 72	44	23	4	100.0%
pH	pH Units	6.9 - 7.4	7.2	0.24	4	100.0%
TSS	mg/L	4.6 - 77	26	43	4	100.0%
TDS	mg/L	110 - 400	210	155	4	100.0%
Turbidity	NTU	3.9 - 27	15	11	4	100.0%
Nutrients						
Nitrate-N	mg/L	3.3 - 8.7	5.4	2.7	4	100.0%
TKN	mg/L	2.7 - 5.2	4.4	1.4	4	100.0%
TOC	mg/L	19 - 34	28	7.4	4	100.0%
DOC	mg/L	18 - 32	27	7.4	4	100.0%
Phosphorus, Total	mg/L	0.22 - 0.28	0.25	0.032	4	100.0%
Orthophosphate, Dissolved	mg/L	0.13 - 0.2	0.17	0.032	4	100.0%
Metals						
Arsenic, Total	ug/L	2.5 - 5.2	4.2	1.4	4	100.0%
Arsenic, Dissolved	ug/L	1.2 - 1.9	1.6	0.32	4	100.0%
Cadmium, Total	ug/L	<0.2 - 0.32	0.25	0.088	4	75.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.25	--	--	4	50.0%
Chromium, Total	ug/L	1.4 - 2.7	2.2	0.67	4	100.0%
Chromium, Dissolved	ug/L	<1 - 1.5	--	--	4	50.0%
Copper, Total	ug/L	44 - 71	59	13	4	100.0%
Copper, Dissolved	ug/L	39 - 62	51	11	4	100.0%
Lead, Total	ug/L	<1 - 1.6	--	--	4	50.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	4	0.0%
Nickel, Total	ug/L	5.4 - 9.1	7.2	1.8	4	100.0%
Nickel, Dissolved	ug/L	4.2 - 7.6	5.9	1.6	4	100.0%
Zinc, Total	ug/L	120 - 230	155	62	4	100.0%
Zinc, Dissolved	ug/L	97 - 180	134	40	4	100.0%

Table 2.3. 27 Caltrans Site ID 12-324 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	130 - 240	173	55	4	100.0%
Hardness as CaCO3	mg/L	28 - 61	42	21	3	100.0%
pH	pH Units	6.8 - 7	--	--	4	100.0%
TSS	mg/L	2.5 - 8.1	4.2	3.3	4	100.0%
TDS	mg/L	94 - 190	129	51	4	100.0%
Turbidity	NTU	3.8 - 18	9.1	7.4	4	100.0%
Nutrients						
Nitrate-N	mg/L	3.1 - 6.4	4.5	1.6	4	100.0%
TKN	mg/L	2.3 - 5.6	4.6	1.9	4	100.0%
TOC	mg/L	21 - 38	29	7.7	4	100.0%
DOC	mg/L	21 - 37	29	7.2	4	100.0%
Phosphorus, Total	mg/L	0.16 - 0.25	0.2	0.042	4	100.0%
Orthophosphate, Dissolved	mg/L	0.11 - 0.25	0.18	0.064	4	100.0%
Metals						
Arsenic, Total	ug/L	2.2 - 5.6	4.2	1.6	4	100.0%
Arsenic, Dissolved	ug/L	1.5 - 2	1.7	0.3	4	100.0%
Cadmium, Total	ug/L	<0.2 - 0.54	--	--	4	50.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.25	--	--	4	50.0%
Chromium, Total	ug/L	1.3 - 2	1.8	0.39	4	100.0%
Chromium, Dissolved	ug/L	1 - 1.7	1.3	0.34	4	100.0%
Copper, Total	ug/L	40 - 68	56	14	4	100.0%
Copper, Dissolved	ug/L	41 - 69	55	13	4	100.0%
Lead, Total	ug/L	<1 - 1.2	--	--	4	25.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	4	0.0%
Nickel, Total	ug/L	4.5 - 8.5	6.5	1.9	4	100.0%
Nickel, Dissolved	ug/L	4.2 - 8.2	6.3	1.9	4	100.0%
Zinc, Total	ug/L	99 - 200	140	51	4	100.0%
Zinc, Dissolved	ug/L	76 - 220	139	69	4	100.0%

Table 2.3. 28 Caltrans Site ID 12-326 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	170 - 200	--	--	2	100.0%
Hardness as CaCO3	mg/L	57 - 67	--	--	2	100.0%
pH	pH Units	6.2 - 7.2	--	--	2	100.0%
TSS	mg/L	5.2 - 93	--	--	2	100.0%
TDS	mg/L	130 - 190	--	--	2	100.0%
Turbidity	NTU	16 - 57	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	1.7 - 3.6	--	--	2	100.0%
TKN	mg/L	2.3 - 5.2	--	--	2	100.0%
TOC	mg/L	21 - 46	--	--	2	100.0%
DOC	mg/L	23 - 46	--	--	2	100.0%
Phosphorus, Total	mg/L	0.17 - 0.18	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.047 - 0.1	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	1.7 - 3.9	--	--	2	100.0%
Arsenic, Dissolved	ug/L	<1 - 1.4	--	--	2	50.0%
Cadmium, Total	ug/L	0.34 - 0.81	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.26 - 0.34	--	--	2	100.0%
Chromium, Total	ug/L	2.7 - 5.8	--	--	2	100.0%
Chromium, Dissolved	ug/L	2.1 - 2.3	--	--	2	100.0%
Copper, Total	ug/L	44 - 50	--	--	2	100.0%
Copper, Dissolved	ug/L	27 - 45	--	--	2	100.0%
Lead, Total	ug/L	<1 - 4.1	--	--	2	50.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	12 - 13	--	--	2	100.0%
Nickel, Dissolved	ug/L	8.4 - 11	--	--	2	100.0%
Zinc, Total	ug/L	190 - 240	--	--	2	100.0%
Zinc, Dissolved	ug/L	110 - 160	--	--	2	100.0%

Table 2.3. 29 Caltrans Site ID 12-327 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	530 - 790	--	--	2	100.0%
Hardness as CaCO3	mg/L	240 - 350	--	--	2	100.0%
pH	pH Units	6.7 - 7.8	--	--	2	100.0%
TSS	mg/L	1.9 - 4.7	--	--	2	100.0%
TDS	mg/L	380 - 580	--	--	2	100.0%
Turbidity	NTU	2.9 - 9	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	1.2 - 2.3	--	--	2	100.0%
TKN	mg/L	1.7 - 2.1	--	--	2	100.0%
TOC	mg/L	21 - 23	--	--	2	100.0%
DOC	mg/L	19 - 22	--	--	2	100.0%
Phosphorus, Total	mg/L	0.083 - 0.47	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.081 - 0.09	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	2.2 - 4.9	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.7 - 2	--	--	2	100.0%
Cadmium, Total	ug/L	0.31 - 1	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.26 - 0.9	--	--	2	100.0%
Chromium, Total	ug/L	1.1 - 2	--	--	2	100.0%
Chromium, Dissolved	ug/L	1.3 - 1.4	--	--	2	100.0%
Copper, Total	ug/L	12 - 13	--	--	2	100.0%
Copper, Dissolved	ug/L	13 - 13	--	--	2	100.0%
Lead, Total	ug/L	<1 - <1	--	--	2	0.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	7.9 - 10	--	--	2	100.0%
Nickel, Dissolved	ug/L	5.6 - 10	--	--	2	100.0%
Zinc, Total	ug/L	23 - 79	--	--	2	100.0%
Zinc, Dissolved	ug/L	29 - 61	--	--	2	100.0%

Table 2.3. 30 Caltrans Site ID 12-329 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	100 - 510	281	164	9	100.0%
Hardness as CaCO3	mg/L	24 - 130	67	41	9	100.0%
pH	pH Units	5.9 - 7.6	6.8	0.56	9	100.0%
TSS	mg/L	3 - 180	94	76	9	100.0%
TDS	mg/L	49 - 470	217	152	9	100.0%
Turbidity	NTU	21 - 120	71	39	9	100.0%
Nutrients						
Nitrate-N	mg/L	1.2 - 4	2.5	1.1	9	100.0%
TKN	mg/L	3.2 - 12	6.4	3.7	9	100.0%
TOC	mg/L	18 - 110	49	38	9	100.0%
DOC	mg/L	18 - 110	49	38	9	100.0%
Phosphorus, Total	mg/L	0.22 - 0.96	0.48	0.25	9	100.0%
Orthophosphate, Dissolved	mg/L	0.068 - 0.5	0.25	0.16	9	100.0%
Metals						
Arsenic, Total	ug/L	2 - 11	5.8	3.3	9	100.0%
Arsenic, Dissolved	ug/L	<1 - 13	4.5	5.3	9	66.7%
Cadmium, Total	ug/L	0.28 - 2	0.98	0.67	9	100.0%
Cadmium, Dissolved	ug/L	<0.2 - 1.1	0.45	0.39	9	77.8%
Chromium, Total	ug/L	2.3 - 17	10	5.6	9	100.0%
Chromium, Dissolved	ug/L	1.6 - 6.2	3.7	1.7	9	100.0%
Copper, Total	ug/L	64 - 430	204	135	9	100.0%
Copper, Dissolved	ug/L	52 - 250	119	78	9	100.0%
Lead, Total	ug/L	1.2 - 16	9	5.7	9	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	9	0.0%
Nickel, Total	ug/L	8.1 - 59	25	20	9	100.0%
Nickel, Dissolved	ug/L	6.6 - 48	19	17	9	100.0%
Zinc, Total	ug/L	110 - 1300	514	480	9	100.0%
Zinc, Dissolved	ug/L	93 - 810	288	295	9	100.0%

Table 2.3. 31 Caltrans Site ID 12-330 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	320 - 2200	747	694	9	100.0%
Hardness as CaCO3	mg/L	100 - 380	191	90	9	100.0%
pH	pH Units	2.6 - 8.1	6.9	2.1	9	100.0%
TSS	mg/L	3.3 - 76	22	26	9	100.0%
TDS	mg/L	220 - 650	368	135	9	100.0%
Turbidity	NTU	11 - 52	27	14	9	100.0%
Nutrients						
Nitrate-N	mg/L	1.3 - 77	10	36	9	100.0%
TKN	mg/L	1.2 - 11	2.9	4.1	9	100.0%
TOC	mg/L	14 - 110	34	37	9	100.0%
DOC	mg/L	15 - 110	33	38	9	100.0%
Phosphorus, Total	mg/L	0.099 - 0.77	0.27	0.24	9	100.0%
Orthophosphate, Dissolved	mg/L	0.085 - 0.63	0.24	0.19	9	100.0%
Metals						
Arsenic, Total	ug/L	3.5 - 19	9.6	4.8	9	100.0%
Arsenic, Dissolved	ug/L	2.1 - 12	6.9	3.7	9	100.0%
Cadmium, Total	ug/L	<0.2 - 0.5	0.15	0.19	9	33.3%
Cadmium, Dissolved	ug/L	<0.2 - 0.5	--	--	9	11.1%
Chromium, Total	ug/L	1.7 - 9.9	4.2	2.7	9	100.0%
Chromium, Dissolved	ug/L	1.4 - 6.4	3.1	1.6	9	100.0%
Copper, Total	ug/L	29 - 170	54	55	9	100.0%
Copper, Dissolved	ug/L	25 - 160	47	54	9	100.0%
Lead, Total	ug/L	<1 - 5.3	2	1.6	9	77.8%
Lead, Dissolved	ug/L	<1 - 4.3	--	--	9	11.1%
Nickel, Total	ug/L	3.9 - 21	7.2	6.6	9	100.0%
Nickel, Dissolved	ug/L	2.9 - 20	6.3	6.7	9	100.0%
Zinc, Total	ug/L	33 - 170	70	50	9	100.0%
Zinc, Dissolved	ug/L	20 - 170	49	57	9	100.0%

2.4 District 7 Gross Solids Removal Devices

The Gross Solids Removal Device (GSRD) pilot study was initiated to test selected devices that can be incorporated into existing or future highway drainage systems to capture litter and incidental coarse solids retained on a 5 mm opening size screen, designated by the overall term of gross solids. The GSRD pilot study was initiated as a proactive response to the Los Angeles Regional Water Quality Control Board's (RWQCB) adopted trash Total Maximum Daily Load (TMDL) for the Los Angeles River and Ballona Creek.

Although the focus of GSRD monitoring to date has been to determine the GSRDs' efficacy for removal of gross solids, and not water quality constituents in storm water runoff such as nutrients and metals, water quality monitoring was conducted during the 2006-2007 season as part of the Public Education Litter Monitoring Study (PELMS) (CTSW-RT-00-038, December 2000).

This data was generated from grab samples only, not from flow-weighted composite samples.

Table 2.4. 0 District 7 Gross Solids Removal Devices

Site ID	Site Name	Caltrans District	Regional Board	County	Catchment Area (he)
7-300	Phase V @ Orcas - Influent	7	Los Angeles	Los Angeles	Not Reported
7-305	Phase V @ Orcas - Effluent	7	Los Angeles	Los Angeles	Not Reported
7-306	Phase V @ Filmore - Influent	7	Los Angeles	Los Angeles	Not Reported
7-307	Phase V @ Cerritos - Influent	7	Los Angeles	Los Angeles	Not Reported
7-309	Phase V @ Filmore - Effluent	7	Los Angeles	Los Angeles	Not Reported
7-310	Phase V @ Cerritos - Effluent	7	Los Angeles	Los Angeles	Not Reported

Table 2.4. 1 Caltrans Site ID 7-300 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	280 - 280	--	--	1	100.0%
Hardness as CaCO3	mg/L	85 - 85	--	--	1	100.0%
pH	pH Units	6.7 - 6.7	--	--	1	100.0%
TSS	mg/L	58 - 58	--	--	1	100.0%
TDS	mg/L	220 - 220	--	--	1	100.0%
Turbidity	NTU	57 - 57	--	--	1	100.0%
Nutrients						
Nitrate-N	mg/L	15 - 15	--	--	1	100.0%
TKN	mg/L	4.5 - 4.5	--	--	1	100.0%
TOC	mg/L	39 - 39	--	--	1	100.0%
DOC	mg/L	34 - 34	--	--	1	100.0%
Phosphorus, Total	mg/L	0.89 - 0.89	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.44 - 0.44	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	1.9 - 1.9	--	--	1	100.0%
Arsenic, Dissolved	ug/L	1.5 - 1.5	--	--	1	100.0%
Cadmium, Total	ug/L	0.78 - 0.78	--	--	1	100.0%
Cadmium, Dissolved	ug/L	0.37 - 0.37	--	--	1	100.0%
Chromium, Total	ug/L	5.9 - 5.9	--	--	1	100.0%
Chromium, Dissolved	ug/L	2.1 - 2.1	--	--	1	100.0%
Copper, Total	ug/L	54 - 54	--	--	1	100.0%
Copper, Dissolved	ug/L	43 - 43	--	--	1	100.0%
Lead, Total	ug/L	15 - 15	--	--	1	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Nickel, Total	ug/L	8.2 - 8.2	--	--	1	100.0%
Nickel, Dissolved	ug/L	6.3 - 6.3	--	--	1	100.0%
Zinc, Total	ug/L	290 - 290	--	--	1	100.0%
Zinc, Dissolved	ug/L	190 - 190	--	--	1	100.0%

Table 2.4. 2 Caltrans Site ID 7-305 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	240 - 240	--	--	1	100.0%
Hardness as CaCO3	mg/L	82 - 82	--	--	1	100.0%
pH	pH Units	7.2 - 7.2	--	--	1	100.0%
TSS	mg/L	610 - 610	--	--	1	100.0%
TDS	mg/L	220 - 220	--	--	1	100.0%
Turbidity	NTU	840 - 840	--	--	1	100.0%
Nutrients						
Nitrate-N	mg/L	2.3 - 2.3	--	--	1	100.0%
TKN	mg/L	7.5 - 7.5	--	--	1	100.0%
TOC	mg/L	30 - 30	--	--	1	100.0%
DOC	mg/L	30 - 30	--	--	1	100.0%
Phosphorus, Total	mg/L	0.92 - 0.92	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.1 - 0.1	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	42 - 42	--	--	1	100.0%
Arsenic, Dissolved	ug/L	11 - 11	--	--	1	100.0%
Cadmium, Total	ug/L	3.7 - 3.7	--	--	1	100.0%
Cadmium, Dissolved	ug/L	0.23 - 0.23	--	--	1	100.0%
Chromium, Total	ug/L	41 - 41	--	--	1	100.0%
Chromium, Dissolved	ug/L	2.7 - 2.7	--	--	1	100.0%
Copper, Total	ug/L	330 - 330	--	--	1	100.0%
Copper, Dissolved	ug/L	52 - 52	--	--	1	100.0%
Lead, Total	ug/L	920 - 920	--	--	1	100.0%
Lead, Dissolved	ug/L	1.4 - 1.4	--	--	1	100.0%
Nickel, Total	ug/L	45 - 45	--	--	1	100.0%
Nickel, Dissolved	ug/L	8.7 - 8.7	--	--	1	100.0%
Zinc, Total	ug/L	1700 - 1700	--	--	1	100.0%
Zinc, Dissolved	ug/L	110 - 110	--	--	1	100.0%

Table 2.4. 3 Caltrans Site ID 7-306 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	180 - 200	--	--	2	100.0%
Hardness as CaCO3	mg/L	54 - 72	--	--	2	100.0%
pH	pH Units	7 - 7.2	--	--	2	100.0%
TSS	mg/L	75 - 84	--	--	2	100.0%
TDS	mg/L	130 - 150	--	--	2	100.0%
Turbidity	NTU	72 - 100	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	1.7 - 1.9	--	--	2	100.0%
TKN	mg/L	2.5 - 6.9	--	--	2	100.0%
TOC	mg/L	28 - 55	--	--	2	100.0%
DOC	mg/L	25 - 54	--	--	2	100.0%
Phosphorus, Total	mg/L	0.42 - 0.97	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.08 - 0.37	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	2 - 10	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.3 - 7.5	--	--	2	100.0%
Cadmium, Total	ug/L	0.63 - 1.3	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.3 - 0.54	--	--	2	100.0%
Chromium, Total	ug/L	5.7 - 8.6	--	--	2	100.0%
Chromium, Dissolved	ug/L	2.5 - 2.6	--	--	2	100.0%
Copper, Total	ug/L	63 - 87	--	--	2	100.0%
Copper, Dissolved	ug/L	46 - 68	--	--	2	100.0%
Lead, Total	ug/L	31 - 47	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - 1.3	--	--	2	50.0%
Nickel, Total	ug/L	11 - 15	--	--	2	100.0%
Nickel, Dissolved	ug/L	8.2 - 11	--	--	2	100.0%
Zinc, Total	ug/L	470 - 990	--	--	2	100.0%
Zinc, Dissolved	ug/L	300 - 470	--	--	2	100.0%

Table 2.4. 4 Caltrans Site ID 7-307 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	140 - 250	--	--	2	100.0%
Hardness as CaCO3	mg/L	38 - 52	--	--	2	100.0%
pH	pH Units	6.7 - 7.3	--	--	2	100.0%
TSS	mg/L	43 - 560	--	--	2	100.0%
TDS	mg/L	110 - 220	--	--	2	100.0%
Turbidity	NTU	53 - 850	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	2.4 - 2.6	--	--	2	100.0%
TKN	mg/L	4.8 - 4.9	--	--	2	100.0%
TOC	mg/L	33 - 51	--	--	2	100.0%
DOC	mg/L	33 - 55	--	--	2	100.0%
Phosphorus, Total	mg/L	0.32 - 0.86	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.12 - 0.28	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	<1 - 43	--	--	2	50.0%
Arsenic, Dissolved	ug/L	<1 - 10	--	--	2	50.0%
Cadmium, Total	ug/L	0.57 - 3.5	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.21 - 0.45	--	--	2	100.0%
Chromium, Total	ug/L	2.6 - 36	--	--	2	100.0%
Chromium, Dissolved	ug/L	1.9 - 2.3	--	--	2	100.0%
Copper, Total	ug/L	40 - 310	--	--	2	100.0%
Copper, Dissolved	ug/L	40 - 57	--	--	2	100.0%
Lead, Total	ug/L	4.4 - 880	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - 1.4	--	--	2	50.0%
Nickel, Total	ug/L	9.4 - 43	--	--	2	100.0%
Nickel, Dissolved	ug/L	8.3 - 8.7	--	--	2	100.0%
Zinc, Total	ug/L	280 - 1400	--	--	2	100.0%
Zinc, Dissolved	ug/L	120 - 220	--	--	2	100.0%

Table 2.4. 5 Caltrans Site ID 7-309 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	180 - 200	--	--	2	100.0%
Hardness as CaCO3	mg/L	56 - 64	--	--	2	100.0%
pH	pH Units	7.1 - 7.1	--	--	2	100.0%
TSS	mg/L	41 - 75	--	--	2	100.0%
TDS	mg/L	140 - 150	--	--	2	100.0%
Turbidity	NTU	59 - 98	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	1.6 - 1.9	--	--	2	100.0%
TKN	mg/L	2.3 - 5.1	--	--	2	100.0%
TOC	mg/L	26 - 49	--	--	2	100.0%
DOC	mg/L	24 - 48	--	--	2	100.0%
Phosphorus, Total	mg/L	0.27 - 0.79	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.05 - 0.34	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	2 - 11	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.2 - 7.8	--	--	2	100.0%
Cadmium, Total	ug/L	0.9 - 1.2	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.33 - 0.4	--	--	2	100.0%
Chromium, Total	ug/L	8.3 - 10	--	--	2	100.0%
Chromium, Dissolved	ug/L	2.1 - 2.4	--	--	2	100.0%
Copper, Total	ug/L	81 - 89	--	--	2	100.0%
Copper, Dissolved	ug/L	41 - 55	--	--	2	100.0%
Lead, Total	ug/L	29 - 86	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - 1.1	--	--	2	50.0%
Nickel, Total	ug/L	14 - 14	--	--	2	100.0%
Nickel, Dissolved	ug/L	8.2 - 9	--	--	2	100.0%
Zinc, Total	ug/L	440 - 640	--	--	2	100.0%
Zinc, Dissolved	ug/L	220 - 250	--	--	2	100.0%

Table 2.4. 6 Caltrans Site ID 7-310 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	140 - 290	--	--	2	100.0%
Hardness as CaCO3	mg/L	38 - 70	--	--	2	100.0%
pH	pH Units	6.8 - 7.1	--	--	2	100.0%
TSS	mg/L	37 - 120	--	--	2	100.0%
TDS	mg/L	89 - 220	--	--	2	100.0%
Turbidity	NTU	48 - 130	--	--	2	100.0%
Nutrients						
Nitrate-N	mg/L	2.4 - 14	--	--	2	100.0%
TKN	mg/L	4.8 - 6.3	--	--	2	100.0%
TOC	mg/L	40 - 46	--	--	2	100.0%
DOC	mg/L	37 - 51	--	--	2	100.0%
Phosphorus, Total	mg/L	0.38 - 2	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.23 - 0.66	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	<1 - 3.2	--	--	2	50.0%
Arsenic, Dissolved	ug/L	<1 - 1.5	--	--	2	50.0%
Cadmium, Total	ug/L	0.58 - 1.1	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.27 - 0.39	--	--	2	100.0%
Chromium, Total	ug/L	2.7 - 12	--	--	2	100.0%
Chromium, Dissolved	ug/L	1.7 - 2	--	--	2	100.0%
Copper, Total	ug/L	42 - 71	--	--	2	100.0%
Copper, Dissolved	ug/L	44 - 49	--	--	2	100.0%
Lead, Total	ug/L	5 - 36	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	8.9 - 12	--	--	2	100.0%
Nickel, Dissolved	ug/L	5.9 - 10	--	--	2	100.0%
Zinc, Total	ug/L	270 - 390	--	--	2	100.0%
Zinc, Dissolved	ug/L	170 - 210	--	--	2	100.0%

2.5 Roadside Vegetated Treatment Sites (RVTS)

The Roadside Vegetated Treatment Sites (RVTS) Study is a multi-year project to evaluate the effectiveness of existing vegetated side slopes adjacent to freeways in removing contaminants from stormwater runoff. During the 2006/07 monitoring season, the test RVTS consisted of 16 vegetated side slopes located in Sacramento, Redding, Cottonwood, San Rafael, Yorba Linda, and San Onofre, California. Note that two other sites (Irvine and Moreno Valley) were removed from the RVTS program after the 2005/06 season due to planned highway construction activities. Two new sites in District 8, one in Murietta and one in a new Moreno Valley location (referred to as Moreno Valley II), were constructed in spring 2007 and will be included in the 2007/08 monitoring.

The primary objective of the RVTS Study is to determine if the vegetated side slopes which are a part of standard roadway design can be used to treat stormwater runoff as effectively as biofiltration strips specifically engineered for reducing pollutants in runoff. As of the 2006/07 monitoring season, four locations in Northern California and four locations in Southern California have been included in the Study. At each location, concrete channels approximately 30 meters long were constructed to capture highway runoff after it passed through existing vegetated side slopes of varying widths. The quantity and quality of the runoff discharged from each vegetated side slope was compared to that observed at the edge of pavement. The performance of each of the vegetated side slopes was evaluated in terms of (1) the changes in contaminant concentration as the runoff proceeded from the edge of pavement through each vegetated slope, and (2) the load reduction caused by stormwater infiltration into these vegetated slopes.

Table 2.5. 0 Roadside Vegetated Treatment Sites Monitoring Sites

Site ID	Site Name	Caltrans District	Regional Board	County	Catchment Area (he)
11-204	Camp Pendleton 1	11	San Diego	San Diego	0.06
11-205	Camp Pendleton 2	11	San Diego	San Diego	0.06
11-206	Camp Pendleton 3	11	San Diego	San Diego	0.07
11-207	Camp Pendleton 4	11	San Diego	San Diego	0.08
12-225	Yorba Linda 1	12	Santa Ana	Orange	0.09
12-226	Yorba Linda 2	12	Santa Ana	Orange	0.11
12-227	Yorba Linda 3	12	Santa Ana	Orange	0.12
12-228	Yorba Linda 4	12	Santa Ana	Orange	0.11
12-229	Yorba Linda 5	12	Santa Ana	Orange	0.18
2-201	Cottonwood 1	2	Central Valley	Shasta	0.08
2-202	Cottonwood 2	2	Central Valley	Shasta	0.05
2-203	299 1	2	Central Valley	Shasta	0.03
2-204	299 2	2	Central Valley	Shasta	0.04
2-205	299 3	2	Central Valley	Shasta	0.04
2-206	299 4	2	Central Valley	Shasta	0.05
3-213	Sacramento 1	3	Central Valley	Sacramento	0.04
3-214	Sacramento 2	3	Central Valley	Sacramento	0.04
3-215	Sacramento 3	3	Central Valley	Sacramento	0.05
3-216	Sacramento 4	3	Central Valley	Sacramento	0.05
4-213	San Rafael 1	4	San Francisco Bay	Marin	0.13
4-214	San Rafael 2	4	San Francisco Bay	Marin	0.29

Table 2.5. 1 Caltrans Site ID 11-204 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	140 - 190	--	--	2	100.0%
Hardness as CaCO3	mg/L	31 - 300	--	--	2	100.0%
pH	pH Units	7.8 - 8.2	--	--	2	100.0%
TSS	mg/L	76 - 380	--	--	2	100.0%
TDS	mg/L	96 - 150	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	0.16 - 0.38	--	--	2	100.0%
Nitrate-N	mg/L	1.6 - 1.6	--	--	2	100.0%
TKN	mg/L	1.1 - 1.9	--	--	2	100.0%
TOC	mg/L	12 - 21	--	--	2	100.0%
DOC	mg/L	12 - 20	--	--	2	100.0%
Phosphorus, Total	mg/L	0.24 - 0.28	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.06 - 0.1	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	3.3 - 4.1	--	--	2	100.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Cadmium, Total	ug/L	0.81 - 1.8	--	--	2	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	2	0.0%
Chromium, Total	ug/L	9.2 - 18	--	--	2	100.0%
Chromium, Dissolved	ug/L	3.6 - 3.8	--	--	2	100.0%
Copper, Total	ug/L	46 - 99	--	--	2	100.0%
Copper, Dissolved	ug/L	19 - 27	--	--	2	100.0%
Lead, Total	ug/L	63 - 240	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	7.3 - 16	--	--	2	100.0%
Nickel, Dissolved	ug/L	3 - 4.2	--	--	2	100.0%
Zinc, Total	ug/L	180 - 410	--	--	2	100.0%
Zinc, Dissolved	ug/L	14 - 27	--	--	2	100.0%

Table 2.5. 2 Caltrans Site ID 11-205 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	210 - 270	--	--	2	100.0%
Hardness as CaCO3	mg/L	35 - 47	--	--	2	100.0%
pH	pH Units	7.4 - 8.2	--	--	2	100.0%
TSS	mg/L	19 - 67	--	--	2	100.0%
TDS	mg/L	170 - 180	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	<0.15 - 0.26	--	--	2	50.0%
Nitrate-N	mg/L	1.1 - 2.2	--	--	2	100.0%
TKN	mg/L	1.7 - 2.1	--	--	2	100.0%
TOC	mg/L	23 - 28	--	--	2	100.0%
DOC	mg/L	24 - 25	--	--	2	100.0%
Phosphorus, Total	mg/L	0.73 - 1	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.63 - 0.83	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	2.6 - 4.9	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.7 - 1.8	--	--	2	100.0%
Cadmium, Total	ug/L	0.33 - 0.5	--	--	2	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	2	0.0%
Chromium, Total	ug/L	7.2 - 8.8	--	--	2	100.0%
Chromium, Dissolved	ug/L	4.4 - 4.7	--	--	2	100.0%
Copper, Total	ug/L	40 - 47	--	--	2	100.0%
Copper, Dissolved	ug/L	34 - 38	--	--	2	100.0%
Lead, Total	ug/L	20 - 74	--	--	2	100.0%
Lead, Dissolved	ug/L	1.9 - 2.2	--	--	2	100.0%
Nickel, Total	ug/L	5.6 - 6.5	--	--	2	100.0%
Nickel, Dissolved	ug/L	3.5 - 3.8	--	--	2	100.0%
Zinc, Total	ug/L	70 - 120	--	--	2	100.0%
Zinc, Dissolved	ug/L	37 - 54	--	--	2	100.0%

Table 2.5. 3 Caltrans Site ID 11-206 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	160 - 160	--	--	1	100.0%
Hardness as CaCO3	mg/L	21 - 21	--	--	1	100.0%
pH	pH Units	7.4 - 7.4	--	--	1	100.0%
TSS	mg/L	31 - 31	--	--	1	100.0%
TDS	mg/L	160 - 160	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	0.18 - 0.18	--	--	1	100.0%
Nitrate-N	mg/L	1.5 - 1.5	--	--	1	100.0%
TKN	mg/L	1.5 - 1.5	--	--	1	100.0%
TOC	mg/L	21 - 21	--	--	1	100.0%
DOC	mg/L	18 - 18	--	--	1	100.0%
Phosphorus, Total	mg/L	0.61 - 0.61	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.5 - 0.5	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	4.2 - 4.2	--	--	1	100.0%
Arsenic, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Cadmium, Total	ug/L	0.29 - 0.29	--	--	1	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	1	0.0%
Chromium, Total	ug/L	7.5 - 7.5	--	--	1	100.0%
Chromium, Dissolved	ug/L	4 - 4	--	--	1	100.0%
Copper, Total	ug/L	29 - 29	--	--	1	100.0%
Copper, Dissolved	ug/L	21 - 21	--	--	1	100.0%
Lead, Total	ug/L	20 - 20	--	--	1	100.0%
Lead, Dissolved	ug/L	1.2 - 1.2	--	--	1	100.0%
Nickel, Total	ug/L	4.6 - 4.6	--	--	1	100.0%
Nickel, Dissolved	ug/L	2.5 - 2.5	--	--	1	100.0%
Zinc, Total	ug/L	74 - 74	--	--	1	100.0%
Zinc, Dissolved	ug/L	27 - 27	--	--	1	100.0%

Table 2.5. 4 Caltrans Site ID 11-207 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	210 - 300	--	--	2	100.0%
Hardness as CaCO3	mg/L	14 - 25	--	--	2	100.0%
pH	pH Units	7.6 - 8	--	--	2	100.0%
TSS	mg/L	81 - 120	--	--	2	100.0%
TDS	mg/L	120 - 200	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	0.3 - 0.55	--	--	2	100.0%
Nitrate-N	mg/L	1.9 - 2.3	--	--	2	100.0%
TKN	mg/L	3 - 3.6	--	--	2	100.0%
TOC	mg/L	21 - 26	--	--	2	100.0%
DOC	mg/L	19 - 27	--	--	2	100.0%
Phosphorus, Total	mg/L	0.93 - 1.1	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.68 - 0.77	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	2 - 4.2	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.1 - 1.6	--	--	2	100.0%
Cadmium, Total	ug/L	0.63 - 0.79	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.23 - 0.24	--	--	2	100.0%
Chromium, Total	ug/L	3.4 - 3.7	--	--	2	100.0%
Chromium, Dissolved	ug/L	1.5 - 1.6	--	--	2	100.0%
Copper, Total	ug/L	19 - 35	--	--	2	100.0%
Copper, Dissolved	ug/L	17 - 29	--	--	2	100.0%
Lead, Total	ug/L	6.9 - 11	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	2.6 - 3.5	--	--	2	100.0%
Nickel, Dissolved	ug/L	<2 - 2.1	--	--	2	50.0%
Zinc, Total	ug/L	49 - 94	--	--	2	100.0%
Zinc, Dissolved	ug/L	13 - 40	--	--	2	100.0%

Table 2.5. 5 Caltrans Site ID 12-225 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	200 - 220	--	--	2	100.0%
Hardness as CaCO3	mg/L	46 - 61	--	--	2	100.0%
pH	pH Units	6.8 - 7.6	--	--	2	100.0%
TSS	mg/L	95 - 98	--	--	2	100.0%
TDS	mg/L	130 - 180	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	1.2 - 1.7	--	--	2	100.0%
Nitrate-N	mg/L	1.9 - 2	--	--	2	100.0%
TKN	mg/L	2.5 - 3.5	--	--	2	100.0%
TOC	mg/L	28 - 53	--	--	2	100.0%
DOC	mg/L	27 - 54	--	--	2	100.0%
Phosphorus, Total	mg/L	0.23 - 0.67	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.17 - 0.4	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	3.3 - 4.5	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.5 - 2	--	--	2	100.0%
Cadmium, Total	ug/L	0.64 - 0.86	--	--	2	100.0%
Cadmium, Dissolved	ug/L	0.24 - 0.32	--	--	2	100.0%
Chromium, Total	ug/L	9.1 - 11	--	--	2	100.0%
Chromium, Dissolved	ug/L	3.7 - 6.2	--	--	2	100.0%
Copper, Total	ug/L	60 - 89	--	--	2	100.0%
Copper, Dissolved	ug/L	37 - 58	--	--	2	100.0%
Lead, Total	ug/L	30 - 40	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	2	0.0%
Nickel, Total	ug/L	11 - 21	--	--	2	100.0%
Nickel, Dissolved	ug/L	8.6 - 15	--	--	2	100.0%
Zinc, Total	ug/L	410 - 910	--	--	2	100.0%
Zinc, Dissolved	ug/L	210 - 430	--	--	2	100.0%

Table 2.5. 6 Caltrans Site ID 12-226 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	160 - 200	--	--	2	100.0%
Hardness as CaCO3	mg/L	44 - 47	--	--	2	100.0%
pH	pH Units	7.4 - 7.5	--	--	2	100.0%
TSS	mg/L	51 - 100	--	--	2	100.0%
TDS	mg/L	110 - 150	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	<0.15 - 0.64	--	--	2	50.0%
Nitrate-N	mg/L	2 - 3.2	--	--	2	100.0%
TKN	mg/L	2 - 2.8	--	--	2	100.0%
TOC	mg/L	24 - 30	--	--	2	100.0%
DOC	mg/L	23 - 31	--	--	2	100.0%
Phosphorus, Total	mg/L	0.41 - 0.78	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.33 - 0.46	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	2.7 - 4.4	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.3 - 1.8	--	--	2	100.0%
Cadmium, Total	ug/L	0.44 - 0.45	--	--	2	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	2	0.0%
Chromium, Total	ug/L	7.3 - 8.3	--	--	2	100.0%
Chromium, Dissolved	ug/L	2.8 - 4	--	--	2	100.0%
Copper, Total	ug/L	48 - 52	--	--	2	100.0%
Copper, Dissolved	ug/L	29 - 35	--	--	2	100.0%
Lead, Total	ug/L	27 - 28	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - 1.8	--	--	2	50.0%
Nickel, Total	ug/L	7.4 - 8.9	--	--	2	100.0%
Nickel, Dissolved	ug/L	4.9 - 5.1	--	--	2	100.0%
Zinc, Total	ug/L	110 - 160	--	--	2	100.0%
Zinc, Dissolved	ug/L	36 - 54	--	--	2	100.0%

Table 2.5. 7 Caltrans Site ID 12-227 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	200 - 340	--	--	2	100.0%
Hardness as CaCO3	mg/L	40 - 60	--	--	2	100.0%
pH	pH Units	7.4 - 7.4	--	--	2	100.0%
TSS	mg/L	52 - 98	--	--	2	100.0%
TDS	mg/L	160 - 240	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	1 - 1.1	--	--	2	100.0%
Nitrate-N	mg/L	1.7 - 3	--	--	2	100.0%
TKN	mg/L	2.7 - 5.1	--	--	2	100.0%
TOC	mg/L	34 - 43	--	--	2	100.0%
DOC	mg/L	32 - 43	--	--	2	100.0%
Phosphorus, Total	mg/L	0.71 - 1.7	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.6 - 1.1	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	4.4 - 4.9	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.6 - 3.6	--	--	2	100.0%
Cadmium, Total	ug/L	0.38 - 0.41	--	--	2	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	2	0.0%
Chromium, Total	ug/L	7.6 - 8.3	--	--	2	100.0%
Chromium, Dissolved	ug/L	3.3 - 5.8	--	--	2	100.0%
Copper, Total	ug/L	43 - 45	--	--	2	100.0%
Copper, Dissolved	ug/L	30 - 51	--	--	2	100.0%
Lead, Total	ug/L	17 - 26	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - 2.5	--	--	2	50.0%
Nickel, Total	ug/L	7.4 - 8.3	--	--	2	100.0%
Nickel, Dissolved	ug/L	4.9 - 12	--	--	2	100.0%
Zinc, Total	ug/L	98 - 170	--	--	2	100.0%
Zinc, Dissolved	ug/L	31 - 120	--	--	2	100.0%

Table 2.5. 8 Caltrans Site ID 12-228 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	160 - 250	--	--	2	100.0%
Hardness as CaCO3	mg/L	23 - 35	--	--	2	100.0%
pH	pH Units	7.5 - 7.6	--	--	2	100.0%
TSS	mg/L	110 - 160	--	--	2	100.0%
TDS	mg/L	96 - 170	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	<0.15 - <0.15	--	--	1	0.0%
Nitrate-N	mg/L	1.9 - 3.2	--	--	2	100.0%
TKN	mg/L	5.6 - 5.6	--	--	1	100.0%
TOC	mg/L	25 - 37	--	--	2	100.0%
DOC	mg/L	24 - 36	--	--	2	100.0%
Phosphorus, Total	mg/L	1.6 - 1.6	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	1.1 - 1.1	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	2.9 - 5.2	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.6 - 2.3	--	--	2	100.0%
Cadmium, Total	ug/L	0.3 - 0.5	--	--	2	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	2	0.0%
Chromium, Total	ug/L	7.1 - 11	--	--	2	100.0%
Chromium, Dissolved	ug/L	2.6 - 3.8	--	--	2	100.0%
Copper, Total	ug/L	23 - 61	--	--	2	100.0%
Copper, Dissolved	ug/L	21 - 26	--	--	2	100.0%
Lead, Total	ug/L	8.9 - 24	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - 1.1	--	--	2	50.0%
Nickel, Total	ug/L	7 - 8.7	--	--	2	100.0%
Nickel, Dissolved	ug/L	3.6 - 5.3	--	--	2	100.0%
Zinc, Total	ug/L	92 - 270	--	--	2	100.0%
Zinc, Dissolved	ug/L	44 - 45	--	--	2	100.0%

Table 2.5. 9 Caltrans Site ID 12-229 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	320 - 320	--	--	1	100.0%
Hardness as CaCO3	mg/L	37 - 37	--	--	1	100.0%
pH	pH Units	8.1 - 8.1	--	--	1	100.0%
TSS	mg/L	20 - 20	--	--	1	100.0%
TDS	mg/L	200 - 200	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	0.62 - 0.62	--	--	1	100.0%
Nitrate-N	mg/L	4 - 4	--	--	1	100.0%
TKN	mg/L	3.8 - 3.8	--	--	1	100.0%
TOC	mg/L	39 - 39	--	--	1	100.0%
DOC	mg/L	38 - 38	--	--	1	100.0%
Phosphorus, Total	mg/L	1.9 - 1.9	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	1.8 - 1.8	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	6.3 - 6.3	--	--	1	100.0%
Arsenic, Dissolved	ug/L	3.8 - 3.8	--	--	1	100.0%
Cadmium, Total	ug/L	2.4 - 2.4	--	--	1	100.0%
Cadmium, Dissolved	ug/L	1.9 - 1.9	--	--	1	100.0%
Chromium, Total	ug/L	4.1 - 4.1	--	--	1	100.0%
Chromium, Dissolved	ug/L	4 - 4	--	--	1	100.0%
Copper, Total	ug/L	29 - 29	--	--	1	100.0%
Copper, Dissolved	ug/L	28 - 28	--	--	1	100.0%
Lead, Total	ug/L	2.2 - 2.2	--	--	1	100.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	1	0.0%
Nickel, Total	ug/L	7.6 - 7.6	--	--	1	100.0%
Nickel, Dissolved	ug/L	7.5 - 7.5	--	--	1	100.0%
Zinc, Total	ug/L	40 - 40	--	--	1	100.0%
Zinc, Dissolved	ug/L	36 - 36	--	--	1	100.0%

Table 2.5. 10 Caltrans Site ID 2-201 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	54 - 212	107	65	6	100.0%
Hardness as CaCO3	mg/L	16 - 62	33	18	7	100.0%
pH	pH Units	6 - 7.5	6.8	0.69	6	100.0%
TSS	mg/L	<1 - 124	42	46	7	85.7%
TDS	mg/L	<1 - 124	52	41	7	85.7%
Nutrients						
Ammonia-N	mg/L	0.35 - 1.5	1	0.43	7	100.0%
Nitrate-N	mg/L	0.27 - 2.1	0.84	0.72	7	100.0%
TKN	mg/L	0.76 - 4.7	2.6	1.7	7	100.0%
TOC	mg/L	10 - 46	22	15	7	100.0%
DOC	mg/L	6.7 - 38	17	12	7	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.23	0.11	0.087	7	71.4%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.28	0.096	0.1	7	57.1%
Metals						
Arsenic, Total	ug/L	0.6 - 1.8	0.94	0.48	7	100.0%
Arsenic, Dissolved	ug/L	0.5 - 1	0.69	0.19	7	100.0%
Cadmium, Total	ug/L	<0.2 - 1	0.44	0.33	7	85.7%
Cadmium, Dissolved	ug/L	<0.2 - 0.5	0.26	0.15	7	71.4%
Chromium, Total	ug/L	3 - 9.4	5.2	2.4	7	100.0%
Chromium, Dissolved	ug/L	<1 - 3	2.1	0.79	7	85.7%
Copper, Total	ug/L	18 - 56	32	15	7	100.0%
Copper, Dissolved	ug/L	9.6 - 45	21	14	7	100.0%
Iron, Total	ug/L	1030 - 4640	2540	1223	7	100.0%
Iron, Dissolved	ug/L	130 - 1660	516	632	7	100.0%
Lead, Total	ug/L	2.6 - 9.4	4.6	2.7	7	100.0%
Lead, Dissolved	ug/L	<1 - 2.9	1.8	1.2	7	57.1%
Nickel, Total	ug/L	4.2 - 13	7	3.3	7	100.0%
Nickel, Dissolved	ug/L	<2 - 5.7	3.8	1.7	7	85.7%
Zinc, Total	ug/L	42 - 220	101	67	7	100.0%
Zinc, Dissolved	ug/L	23 - 120	61	40	7	100.0%

Table 2.5. 11 Caltrans Site ID 2-202 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	62 - 241	142	66	6	100.0%
Hardness as CaCO3	mg/L	26 - 84	52	20	7	100.0%
pH	pH Units	6.1 - 7.8	7.1	0.79	6	100.0%
TSS	mg/L	4 - 43	25	14	7	100.0%
TDS	mg/L	8 - 258	90	94	7	100.0%
Nutrients						
Ammonia-N	mg/L	0.14 - 1.9	0.63	0.7	7	100.0%
Nitrate-N	mg/L	0.51 - 3.6	1.5	1.3	7	100.0%
TKN	mg/L	0.97 - 7.3	2.6	2.6	7	100.0%
TOC	mg/L	19 - 133	39	56	7	100.0%
DOC	mg/L	15 - 117	35	49	7	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.54	0.18	0.2	7	71.4%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.76	0.22	0.3	7	71.4%
Metals						
Arsenic, Total	ug/L	0.5 - 1.5	0.83	0.45	7	100.0%
Arsenic, Dissolved	ug/L	<0.5 - 1.3	0.64	0.38	7	85.7%
Cadmium, Total	ug/L	<0.2 - 1.1	0.5	0.4	7	85.7%
Cadmium, Dissolved	ug/L	<0.2 - 0.8	0.29	0.33	7	57.1%
Chromium, Total	ug/L	1.4 - 20	6.2	7.6	7	100.0%
Chromium, Dissolved	ug/L	<1 - 9	2.8	3.4	7	85.7%
Copper, Total	ug/L	4.7 - 20	11	6	7	100.0%
Copper, Dissolved	ug/L	3.2 - 15	8	4.7	7	100.0%
Iron, Total	ug/L	140 - 15400	2821	7597	7	100.0%
Iron, Dissolved	ug/L	40 - 9950	1637	5070	7	100.0%
Lead, Total	ug/L	<1 - 5.3	1.8	2	7	71.4%
Lead, Dissolved	ug/L	<1 - 4.3	--	--	7	28.6%
Nickel, Total	ug/L	<2 - 19	8.2	7.4	7	85.7%
Nickel, Dissolved	ug/L	<2 - 11	4.8	3.8	7	85.7%
Zinc, Total	ug/L	27 - 150	53	55	7	100.0%
Zinc, Dissolved	ug/L	11 - 110	35	43	7	100.0%

Table 2.5. 12 Caltrans Site ID 2-203 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	17 - 105	57	31	6	100.0%
Hardness as CaCO3	mg/L	6 - 46	16	15	8	100.0%
pH	pH Units	5.2 - 7.3	6.5	0.81	7	100.0%
TSS	mg/L	2 - 28	17	8.7	8	100.0%
TDS	mg/L	10 - 83	44	28	8	100.0%
Nutrients						
Ammonia-N	mg/L	0.17 - 1.1	0.57	0.38	8	100.0%
Nitrate-N	mg/L	0.19 - 7.1	1.2	3.3	8	100.0%
TKN	mg/L	0.41 - 3.7	1.6	1.1	8	100.0%
TOC	mg/L	4 - 78	26	31	8	100.0%
DOC	mg/L	3.7 - 61	19	22	8	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.06	0.047	0.013	8	62.5%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.095	0.032	0.033	8	50.0%
Metals						
Arsenic, Total	ug/L	<0.5 - 0.8	--	--	8	12.5%
Arsenic, Dissolved	ug/L	<0.5 - 0.5	--	--	8	12.5%
Cadmium, Total	ug/L	<0.2 - 0.8	0.31	0.26	8	75.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.6	0.21	0.21	8	50.0%
Chromium, Total	ug/L	<1 - 6.8	1.9	2.5	8	75.0%
Chromium, Dissolved	ug/L	<1 - 1.6	--	--	8	25.0%
Copper, Total	ug/L	3.2 - 26	8.3	9.1	8	100.0%
Copper, Dissolved	ug/L	1.4 - 21	6.5	7.5	8	100.0%
Iron, Total	ug/L	140 - 1030	501	314	8	100.0%
Iron, Dissolved	ug/L	30 - 420	129	148	8	100.0%
Lead, Total	ug/L	<1 - 2.4	1.1	0.83	8	50.0%
Lead, Dissolved	ug/L	<1 - <1	--	--	8	0.0%
Nickel, Total	ug/L	<2 - 15	5.8	4.8	8	75.0%
Nickel, Dissolved	ug/L	<2 - 12	3.3	4.4	8	62.5%
Zinc, Total	ug/L	16 - 130	40	46	8	100.0%
Zinc, Dissolved	ug/L	8.4 - 130	34	51	8	100.0%

Table 2.5. 13 Caltrans Site ID 2-204 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	71 - 154	106	30	7	100.0%
Hardness as CaCO3	mg/L	28 - 106	50	40	5	100.0%
pH	pH Units	6.4 - 7.9	7.3	0.66	7	100.0%
TSS	mg/L	<1 - 25	8.5	12	5	80.0%
TDS	mg/L	80 - 196	112	62	5	100.0%
Nutrients						
Ammonia-N	mg/L	0.17 - 1.2	0.43	0.55	5	100.0%
Nitrate-N	mg/L	<0.1 - 5	0.93	2.1	8	75.0%
TKN	mg/L	0.66 - 5.2	2.2	2.1	5	100.0%
TOC	mg/L	18 - 71	35	25	5	100.0%
DOC	mg/L	16 - 68	32	25	5	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.41	0.17	0.17	5	80.0%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.48	0.13	0.18	8	75.0%
Metals						
Arsenic, Total	ug/L	<0.5 - 1.1	--	--	5	40.0%
Arsenic, Dissolved	ug/L	<0.5 - 0.8	--	--	5	40.0%
Cadmium, Total	ug/L	<0.2 - 6.4	2.6	2.9	5	80.0%
Cadmium, Dissolved	ug/L	<0.2 - 5	2.1	2.1	5	60.0%
Chromium, Total	ug/L	<1 - 2.2	1.4	0.64	5	80.0%
Chromium, Dissolved	ug/L	<1 - 1.8	--	--	5	40.0%
Copper, Total	ug/L	4.4 - 20	9.3	7.4	5	100.0%
Copper, Dissolved	ug/L	3.6 - 15	7	5.6	5	100.0%
Iron, Total	ug/L	90 - 5150	1416	2686	5	100.0%
Iron, Dissolved	ug/L	40 - 4610	1014	2816	5	100.0%
Lead, Total	ug/L	<1 - 11	2.7	6.2	5	60.0%
Lead, Dissolved	ug/L	<1 - 8.4	--	--	5	20.0%
Nickel, Total	ug/L	2 - 8.4	5.3	2.6	5	100.0%
Nickel, Dissolved	ug/L	<2 - 5.6	3.1	1.8	5	80.0%
Zinc, Total	ug/L	13 - 94	44	35	5	100.0%
Zinc, Dissolved	ug/L	5.9 - 82	27	40	5	100.0%

Table 2.5. 14 Caltrans Site ID 2-205 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	43 - 237	106	76	7	100.0%
Hardness as CaCO3	mg/L	16 - 48	30	12	8	100.0%
pH	pH Units	6.2 - 7.9	7.2	0.67	7	100.0%
TSS	mg/L	<1 - 25	13	9	8	87.5%
TDS	mg/L	24 - 188	85	58	8	100.0%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.76	0.35	0.22	8	87.5%
Nitrate-N	mg/L	<0.1 - 4.6	0.89	2	8	75.0%
TKN	mg/L	0.76 - 4.3	1.8	1.3	8	100.0%
TOC	mg/L	12 - 83	28	28	8	100.0%
DOC	mg/L	11 - 77	26	26	8	100.0%
Phosphorus, Total	mg/L	<0.03 - 0.42	0.19	0.15	8	87.5%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.27	0.11	0.1	8	75.0%
Metals						
Arsenic, Total	ug/L	<0.5 - 1.2	0.37	0.47	8	37.5%
Arsenic, Dissolved	ug/L	<0.5 - 0.6	--	--	8	37.5%
Cadmium, Total	ug/L	0.2 - 3.4	1.4	1.3	8	100.0%
Cadmium, Dissolved	ug/L	0.2 - 3.1	1.1	1.2	8	100.0%
Chromium, Total	ug/L	<1 - 2.9	1.4	0.88	8	75.0%
Chromium, Dissolved	ug/L	<1 - 2.2	0.82	0.81	8	37.5%
Copper, Total	ug/L	2.3 - 90	18	39	8	100.0%
Copper, Dissolved	ug/L	1.3 - 8.2	4.5	2.6	8	100.0%
Iron, Total	ug/L	120 - 1060	415	337	8	100.0%
Iron, Dissolved	ug/L	30 - 530	156	193	8	100.0%
Lead, Total	ug/L	<1 - 3.4	1.4	1.2	8	62.5%
Lead, Dissolved	ug/L	<1 - 2.2	--	--	8	25.0%
Nickel, Total	ug/L	<2 - 7.3	3.5	2.2	8	62.5%
Nickel, Dissolved	ug/L	<2 - 5	2.5	1.4	8	62.5%
Zinc, Total	ug/L	9.9 - 60	30	19	8	100.0%
Zinc, Dissolved	ug/L	7.3 - 34	15	9.7	8	100.0%

Table 2.5. 15 Caltrans Site ID 2-206 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	46 - 144	79	40	6	100.0%
Hardness as CaCO3	mg/L	18 - 52	33	12	6	100.0%
pH	pH Units	6.1 - 8	7.3	0.73	7	100.0%
TSS	mg/L	<1 - 12	7.2	4.6	6	83.3%
TDS	mg/L	<1 - 144	72	49	6	83.3%
Nutrients						
Ammonia-N	mg/L	<0.1 - 0.39	0.15	0.16	6	83.3%
Nitrate-N	mg/L	<0.1 - 1.1	0.45	0.36	8	87.5%
TKN	mg/L	0.73 - 1.4	1.1	0.32	6	100.0%
TOC	mg/L	13 - 25	18	4.9	6	100.0%
DOC	mg/L	12 - 23	17	4.6	6	100.0%
Phosphorus, Total	mg/L	0.05 - 0.15	0.088	0.04	6	100.0%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.31	0.12	0.12	8	75.0%
Metals						
Arsenic, Total	ug/L	<0.5 - 0.7	--	--	6	66.7%
Arsenic, Dissolved	ug/L	<0.5 - 0.5	--	--	6	33.3%
Cadmium, Total	ug/L	<0.2 - 0.8	0.4	0.29	6	83.3%
Cadmium, Dissolved	ug/L	<0.2 - 0.5	0.31	0.22	6	66.7%
Chromium, Total	ug/L	<1 - 2.2	1.2	0.69	6	66.7%
Chromium, Dissolved	ug/L	<1 - 1.6	--	--	6	50.0%
Copper, Total	ug/L	4.2 - 6.4	5.1	1	6	100.0%
Copper, Dissolved	ug/L	3.2 - 6.2	4.4	1.4	6	100.0%
Iron, Total	ug/L	410 - 1830	984	505	7	100.0%
Iron, Dissolved	ug/L	130 - 1280	540	483	7	100.0%
Lead, Total	ug/L	<1 - 2.4	--	--	7	14.3%
Lead, Dissolved	ug/L	<1 - 1	--	--	7	14.3%
Nickel, Total	ug/L	<2 - 5.9	3.3	1.7	7	71.4%
Nickel, Dissolved	ug/L	<2 - 4	2.6	0.91	7	42.9%
Zinc, Total	ug/L	10 - 14	12	1.8	7	100.0%
Zinc, Dissolved	ug/L	<5 - 14	8	3.9	7	85.7%

Table 2.5. 16 Caltrans Site ID 3-213 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	90 - 208	132	53	5	100.0%
Hardness as CaCO3	mg/L	30 - 46	37	7.1	5	100.0%
pH	pH Units	6.1 - 7	6.5	0.42	5	100.0%
TSS	mg/L	11 - 98	56	35	5	100.0%
TDS	mg/L	28 - 196	91	73	5	100.0%
Nutrients						
Ammonia-N	mg/L	0.33 - 3.3	1.2	1.5	5	100.0%
Nitrate-N	mg/L	0.32 - 1.9	0.89	0.69	5	100.0%
TKN	mg/L	1.1 - 4.9	2.4	1.7	5	100.0%
TOC	mg/L	3.8 - 25	15	8.4	5	100.0%
DOC	mg/L	3.6 - 19	12	6.4	5	100.0%
Phosphorus, Total	mg/L	0.12 - 1.4	0.52	0.6	5	100.0%
Orthophosphate, Dissolved	mg/L	<0.03 - 1.2	0.35	0.6	5	80.0%
Metals						
Arsenic, Total	ug/L	1.7 - 2.5	2.1	0.39	5	100.0%
Arsenic, Dissolved	ug/L	1.2 - 1.8	1.6	0.31	5	100.0%
Cadmium, Total	ug/L	0.2 - 0.8	0.56	0.27	5	100.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	5	60.0%
Chromium, Total	ug/L	3.8 - 14	8.7	4.1	5	100.0%
Chromium, Dissolved	ug/L	1.7 - 2.7	2.3	0.44	5	100.0%
Copper, Total	ug/L	15 - 43	33	13	5	100.0%
Copper, Dissolved	ug/L	12 - 14	13	0.97	5	100.0%
Lead, Total	ug/L	1.6 - 11	6.6	3.9	5	100.0%
Lead, Dissolved	ug/L	<1 - 1.3	1.1	0.18	5	80.0%
Nickel, Total	ug/L	4.4 - 15	8.5	4.5	5	100.0%
Nickel, Dissolved	ug/L	<2 - 4.9	2.7	1.6	5	80.0%
Zinc, Total	ug/L	33 - 160	105	54	5	100.0%
Zinc, Dissolved	ug/L	17 - 43	27	11	5	100.0%

Table 2.5. 17 Caltrans Site ID 3-214 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	84 - 120	--	--	2	100.0%
Hardness as CaCO3	mg/L	36 - 38	--	--	2	100.0%
pH	pH Units	5.7 - 6.3	--	--	2	100.0%
TSS	mg/L	10 - 32	--	--	2	100.0%
TDS	mg/L	48 - 64	--	--	2	100.0%
Nutrients						
Ammonia-N	mg/L	0.39 - 0.89	--	--	2	100.0%
Nitrate-N	mg/L	0.7 - 0.78	--	--	2	100.0%
TKN	mg/L	0.99 - 1.6	--	--	2	100.0%
TOC	mg/L	4 - 17	--	--	2	100.0%
DOC	mg/L	3.7 - 15	--	--	2	100.0%
Phosphorus, Total	mg/L	0.52 - 0.54	--	--	2	100.0%
Orthophosphate, Dissolved	mg/L	0.37 - 0.46	--	--	2	100.0%
Metals						
Arsenic, Total	ug/L	2.1 - 2.6	--	--	2	100.0%
Arsenic, Dissolved	ug/L	1.7 - 2	--	--	2	100.0%
Cadmium, Total	ug/L	<0.2 - 0.4	--	--	2	50.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	2	0.0%
Chromium, Total	ug/L	1.7 - 6.6	--	--	2	100.0%
Chromium, Dissolved	ug/L	1.1 - 1.9	--	--	2	100.0%
Copper, Total	ug/L	12 - 33	--	--	2	100.0%
Copper, Dissolved	ug/L	11 - 17	--	--	2	100.0%
Lead, Total	ug/L	1.4 - 5.3	--	--	2	100.0%
Lead, Dissolved	ug/L	<1 - 1.1	--	--	2	50.0%
Nickel, Total	ug/L	5.1 - 6.2	--	--	2	100.0%
Nickel, Dissolved	ug/L	2.2 - 3.2	--	--	2	100.0%
Zinc, Total	ug/L	27 - 84	--	--	2	100.0%
Zinc, Dissolved	ug/L	16 - 25	--	--	2	100.0%

Table 2.5. 18 Caltrans Site ID 3-215 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	84 - 137	117	36	3	100.0%
Hardness as CaCO3	mg/L	26 - 46	--	--	3	100.0%
pH	pH Units	6 - 6.7	6.3	0.39	3	100.0%
TSS	mg/L	23 - 51	40	19	3	100.0%
TDS	mg/L	54 - 136	94	46	3	100.0%
Nutrients						
Ammonia-N	mg/L	0.29 - 0.55	0.43	0.15	3	100.0%
Nitrate-N	mg/L	0.92 - 1.5	1.1	0.42	3	100.0%
TKN	mg/L	1.2 - 1.8	1.5	0.38	3	100.0%
TOC	mg/L	4.5 - 21	15	11	3	100.0%
DOC	mg/L	3.6 - 18	13	10	3	100.0%
Phosphorus, Total	mg/L	0.46 - 0.93	0.72	0.28	3	100.0%
Orthophosphate, Dissolved	mg/L	0.09 - 0.8	0.53	0.48	3	100.0%
Metals						
Arsenic, Total	ug/L	2.5 - 3.8	3.2	0.73	3	100.0%
Arsenic, Dissolved	ug/L	2.4 - 2.8	2.6	0.25	3	100.0%
Cadmium, Total	ug/L	<0.2 - 0.3	--	--	3	66.7%
Cadmium, Dissolved	ug/L	<0.2 - 0.2	--	--	3	33.3%
Chromium, Total	ug/L	2.3 - 9.6	6.5	4.4	3	100.0%
Chromium, Dissolved	ug/L	1.7 - 4.1	2.6	1.7	3	100.0%
Copper, Total	ug/L	8.9 - 25	18	10	3	100.0%
Copper, Dissolved	ug/L	7.9 - 13	11	3.3	3	100.0%
Lead, Total	ug/L	1 - 4.7	3.4	2.7	3	100.0%
Lead, Dissolved	ug/L	<1 - 1.5	--	--	3	33.3%
Nickel, Total	ug/L	3.6 - 8.6	6.4	2.9	3	100.0%
Nickel, Dissolved	ug/L	2.1 - 3.6	2.7	0.92	3	100.0%
Zinc, Total	ug/L	26 - 70	54	32	3	100.0%
Zinc, Dissolved	ug/L	15 - 39	24	17	3	100.0%

Table 2.5. 19 Caltrans Site ID 3-216 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	178 - 178	--	--	1	100.0%
Hardness as CaCO3	mg/L	56 - 56	--	--	1	100.0%
pH	pH Units	6.4 - 6.4	--	--	1	100.0%
TSS	mg/L	141 - 141	--	--	1	100.0%
TDS	mg/L	160 - 160	--	--	1	100.0%
Nutrients						
Ammonia-N	mg/L	0.31 - 0.31	--	--	1	100.0%
Nitrate-N	mg/L	0.97 - 0.97	--	--	1	100.0%
TKN	mg/L	1.8 - 1.8	--	--	1	100.0%
TOC	mg/L	26 - 26	--	--	1	100.0%
DOC	mg/L	25 - 25	--	--	1	100.0%
Phosphorus, Total	mg/L	0.95 - 0.95	--	--	1	100.0%
Orthophosphate, Dissolved	mg/L	0.82 - 0.82	--	--	1	100.0%
Metals						
Arsenic, Total	ug/L	6.3 - 6.3	--	--	1	100.0%
Arsenic, Dissolved	ug/L	4.3 - 4.3	--	--	1	100.0%
Cadmium, Total	ug/L	0.4 - 0.4	--	--	1	100.0%
Cadmium, Dissolved	ug/L	<0.2 - <0.2	--	--	1	0.0%
Chromium, Total	ug/L	27 - 27	--	--	1	100.0%
Chromium, Dissolved	ug/L	7 - 7	--	--	1	100.0%
Copper, Total	ug/L	35 - 35	--	--	1	100.0%
Copper, Dissolved	ug/L	15 - 15	--	--	1	100.0%
Lead, Total	ug/L	8.1 - 8.1	--	--	1	100.0%
Lead, Dissolved	ug/L	1.6 - 1.6	--	--	1	100.0%
Nickel, Total	ug/L	17 - 17	--	--	1	100.0%
Nickel, Dissolved	ug/L	4.3 - 4.3	--	--	1	100.0%
Zinc, Total	ug/L	97 - 97	--	--	1	100.0%
Zinc, Dissolved	ug/L	22 - 22	--	--	1	100.0%

Table 2.5. 20 Caltrans Site ID 4-213 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	48 - 150	96	33	8	100.0%
Hardness as CaCO3	mg/L	14 - 46	29	10	8	100.0%
pH	pH Units	6.1 - 6.7	6.4	0.22	8	100.0%
TSS	mg/L	11 - 141	63	42	8	100.0%
TDS	mg/L	30 - 66	45	13	8	100.0%
Nutrients						
Ammonia-N	mg/L	0.33 - 2	1.2	0.53	8	100.0%
Nitrate-N	mg/L	0.65 - 3.2	1.7	0.89	8	100.0%
TKN	mg/L	0.72 - 4.3	2.8	1.2	8	100.0%
TOC	mg/L	7.5 - 40	21	11	8	100.0%
DOC	mg/L	3.5 - 28	15	8.6	8	100.0%
Phosphorus, Total	mg/L	0.03 - 0.2	0.093	0.06	8	100.0%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.04	--	--	8	12.5%
Metals						
Arsenic, Total	ug/L	0.5 - 1.6	1.1	0.39	8	100.0%
Arsenic, Dissolved	ug/L	<0.5 - 0.9	0.72	0.18	8	87.5%
Cadmium, Total	ug/L	0.2 - 0.9	0.54	0.25	8	100.0%
Cadmium, Dissolved	ug/L	<0.2 - 0.5	0.29	0.14	8	87.5%
Chromium, Total	ug/L	6.2 - 20	12	4.8	8	100.0%
Chromium, Dissolved	ug/L	1.3 - 9.4	4.4	2.7	8	100.0%
Copper, Total	ug/L	23 - 130	74	36	8	100.0%
Copper, Dissolved	ug/L	17 - 91	46	24	8	100.0%
Lead, Total	ug/L	3.3 - 33	13	10	8	100.0%
Lead, Dissolved	ug/L	<1 - 11	3.3	3.9	8	75.0%
Nickel, Total	ug/L	4.5 - 24	15	6.8	8	100.0%
Nickel, Dissolved	ug/L	2.8 - 13	7.5	3.6	8	100.0%
Zinc, Total	ug/L	57 - 290	157	80	8	100.0%
Zinc, Dissolved	ug/L	34 - 130	78	36	8	100.0%

Table 2.5. 21 Caltrans Site ID 4-214 Water Quality Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Conventionals						
Conductivity	umhos/cm	99 - 201	139	38	7	100.0%
Hardness as CaCO3	mg/L	2 - 60	38	21	7	100.0%
pH	pH Units	6 - 7	6.6	0.36	7	100.0%
TSS	mg/L	2 - 74	19	30	7	100.0%
TDS	mg/L	24 - 106	71	34	7	100.0%
Nutrients						
Ammonia-N	mg/L	0.24 - 1.1	0.63	0.37	7	100.0%
Nitrate-N	mg/L	0.18 - 1.1	0.57	0.34	7	100.0%
TKN	mg/L	1.2 - 4.6	2.7	1.4	7	100.0%
TOC	mg/L	<1 - 44	20	14	7	85.7%
DOC	mg/L	<1 - 33	18	9.1	7	85.7%
Phosphorus, Total	mg/L	0.11 - 0.4	0.24	0.11	7	100.0%
Orthophosphate, Dissolved	mg/L	<0.03 - 0.32	0.12	0.13	7	71.4%
Metals						
Arsenic, Total	ug/L	<0.5 - 0.9	0.41	0.3	7	42.9%
Arsenic, Dissolved	ug/L	<0.4 - 0.5	--	--	7	42.9%
Cadmium, Total	ug/L	<0.2 - 0.7	0.21	0.29	7	42.9%
Cadmium, Dissolved	ug/L	<0.2 - 0.4	--	--	7	42.9%
Chromium, Total	ug/L	<1 - 7.5	2.3	2.9	7	71.4%
Chromium, Dissolved	ug/L	<1 - 2.6	1.4	0.89	7	71.4%
Copper, Total	ug/L	6.3 - 55	17	21	7	100.0%
Copper, Dissolved	ug/L	5 - 29	12	9.5	7	100.0%
Lead, Total	ug/L	<1 - 9.4	1.7	4.7	7	42.9%
Lead, Dissolved	ug/L	<1 - 3.6	--	--	7	14.3%
Nickel, Total	ug/L	<2 - 12	4	4.5	7	85.7%
Nickel, Dissolved	ug/L	<2 - 5.8	2.7	1.9	7	71.4%
Zinc, Total	ug/L	26 - 140	67	53	7	100.0%
Zinc, Dissolved	ug/L	17 - 130	49	45	7	100.0%

SECTION 3 Gross Solids

3.1 SR 73 Gross Solids Removal Devices Pilot Study

The GSRD pilot BMP at Basin 630L is part of the State Route 73 (SR 73) Pilot Program described in Section 2.3 of this report.

Data summarized blow are reported on a wet-weight basis.

Table 3.1. 0 SR 73 Gross Solids Removal Devices Pilot Study

Site ID	Outfall ID	Caltrans District	Regional Board	County	Catchment Area (hectares)
12-332	630L	12	San Diego	Orange	2

Table 3.1.1 Caltrans Site ID 12-332 Gross Solids Data Summary

Constituent	Units	Range	Mean	Std Dev	n	% Detected
Weight	grams	59000 - 59000	--	--	1	100.0%
Volume	mL	320000 - 320000	--	--	1	100.0%