SACRAMENTO
STORMWATER
QUALITY
PARTNERSHIP

City of Sacramento
Stormwater Quality Program
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March 16, 2009

California Regional Water Quality
Control Board – Central Valley Region
11020 Sun Center Drive, Ste. 200
Rancho Cordova, CA 95870-6114

ATTN: Daniel McClure

Dear Mr. McClure:

This letter was prepared by the Sacramento Stormwater Quality Partnership to present general and specific comments on the Draft 2008 Update to the 303d list of impaired water bodies in the Central Valley Region and to request specific changes to the January 2009, Clean Water Act Sections 305(b) and 303(d) Integrated Report for The Central Valley Region, Public Review Draft. The comments were prepared referencing the 303(d) Listing Policy[1] that sets forth the basis for listing and delisting impaired water bodies.

The Partnership is comprised of the Sacramento Area Municipal NPDES Stormwater Permittees. The Coordinated Monitoring Program (CMP), begun in 1991, combines resources of the Sacramento Regional County Sanitation District and the Partnership for monitoring in their common receiving waters: the lower American and Sacramento Rivers. The Partnership also monitors a number of urban tributaries and urban runoff discharge. Much of the monitoring data used for the proposed 303(d) listing comes from these monitoring programs.

We recognize the significant work effort completed by Regional Board staff in preparing the draft document, organizing the supporting review documents and data in a public and transparent manner, and we appreciate this opportunity to participate in the listing process.

GENERAL COMMENTS

Our review focused on those receiving waters that are included in the Partnership NPDES Monitoring and Reporting Program (MRP) or otherwise receive urban runoff from the Sacramento permitted area. In general we agree with the administrative and technical decisions to list pyrethroids, however, certain listings should consider documented data quality issues, minimum data requirements, and the possibility of re-categorizing certain listings as "requiring further study" rather than impairment listings with a TMDL schedule.

[1] Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy; SWRCB, 2004)

SPECIFIC COMMENTS

The listings of specific concern include the bis(2ethylhexyl)phthalate at Arcade and Morrison Creeks, total petroleum hydrocarbon (TPH) as diesel at Arcade Creek, failure to delist Arcade Creek for copper, failure to delist urban tributaries for chlorpyrifos and diazinon, and the Sacramento and American rivers for legacy pesticides related to fish tissue studies where exposure is known to occur elsewhere.

1. Morrison and Arcade Creeks - Bis(2-ethylhexyl)phthalate

Arcade Creek and **Morrison Creek** are both included in the proposed listing based on "the weight of evidence" under section 3.1 of the Listing Policy. The Partnership does not concur that a listing is immediately necessary based on the small number of exceedances with known field and laboratory contamination issues. Moreover, the two exceedances of the CTR water quality objective (1.8 µg/L at both locations occurred during first flush peak flow periods (10/19/2004 and 10/5/2006) that are statistically infrequent.

Contamination of phthalates at concentrations near to the CTR water quality objective have been documented for all of the samples used for this listing in the study reports submitted to the Regional Board as part of Waste Discharge Requirements (NPDES # CAS082597). Field blank and method blanks are consistently reported at significant concentrations relative to the reported environmental concentrations. The contract laboratory (CRG Marine Labs, Torrance, CA) have performed numerous audits and process assessments to reduce sources of contamination in the laboratory, but plastic materials are ubiquitous in modern-day life and field and laboratory contamination sources are unavoidable with reasonable field technique precautions given the range of low-level sampling that is performed. The Partnership Data Quality Evaluation Plan (DQEP) qualifies data based on contamination in cases where contamination accounts for more than 10 percent of the environmental sample. The "NDB" and "B/U" qualifiers indicate that the results should be considered an upper limit of the true result due to significant contamination. The "B" qualifier indicates that the method blank was reported as detected. Although the water quality objective exceeding concentrations meet the minimum data quality requirements at both locations, the ongoing occurrence of significant contamination indicate that the observed concentration values are in part made up of contamination. The minimum level (ML) specified in the previous NPDES permit and the SIP is 5 µg/L, which the Partnership laboratory reports method detection limits (MDL) to 0.005 µg/L.

Table 1 compares the observed environmental samples to the corresponding blanks samples. Although the two samples used as the basis for the listing are not qualified as "estimated", sample contamination contributed to the reported environmental concentration. Moreover, sample field contamination can vary widely (0.112 µg/L to 10.3 µg/L) and quantification around the CTR water quality objective (1.4 µg/L) is not reliable for the purpose of listing the water bodies as impaired as drinking water sources. A more reasonable quantification level would be the SIP required ML (5 µg/L).

Table 1. Observed Bis(2-ethylhexyl)phthalate Concentrations in Partnership Urban Tributary Monitoring and Associated Blank Samples

Event Date	Arcade Creek at Watt (µg/L)	Qualifier Applied	Morrison Creek at Brookfield (µg/L)	Qualifier Applied	Method Blank (µg/L)	Field Blank (µg/L) [1]
12/14/03	1.48	NDB	1.25	NDB	0.137	0.178
10/19/04	5.61	[2]	3.59	[2]	0.097	0.288
12/1/05	1.25	B/U/MIH	1.49	B/U/MIH	0.021	10.3
10/5/06	3.37	B	2.13	B	0.022	0.112[3]

Notes:
[1] Field blank location rotated between sites on event basis. Sample collection methods are identical at urban tributary locations.
[2] "B" qualifier introduced in laboratory qualifying in 2005, and would apply here.
[3] Field blank not collected for urban tributary sampling. Field blank result from urban runoff monitoring.

This human health objective is based on a presumption of consumption of fish or water over a 70-year period, and the State Implementation Plan requires the use of 30-day averaging periods for assessing compliance. The NPDES-required sampling targets the first wet weather event of the year, such that all four samples characterize a critical and infrequent period that is not reflective of a 30-day averaging period. The NPDES-required Monitoring and Reporting Program (MRP) requires the Partnership Permittees to "target" the first significant wet weather event of the year. The two wet weather events where apparent exceedances were reported were the first events following an extended (summer) dry period and are considered the most critical concentration conditions. Section 6.1.5.6 of the Listing Policy states that "If the water quality objective, criteria, or guidance state a specific averaging period and/or mathematical transformation, the data should be evaluated in a consistent manner prior to conducting any statistical analysis for placement of the water on the section 303(d) list." However, if the data consistent with the averaging period are not available, the available data can still be used for placement on the 303(d) list.

The Partnership requests that bis(2ethylhexyl)phthalate be removed from the listing for Morrison and Arcade Creeks based on the weight-of-evidence that suggests that the issues of sample contamination and exceedance frequency should be considered. Additional information on phthalate contamination and the impact of episodic exceedences on a long-term (30-day) exposure-based objective and beneficial uses should also be considered. Furthermore, because the sources of phthalates in the environment are ubiquitous, a watershed-specific TMDL would not identify discrete sources and may provide little benefit.

2. Arcade Creek - Total Petroleum Hydrocarbons as Diesel

The basis of the proposed listing in Arcade Creek was four total petroleum hydrocarbons (TPH) quantitated as diesel exceedances of the "oral reference dose" (56 µg/L) developed in a 1992 EPA memorandum. This (non-carcinogenic) human health effect level is based on animal exposure to diesel fumes in the C9-C20 range. The listing justification suggests that all four samples exceeded the reference dose that is used as the water quality objective. However, it is important to note that the analytical method used for the four samples comparisons is not strictly diesel, but is all total petroleum hydrocarbons in the C12-C24 that includes a "heavier" range than the reference dose calculation. All of the samples reported qualifiers that "An unidentified petroleum hydrocarbon was present in the sample. An approximate concentration has been calculated based on Diesel #2 standards." Laboratories

can report a value for "diesel" that matches a standard output "trace"; this analysis was reported in the earliest (12/14/03) sample as "non detect" at a reporting limit of 50 µg/L.

Two of the four values used as the basis for the TPH listing are reported with qualifiers as "estimated" suggesting that, although the constituent was detected, it was not adequately quantified. After a detailed review of the original laboratory reports, all four values should be qualified as "estimated" based on the laboratory qualification. Two of the values in the data submitted to and used by the Regional Board did not include this notation. A copy of the pertinent pages from each event laboratory report is included as Attachment A.

The Partnership requests that TPH listing at Arcade Creek be removed because the exceedances were not accurately quantified to match the oral reference dose that was used as the water quality objective.

3. Arcade Creek – Dissolved Copper

Arcade Creek was previously listed for copper, and is not considered for delisting in the proposed 303(d) document based on CTR exceedances from data collected by the Partnership. The listing fact sheet states that 6 of 17 samples exceeded the hardness based chronic CTR objective and 5 of 21 samples exceeded the hardness based acute CTR objective. It is unclear how the chronic CTR comparisons were performed, and whether they used *total recoverable* comparisons based on 4-day grab sampling performed by the Partnership.

USEPA promulgated a revised copper objective[2] that considers the bioavailibility of copper using the Biotic Ligand Model (BLM). This objective considers the chemical characteristics of the receiving water that affect aquatic species uptake. The primary inputs to the model are dissolved copper, dissolved organic carbon, and pH. The Partnership has collected these data in support of the original 303(d) listing. There are sufficient data to perform revised water quality objective comparisons in 12 cases. The water quality objective was not exceeded in any of these cases.

The Partnership requests that Arcade Creek be delisted for dissolved copper impairment based on the USEPA BLM-based water quality objective. If copper remains on the 303(d) list it should be the lowest priority for TMDL development so that a more thorough evaluation process that considers site-specific conditions can continue.

4. Sacramento Urban Tributaries - Listing Status for Chlorpyrifos and Diazinon

A number of urban tributaries (creeks) were previously listed as impaired due to diazinon and/or chlorpyrifos toxicity to aquatic life. The Regional Board subsequently completed a TMDL for Sacramento Urban tributaries[3] (see Table 2) that included most all of the previous listings. The TMDL did not specifically consider Natomas East Main Drain for either pesticide or Elk Grove Creek and Morrison Creek for chlorpyrifos. Both pesticides were banned for unregistered use in 2005. The Partnership's monitoring since the ban has demonstrated that all urban tributaries have responded to the ban and meet the requirements of the TMDL.

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[2] USEPA. *Aquatic Life Ambient Freshwater Quality Criteria – Copper. 2007 Revision.* EPA-822-R-07-001. February 2007/

[3] Regional Water Quality Control Board, Central Valley Region. *Total Maximum Daily Load (TMDL) Report For the Pesticides Diazinon & Chlorpyrifos In: Arcade Creek, Elder Creek, Elk Grove Creek, Morrison Creek, Chicken Ranch Slough, and Strong Ranch Slough.* July 2004

Table 2. Sacramento Urban Tributaries Diazinon and Chlorpyrifos TMDL

	2009 Proposed Status		2004 TMDL
Urban Tributary	Diazinon	Chlorpyrifos	2002 303(d) OP Pesticide Listings
Arcade Creek	5B	5B	Diazinon and Chlorpyrifos
Chicken Ranch Slough	5B	5B	Diazinon and Chlorpyrifos
Elder Creek	5B	5B	Diazinon and Chlorpyrifos
Elk Grove Creek	4A, B	4A, B	Diazinon
Morrison Creek	5B	Delist	Diazinon
Strong Ranch Slough	5B	5B	Diazinon and Chlorpyrifos
Natomas East Main Drain	5A	5A	None

Notes:
Category 5 designation indicates a water segment where standards are not met and a TMDL is required.
Category 4A designation indicates a water segment where all 303(d) listings are being addressed and at least one of those listings is being addressed by a USEPA approved TMDL
"A" designation indicates that a TMDL is still necessary
"B" designation indicates that the listing is being addressed by USEPA approved TMDL
"C" designation indicates that the listing is being addressed by action other than a TMDL

The Partnership submitted data in support of delisting both constituents as part of NPDES reporting[4] and separate communication[5] that were included as part of the administrative record for this 303(d) listing process (reference 2767). Data collected since the February 2005 ban confirm that this ban has resulted in urban tributary concentrations below the water quality objectives used as the basis for not delisting (chlorpyrifos - 0.025 µg/L acute 1-hour, 0.015 µg/L chronic 4-day and diazinon - 0.16 µg/L acute 1-hour , 0.10 µg/L chronic 4-day). The proposed 303(d) listing changes rely mostly on data collected prior to 2005. Using chlorpyrifos data collected by the Partnership after January 1, 2005 there are no *quantified* exceedances from more than 100 samples. Using diazinon data after February 1, 2005, there are four exceedances from 81 samples. The delisting criteria in Table 4.1 of the Listing Guidance permit delisting if there are fewer than eight exceedances from 100 samples and if fewer than six samples from 81 samples exceed.

Based on the observed decline in diazinon and chlorpyrifos concentrations in the urban tributaries covered in the TMDL and within our jurisdiction, the Partnership believes that the TMDL goals have been met (i.e., compliance with applicable water quality objectives for diazinon and chlorpyrifos) and the urban tributaries should be delisted for these constituents.

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[4] Memorandum from Brian Laurenson, Larry Walker Associates to Delia McGrath, City of Sacramento and Janet Parris, Sacramento County. *Evaluation of Additional Pesticide Monitoring Data – 2007 Update.* May 25, 2007.

[5] E-mail communication and data submittal from B. Laurenson, Larry Walker Associates on behalf of the Sacramento Stormwater Quality Partnership to Daniel McClure, Central Valley Regional Water Quality Control Board. June 18, 2008.

5. American and Sacramento Rivers - Legacy Pesticides

The proposed 303(d) listing changes include the addition of several human-generated, bioaccumulative, and banned pesticides in the American and Sacramento Rivers:

- American River (Nimbus Dam to Sacramento River confluence): dieldrin, PCBs
- Sacramento River (Knights Landing to Delta): chlordane, DDT, dieldrin, PCBs

Threshold for Comparison

All of the newly listed chemicals for these two reaches are bioaccumulative, and the listings are based appropriately on levels measured in fish tissue exceeding determined thresholds. However, the fish tissue concentration bases for listings are the Office of Environmental Health Hazard Assessment (OEHHA) fish contaminant goals. The advisory tissue levels (ATLs) are the basis for OEHHA's fish consumption guidelines and advisories; the fish contaminant goals (FCG) are based solely on public health considerations without regard to economic considerations, technical feasibility, or the counterbalancing benefits of fish consumption. Following section 3.4 of the Listing Policy, the ATLs should be the basis for listings, not the FCGs. Following section 3.5 of the Listing Policy, the Board chose to apply the much lower, conservative FCGs as thresholds, which results in these listings.

Dieldrin Listing in the Lower American River

The proposed 303(d) dieldrin listing in the American River is based on two of five composite fish samples exceeding the FCG. One of the two exceedances was for Chinook captured from the American River at Nimbus Fish Hatchery. Chinook are anadromous salmon, which means they could not have accumulated their dieldrin from the American River. **The Partnership requests that this dieldrin listing be removed.**

Listing Category

Category 5 water bodies can be subdivided into three subcategories:

- A= TMDL still required
- B= being addressed by USEPA approved TMDL
- C= being addressed by action other than a TMDL

New listings for the lower Sacramento and American Rivers have TMDL requirement status' of Category 5A, which sets deadlines for required TMDLs. A TMDL would allocate load reductions among the various sources. However, there are no sources to which reductions could be allocated because:

- Each of the new listings is for a banned, human-source chemical, and
- CMP monitoring has never measured detectable levels of these chemicals in the water column at any of the sampling stations.

The Partnership requests that each of these listings be placed in Category 5C rather than requiring TMDLs.

Prioritization

One aim of the statewide fish contaminant monitoring program is to compare contamination levels throughout the state[6]. One message from this program is that "In general, PCB and DDT levels in fish and mussels across California have declined greatly since the 1970s, and many species have bounced back in response to the decline in DDT levels." This message implies that while continued monitoring is warranted, contamination is declining without specific efforts aimed at affecting those declines.

Section 303(d)(1) of the federal Clean Water Act provides for prioritization as well. **If these chemicals remain on the 303(d) list and are not changed to Category 5C, the Partnership requests that they receive the lowest priority for TMDL development so that the evaluation process can continue.**

Thank you for your consideration of our clarifications and requested changes. Please contact either Delia McGrath (916.808.5390) or Ken Ballard (916.874.7173) if you have questions or need additional materials.

Sincerely,

Sherill Huun
Supervising Engineer
Department of Utilities
City of Sacramento

Kerry Schmitz, P.E.
Stormwater Quality Program Manager
Water Resources Division
Sacramento County

[6] Please refer to http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/bop/factsheet.pdf

ATTACHMENT A
Total Petroleum Hydrocarbon as Diesel Laboratory Reports
[full laboratory reports available on request]

NELAP Accreditation 01103CA

Caltest
ANALYTICAL LABORATORY
ENVIRONMENTAL ANALYSES

ELAP Certification 1664

EVENT WWCRK01
12/14/2003

(Amended)

LAB ORDER No.: D120579

REPORT of ANALYTICAL RESULTS

Report Date: 05 FEB 2004
Received Date: 16 DEC 2003

Client: Brian Laurenson
Larry Walker and Associates
707 4th Street
Suite 200
Davis, CA 95616

Purchase Order: 159.21 #2.2

Project: SACTO STORM

Sampled by: KRISTINE CORNEILLIE

Lab Number	Sample Identification	Matrix	Sampled Date/Time
D120579-1	MORRISON CK UT1	AQUEOUS	14 DEC 03 05:45
D120579-2	WILLOW CK UT3	AQUEOUS	14 DEC 03 07:30
D120579-3	ARCADE CK UT2	AQUEOUS	14 DEC 03 07:40
D120579-4	ARCADE CK UT2	AQUEOUS	14 DEC 03 07:45

NOTE: Report amended to include Motor Oil analysis per client request.

Todd M. Albertson
Project Manager

CAHorn
Christine Horn
Laboratory Director

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ORGANIC ANALYTICAL RESULTS (Amended) LAB ORDER No.: D120579 Page 2 of 4

ANALYTE	RESULT	R.L.	UNITS	D.F.	ANALYZED	QC BATCH	NOTES
LAB NUMBER: D120579-1 SAMPLE ID: MORRISON CK UT1 SAMPLED: 14 DEC 03 05:45 METHOD: EPA 8015M							
TOTAL SEMI-VOLATILE PETROLEUM HYDROCARBONS				1	12.27.03	T030286TPH	1,2,3
Diesel Fuel	ND	50.	ug/L				
TPH-Extractable, quantitated as diesel	470.	50.	ug/L				
Motor Oil	ND	200.	ug/L				
TPH-Extractable, quantitated as Motor Oil	2400.	200.	ug/L				
Surrogate o-Terphenyl	100.		%				
LAB NUMBER: D120579-1 (continued) SAMPLE ID: MORRISON CK UT1 SAMPLED: 14 DEC 03 05:45 METHOD: EPA 8015							
TOTAL PURGEABLE PETROLEUM HYDROCARBONS				1	12.19.03	V030071G9A	4
Total Petroleum Hydrocarbons - Gasoline	ND	50.	ug/L				
Surrogate 4-Bromofluorobenzene [FID]	113.		%				
LAB NUMBER: D120579-2 SAMPLE ID: WILLOW CK UT3 SAMPLED: 14 DEC 03 07:30 METHOD: EPA 8015M							
TOTAL SEMI-VOLATILE PETROLEUM HYDROCARBONS				1	12.27.03	T030286TPH	1
Diesel Fuel	ND	50.	ug/L				
TPH-Extractable, quantitated as diesel	ND	50.	ug/L				
Motor Oil	ND	200.	ug/L				
TPH-Extractable, quantitated as Motor Oil	ND	200.	ug/L				

1) Sample Preparation on 12-18-03 using EPA 3510
2) An unidentified petroleum hydrocarbon was present in the sample. An approximate concentration has been calculated based on Diesel #2 standards.
3) An unidentified petroleum hydrocarbon mixture was present in the sample. An approximate concentration has been calculated based on motor oil standards.
4) Sample Preparation on 12-18-03 using EPA 5030

ANALYTE	RESULT	R.L.	UNITS	D.F.	ANALYZED	QC BATCH	NOTES
LAB NUMBER: D120579-2 (continued)							
SAMPLE ID: WILLOW CK UT3							
SAMPLED: 14 DEC 03 07:30							
METHOD: EPA 8015M							
TOTAL SEMI-VOLATILE PETROLEUM HYDROCARBONS (continued)				1	12.27.03	T030286TPH	
Surrogate o-Terphenyl	94.		%				
LAB NUMBER: D120579-2 (continued)							
SAMPLE ID: WILLOW CK UT3							
SAMPLED: 14 DEC 03 07:30							
METHOD: EPA 8015							
TOTAL PURGEABLE PETROLEUM HYDROCARBONS				1	12.19.03	V030071G9A	1
Total Petroleum Hydrocarbons - Gasoline	ND	50.	ug/L				
Surrogate 4-Bromofluorobenzene [FID]	112.		%				
LAB NUMBER: D120579-3							
SAMPLE ID: ARCADE CK UT2							
SAMPLED: 14 DEC 03 07:40							
METHOD: EPA 8015M							
TOTAL SEMI-VOLATILE PETROLEUM HYDROCARBONS				1	12.27.03	T030286TPH	2,3,4
Diesel Fuel	ND	50.	ug/L				
TPH-Extractable, quantitated as diesel	110.	50.	ug/L				
Motor Oil	ND	200.	ug/L				
TPH-Extractable, quantitated as Motor Oil	600.	200.	ug/L				
Surrogate o-Terphenyl	99.		%				

1) Sample Preparation on 12-18-03 using EPA 5030
2) Sample Preparation on 12-18-03 using EPA 3510
3) An unidentified petroleum hydrocarbon was present in the sample. An approximate concentration has been calculated based on Diesel #2 standards.
4) An unidentified petroleum hydrocarbon mixture was present in the sample. An approximate concentration has been calculated based on motor oil standards.

ORGANIC ANALYTICAL RESULTS (Amended) LAB ORDER No.: D120579 Page 4 of 4

ANALYTE	RESULT	R.L.	UNITS	D.F.	ANALYZED	QC BATCH	NOTES
LAB NUMBER: D120579-4 SAMPLE ID: ARCADE CK UT2 SAMPLED: 14 DEC 03 07:45 METHOD: EPA 8015							
TOTAL PURGEABLE PETROLEUM HYDROCARBONS				1	12.19.03	V030071G9A	1
Total Petroleum Hydrocarbons - Gasoline	ND	50.	ug/L				
Surrogate 4-Bromofluorobenzene [FID]	121.		%				

1) Sample Preparation on 12-18-03 using EPA 5030

NARRATIVE

Lab Order: E100832
Project ID: SACRAMENTO STORMWATER URBAN

General Qualifiers and Notes

CALTEST authorizes this report to be reproduced only in its entirety. Results are specific to the sample(s) as submitted and only to the parameter(s) reported.

Caltest certifies that test results meet all applicable NELAC requirements unless stated otherwise.

All analyses performed by EPA Methods or Standard Methods (SM) 18th Ed. except where noted.

Caltest collects samples in compliance with CFR 40, EPA Methods, Cal. Title 22, and Standard Methods.

Dilution data reported greater than '1' has been used to adjust the listed Reporting Limit (R.L.) and listed Method Detection Limit (MDL).

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions: ND - indicates analytical result has not been detected at or above the listed Reporting Limit (R.L.) J - reflects estimated analytical result value detected below the Reporting Limit (R.L.) and above the Method Detection Limit (MDL). The 'J' flag is equivalent to the DNQ Estimated Concentration flag. E - indicates an estimated analytical result value. B - indicates the analyte has been detected in the blank associated with the sample. NC - means not able to be calculated for RPD or Spike Recoveries. ML - Minimum Level means results are evaluated to the lowest analytically calibrated detection point for practical quantitation.

NOTE: This document represents a complete Analytical Report for the samples referenced herein and should be retained as a permanent record thereof.

Qualifiers and Compound Notes

1 An unidentified petroleum hydrocarbon was present in the sample. An approximate concentration has been calculated based on Diesel #2 standards.

2 An unidentified petroleum hydrocarbon mixture was present in the sample. An approximate concentration has been calculated based on motor oil standards.

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EVENT WWCRK04
10/19/2004

ANALYTICAL RESULTS

Lab Order: E100832
Project ID SACRAMENTO STORMWATER URBAN

Lab ID:	**E100832002**	Date Collected:	10/19/2004 11:30	Matrix:	Water
Sample ID:	**ARCADE CREEK**	Date Received:	10/21/2004 11:20		

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Total Purgeable Petroleum Hydrocarbons	**Analytical Method:**		SW846 5030B/8015(MOD) TPPH Gas						
TPPH quantitated as Gasoline	ND	ug/L	50	1			10/27/04 23:48	VFL 1006	
4-Bromofluorobenzene (SS)[FID]	86	%	71-109	1			10/27/04 23:48	VFL 1006	
Total Extractable Petroleum Hydrocarbon	**Prep Method:**		SW846 3510C						
	Analytical Method:		SW846 8015(MOD)						
TPH quantitated as Diesel Fuel	470	ug/L	50	1	10/29/04 00:00	SPR 1070	11/09/04 18:35	SFL 1008	1,1
TPH quantitated as Motor Oils	1200	ug/L	200	1	10/29/04 00:00	SPR 1070	11/09/04 18:35	SFL 1008	2
o-Terphenyl (SS)	98	%	50-150	1	10/29/04 00:00	SPR 1070	11/09/04 18:35	SFL 1008	

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EVENT WWCRK07
12/1/2005

NARRATIVE

Lab Order: F120153
Project ID: SACTO SW

General Qualifiers and Notes

CALTEST authorizes this report to be reproduced only in its entirety. Results are specific to the sample(s) as submitted and only to the parameter(s) reported.

Caltest certifies that test results meet all applicable NELAC requirements unless stated otherwise.

All analyses performed by EPA Methods or Standard Methods (SM) 18th Ed. except where noted.

Caltest collects samples in compliance with CFR 40, EPA Methods, Cal. Title 22, and Standard Methods.

Dilution data reported greater than '1' has been used to adjust the listed Reporting Limit (R.L.) and listed Method Detection Limit (MDL).

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

ND - Indicates analytical result has not been detected at or above the listed Reporting Limit (R.L.)

J - reflects estimated analytical result value detected below the Reporting Limit (R.L.) and above the Method Detection Limit (MDL). The 'J' flag is equivalent to the DNQ Estimated Concentration flag.

E - Indicates an estimated analytical result value.

B - Indicates the analyte has been detected in the blank associated with the sample.

NC - means not able to be calculated for RPD or Spike Recoveries.

NOTE: This document represents a complete Analytical Report for the samples referenced herein and should be retained as a permanent record thereof.

Qualifiers and Compound Notes

1 Analyte was not detected at or above the Method Detection Limit (MDL).

2 The sample had a pH = 5.0

3 An unidentified petroleum hydrocarbon was present in the sample. An approximate concentration has been calculated based on Diesel #2 standards.

EVENT WWCRK07
12/1/2005

ANALYTICAL RESULTS

Lab Order: F120153
Project ID SACTO SW

Lab ID:	F120153012	Date Collected:	12/1/2005 16:50	Matrix:	Water
Sample ID:	MORRISON CK	Date Received:	12/5/2005 13:23		

Parameters	Result	Units	R.L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Toluene-d8 (SS)	97	%	72-118	1			12/07/05 18:25	VMS 1326	
4-Bromofluorobenzene (SS)	89	%	80-113	1			12/07/05 18:25	VMS 1326	

Lab ID:	F120153013	Date Collected:	12/1/2005 16:22	Matrix:	Water
Sample ID:	WILLOW CK	Date Received:	12/5/2005 13:23		

Parameters	Result	Units	R.L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Total Extractable Petroleum Hydrocarbon	Prep Method:		SW846 3510C		Prep by: MZE				
	Analytical Method:		SW846 8015(MOD)				Analyzed by: MDT		
TPH quantitated as Diesel Fuel	ND	ug/L	50	1	12/07/05 00:00	SPR 1681	12/12/05 17:32	SFL 1059	3
o-Terphenyl (SS)	107	%	50-150	1	12/07/05 00:00	SPR 1681	12/12/05 17:32	SFL 1059	
Total Purgeable Petroleum Hydrocarbons	Analytical Method:		SW846 5030B/8015(MOD) TPPH Gas				Analyzed by: CWC		
TPPH quantitated as Gasoline	ND	ug/L	50	1			12/09/05 23:54	VFL 1103	
4-Bromofluorobenzene (SS)[FID]	101	%	61-125	1			12/09/05 23:54	VFL 1103	
Volatile Organic Analysis	Analytical Method:		SW846 5030B/8260B				Analyzed by: MCW		
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0	1			12/07/05 18:43	VMS 1326	
Dibromofluoromethane (SS)	100	%	67-119	1			12/07/05 18:43	VMS 1326	
1,2-Dichloroethane-d4 (SS)	87	%	70-117	1			12/07/05 18:43	VMS 1326	
Toluene-d8 (SS)	98	%	72-118	1			12/07/05 18:43	VMS 1326	
4-Bromofluorobenzene (SS)	89	%	80-113	1			12/07/05 18:43	VMS 1326	

Lab ID:	F120153014	Date Collected:	12/1/2005 17:00	Matrix:	Water
Sample ID:	ARCADE CK	Date Received:	12/5/2005 13:23		

Parameters	Result	Units	R.L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Total Extractable Petroleum Hydrocarbon	Prep Method:		SW846 3510C		Prep by: MZE				
	Analytical Method:		SW846 8015(MOD)				Analyzed by: MDT		
TPH quantitated as Diesel Fuel	210	ug/L	50	1	12/07/05 00:00	SPR 1681	12/12/05 18:18	SFL 1059	3
o-Terphenyl (SS)	110	%	50-150	1	12/07/05 00:00	SPR 1681	12/12/05 18:18	SFL 1059	
Total Purgeable Petroleum Hydrocarbons	Analytical Method:		SW846 5030B/8015(MOD) TPPH Gas				Analyzed by: CWC		
TPPH quantitated as Gasoline	ND	ug/L	50	1			12/10/05 01:55	VFL 1103	
4-Bromofluorobenzene (SS)[FID]	104	%	61-125	1			12/10/05 01:55	VFL 1103	

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NARRATIVE

Lab Order: G100257
Project ID: SACRAMENTO STORMWATER

General Qualifiers and Notes

CALTEST authorizes this report to be reproduced only in its entirety. Results are specific to the sample(s) as submitted and only to the parameter(s) reported.

Caltest certifies that test results meet all applicable NELAC requirements unless stated otherwise.

All analyses performed by EPA Methods or Standard Methods (SM) 18th Ed. except where noted.

Caltest collects samples in compliance with 40 CFR, EPA Methods, Cal. Title 22, and Standard Methods.

Dilution Factors (DF) reported greater than '1' have been used to adjust the result, Reporting Limit (R.L.), and Method Detection Limit (MDL).

All Solid, sludge, and/or biosolids data is reported in Wet Weight, unless otherwise specified below.

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

ND - Non Detect - Indicates analytical result has not been detected.

RL - Reporting Limit is the quantitation limit at which the laboratory is able to detect an analyte with a certain level of confidence. Generally, this represents the laboratory's lowest calibration point.

J - reflects estimated analytical result value detected below the Reporting Limit (R.L.) and above the Method Detection Limit (MDL). The 'J' flag is equivalent to the DNQ Estimated Concentration flag.

E - indicates an estimated analytical result value.

B - Indicates the analyte has been detected in the blank associated with the sample.

NC - means not able to be calculated for RPD or Spike Recoveries.

SS - compound is a Surrogate Spike used per laboratory quality assurance manual.

NOTE: This document represents a complete Analytical Report for the samples referenced herein and should be retained as a permanent record thereof.

Qualifiers and Compound Notes

1	An unidentified petroleum hydrocarbon was present in the sample. An approximate concentration has been calculated based on Diesel #2 standards.
2	Sample diluted due to a high concentration of non-target analyte(s), resulting in increased reporting limits.
3	Analyte was not detected at or above the Method Detection Limit (MDL).
4	Analysis run on unpreserved sample

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ANALYTICAL RESULTS

Lab Order: G100257
Project ID SACRAMENTO STORMWATER

Lab ID:	G100257003	Date Collected:	10/5/2006 07:45	Matrix:	Water
Sample ID:	AC03-ARCADE CREEK	Date Received:	10/5/2006 14:20		

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Total Extractable Petroleum Hydrocarbon	Prep Method:		SW846 3510C		Prep by: RMD				
	Analytical Method:		SW846 8015(MOD)				Analyzed by: MDT		
TPH quantitated as Diesel Fuel	1400	ug/L	50	1	10/09/06 00:00	SPR 2163	10/13/06 10:47	SFL 1103	1
o-Terphenyl (SS)	70	%	50-150	1	10/09/06 00:00	SPR 2163	10/13/06 10:47	SFL 1103	
Total Purgeable Petroleum Hydrocarbons	Analytical Method:		SW846 5030B/8015(MOD) TPPH Gas				Analyzed by: CWC		
TPPH quantitated as Gasoline	ND	ug/L	1000	20			10/18/06 12:20	VFL 1165	2
4-Bromofluorobenzene (SS)[FID]	111	%	61-125	20			10/18/06 12:20	VFL 1165	
Volatile Organic Analysis	Analytical Method:		EPA 624				Analyzed by: CWC		
Methyl tert-butyl ether (MTBE)	ND	ug/L	10	20			10/10/06 19:43	VMS 1505	2
Dibromofluoromethane (SS)	96	%	79-107	20			10/10/06 19:43	VMS 1505	
1,2-Dichloroethane-d4 (SS)	78	%	71-115	20			10/10/06 19:43	VMS 1505	
Toluene-d8 (SS)	93	%	84-112	20			10/10/06 19:43	VMS 1505	
4-Bromofluorobenzene (SS)	92	%	86-113	20			10/10/06 19:43	VMS 1505	
Cyanide, Total Analysis	Analytical Method:		EPA 335.2				Analyzed by: BCP		
Cyanide	ND	ug/L	3	1			10/17/06 00:00	WCO 2709	
Nitrogen, Nitrate-Nitrite Analysis	Analytical Method:		EPA 353.2				Analyzed by: AL		
Nitrogen, Nitrate-Nitrite	2.8	mg/L	0.1	1			10/11/06 00:00	WCO 2695	
Chromium, Hexavalent by Standard Methods	Analytical Method:		SW846 7196A				Analyzed by: BCP		
Chromium, Hexavalent	ND	ug/L	10	1			10/05/06 16:15	WCO 2685	3
Nitrogen,Total Kjeldahl Analysis	Analytical Method:		EPA 351.3				Analyzed by: JDC		
Total Kjeldahl Nitrogen	9.1	mg/L	0.1	1			10/16/06 11:11	WET 2830	
Dissolved Organic Carbon Analysis	Analytical Method:		EPA 415.1				Analyzed by: AL		
Dissolved Organic Carbon	110	mg/L	0.5	1			10/12/06 00:00	WET 2823	
Total Organic Carbon	110	mg/L	0.5	1			10/12/06 00:00	WET 2823	
Phenols, Total Analysis	Analytical Method:		EPA 420.2				Analyzed by: EJP		
Total Phenols	7.8	ug/L	5.0	1			10/16/06 00:00	WET 2836	4
Anions by Ion Chromatography	Analytical Method:		EPA 300.0				Analyzed by: MYS		
Fluoride	ND	mg/L	0.1	1			10/16/06 00:40	WIC 1525	

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