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Monitoring seasonal surface water quality variability in the Carmel River, Monterey County

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To the SEP Faculty:

Several indicators of unknown contaminant discharge have been found in and around the Carmel River near the Mid-Valley Shopping Center in Carmel Valley. The Monterey Peninsula Water Management District believes this discharge to be sewage effluent. They also feel that this discharge may be potentially hazardous to the aquatic life and surrounding habitat. Excess nutrients in water cause large algae blooms that can devastate aquatic habitats. The Carmel River is the protected habitat of many species and thus it is important that contaminant inputs be minimized. Analytical study of the Carmel River determined this observed discharge to be some form of nutrient rich effluent.

This capstone is a scientific inquiry that focused on the questions: Is there intermittent discharge of sewage or leach field effluent into the Carmel River system? If there is discharge, where does it occur? How far downstream does any discharge affect the water quality of the Carmel River? Is there any seasonal pattern in the discharge affecting the river? To answer these questions, I collected a general physical and mineral water quality panel, urea, total nitrogen panel, and bacteriological analysis from five sites on the Carmel Valley River. These sites were picked by locations upstream of contamination, at contamination and location downstream of contamination.

I worked directly with the fisheries staff of the Monterey Peninsula Water Management District (MPWMD) and also worked as a laboratory technician at Monterey Bay Analytical where all the analyses were completed. This project was brought to my attention by Joe Oliver of MPWMD. The specific audience this report is written towards is the staff of MPWMD. If this discharge is hazardous to the aquatic life and their habitat then this report will help in their correction of it. This report will give them evidence that this problem exist with all the available literature review and background research needed to back up the analytical data.

I believe I entered this work with a strong assumption that I would evidence of pollutant discharge such as an increase in nutrients, coliform bacteria or surfactants during my sampling. I wanted to pinpoint a contamination so that I could help make a difference. I decided to pursue this project because of the analytical background associated with it. As stated, I work for a laboratory and I find the work that I do very interesting. This capstone is providing me with background and experience far greater than what I have had in both work and school.

Sincerely,

Trevor Weidner-Holland

Monitoring Seasonal Surface water Quality Variability in the Carmel River, Monterey County

A Capstone Project

Presented to the Faculty of Science and Environmental Policy

in the

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at

California State University, Monterey Bay

in Partial Fulfillment of the Requirements for the Degree of

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by

Trevor Weidner-Holland

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Abstract

Indicators of contamination from unknown sources have been observed on the Carmel River, California. This contamination was first suspected to be effluent discharge related to nearby homes. In an effort to identify the source and nature of this contamination, general physical and mineral properties, as well as total nitrogen and coliform bacteria were analyzed each month, at five sites in the Mid-Valley section of the Carmel River. Noticeable discharge was observed from a stormdrain pipe near Carmel Valley Ranch Golf Course. The stormdrain was only discharging during the months of July and August, and was thus not active during the other sampling months. When compared, the water quality of original sample sites were similar, however a substantial difference in water quality from the stormdrain shows that a contamination exists. The water quality standard for E. coli discharge into a stream is 235 mpn per 100 mL. Analysis of the storm drain found counts from 900 mpn per 100 mL to as high as 120959 mpn per 100 mL. Alkalinity from the storm drain was from 250 to 350 mg/L $CaCO_3$ but the hazard limit is 400 mg/L. Urea from stormdrain was greater than 70 ug/L. Monthly sample collection has removed the possibility of sewage effluent runoff due to the fact that contamination has be narrowed to the golf course stormdrain. Samples were collected during low flow conditions eliminating any seasonal patterns caused by precipitation. High levels of urea, alkalinity, and E. coli from discharge have also produced further questions. While urea and alkalinity are signs of fertilizer use, E. coli was far higher than expected.

Sources of Water Contamination

Due to increased population growth, the quality of accessible fresh water has become an increasing issue. Urban expansion and development cause high amounts of inorganic and organic substances to flow into river systems. Agricultural operations also contribute high levels of nitrates, phosphates and pesticides to the world's drinkable surface water (USGS 2005).

The oldest, most common and most health-threatening agents to affect drinking water are biological organisms (Department of Environmental Quality ND; Oakland County Department of Health 2007). Many harmful biological organisms exist in water, but monitoring for all of them is far too costly and time-consuming. Total coliform is an indicator organism whose presence indicates the likely presence of pathogenic organisms. Total coliform bacteria can be found in the intestines of animals and in soils. Fecal coliform and *Escherichia coli* bacteria are found in warm-blooded animal fecal matter. The presence of high levels of fecal coliform along with high total coliform, produce strong evidence that sewage is present (EPA 2006).

Surfactants, nitrate, phosphate, ammonia and urea are other contaminants that can indicate the presence of sewage in water. Surfactants, the active ingredient in detergents, are extremely toxic to aquatic life (Rosen, 2001). Ammonia, nitrate, phosphate, and urea are found in fertilizers, but are present in high concentrations in sewage, animal wastes, and are byproducts of decomposing organic material. The accumulation of nutrients such as urea, ammonia, nitrate, and phosphates in surface water cause nutrient enrichment, which in turn impacts the aquatic biome (CEPA 2006; Campbell 2007; Dylevskaia 2001; Gilbert 1999). This increase of nutrients which in turn stimulates excessive plant growth is referred to as eutrophication (Nixon, 1995). High concentrations of nutrients in aquatic river systems can result in an overabundance of algae and aquatic plants. With this overabundance of plant growth a corresponding reduction of

oxygen occurs in the water when microbial decay of dead aquatic plants uses the oxygen that aquatic organisms need for survival (Anderson, Gilbert, & Burkholder, 2002). The excess algae and resulting microbial decomposition also cause discoloration and odors into the water, making the area un-enjoyable for recreational use.

Clean Water Act and Other Regulations

Awareness for controlling water pollution in the United States caused the enactment of the Federal Water Pollution Control Act of 1972. Since its amendment in 1977, this act has been commonly known as the Clean Water Act and the primary focus of the act was to regulate point source discharge from industrial facilities and sewage plants. The Clean Water Act sets requirements and standards for the concentrations of various contaminants in surface water. Along with enforcing the prevention of pollution, this act also sets guidelines for individuals and companies to follow in regards to preventing water pollution. These guidelines, requirements and standards help reinforce the goal of restoring and maintaining the physical, biological, and chemical integrity of the nation's water (EPA 2006b). During the time of the acts amendment, little to no attention was paid to pollution caused by runoff from construction sites, farms, and streets, which are known as nonpoint sources. The 1980s brought around an increased awareness of nonpoint source pollution which in turn caused an evolution of the Clean Water Act (EPA 2006a). This shift went from limiting the amount of pollution individual facilities can discharge to an equal emphasis on protecting healthy waters and restoring damaged ones (107th Congress of the United States of America 2002).

Before the Clean Water Act, nearly all of main water bodies in the United States were plagued with eutrophication. The water quality criteria set forth by the Clean Water Act have

reduced and maintained excess nutrient and pollution discharges into the U.S.'s bodies of water (107th Congress of the United States of America 2002). While the Water Quality Criteria help to protect human health and the environment, it is the regulatory tools within the Clean Water Act that help maintain and reinforce the criteria. With these tools, the Environmental Protection Agency (EPA) has set water quality standards of all U.S. bodies of water. The policy behind water quality standards requires that States designated the appropriate water uses to be achieved and protected. The use and value of the water body is taken into consideration to designate appropriate water use. In designating uses for the water body, the States look at the physical, chemical, and biological characteristics of that specific source. It is these characteristics that designate water supplies from public, recreational, industrial, and navigational uses (EPA 2006c).

The Local Problem

The use of water from the Carmel River is regulated through agencies such as the National Oceanic and Atmospheric Administration (NOAA) Fisheries, the Monterey Peninsula Water Management District (MPWMD), the California State Water Resources Agency and the Monterey County Public Health Department. The Carmel River watershed (figure 1) is also home to threatened species such as the steelhead trout and red legged frog. California-American Water Company uses the groundwater fed by the Carmel River in Monterey County to fulfill the water needs of many of their Monterey Peninsula clients. The water from the Carmel River is also used by the MPWMD as a coastal water project to store the water from the river system during rain seasons, in underground aquifers to be later used during dry seasons. These agencies, species, clients and individuals are all stakeholders of a potential problem reported by MPWMD.

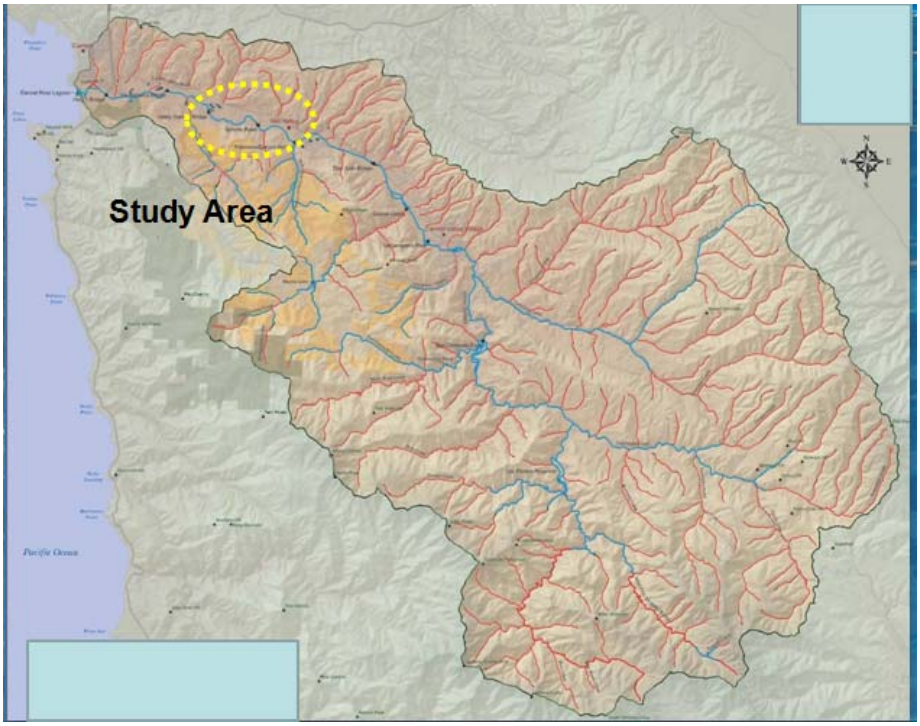

Figure 1: Locater map of Carmel River watershed and relationship to study area.

Bad smell, foamy water, oily sediment on banks, and color changes in the river have been reported by the MPWMD staff. The location of these observations is around the Mid-Valley Shopping Center on Carmel Valley Road. These observations have been reported near Robinson Canyon Road, Red Rock Canyon Road, and Schulte Road as early as 2001 (Figure 2). All of these visual indicators of contamination are consistent with wastewater contamination, but no source has been identified. Fisheries staff of the MPWMD believe that degradation of water quality in the Carmel River may negatively impact aquatic life in the river system particularly threatened species however MPWMD has not had the budget to investigate a contamination in the past. These indicators of contamination have become more frequent in recent years, raising concern that the contamination may pose a threat to the Carmel River habitat.

Figure 2: Map of Mid-Valley Carmel River and Possible Sources of Contamination.

Figure 2 shows the Mid-Valley section of the Carmel River, where intermittent contamination has been observed. This section includes many homes, the Mid-Valley shopping center, and a golf course, any of which could be the source of contamination. Each home uses a septic tank and leach field. The high amounts of bacteria and nutrients contained within a septic

system are potential sources of contamination if failure of the system were to occur. There could possibly be illegal dumping of effluent collected from local septic tanks or waste collected by local equestrian centers by septic collection trucks. Another source of nutrients is the golf course, which uses large amounts of nitrogen fertilizers and irrigation water. Several irrigation drains are located around the golf course to allow excess water to runoff into the Carmel River. Depending on watering and fertilization schedules, excess nutrients and organic material such as grass clippings could account for contamination. An analytical study of water quality in the mid-valley section of the river will help determine the source or sources of contamination.

In an effort to identify the source and nature of the intermittent contamination on the mid-valley section of the Carmel River, this capstone addresses the following questions:

1. Is intermittent discharge of frequent enough to be detected by monthly sampling.
2. Where does discharge occur and how fare downstream can it be detected?
3. Is there any seasonal pattern in the discharge affecting the river?

Hypotheses to test these questions are;

H1: Systematic dry-season monthly water quality testing will find surfactant, nutrient, or coliform contamination;.

H2: The source of contamination is the golf course which is upstream of Red Rock Canyon and downstream of Scarlett Road.

H3: The source of contamination is residential septic systems which are upstream of Schulte Road and downstream of Robinson Canyon.

To test these hypotheses, water quality was sampled systematically upstream and downstream of the suspected sources of contamination from April 2007 to October 2007.

Physical and inorganic water quality properties as well as urea, total nitrogen, and *E coli* were collected at each of five sites in the mid-valley section of the Cxel River.

Site Description

In an effort to identify the source, extent and any seasonal variability in the intermittent contamination previously observed by MPWMD staff, five sites near the observed contaminations were sampled monthly from April to October 2007 based on the criteria shown in Table 1, with a site map shown in figure 3.

Table 1: Site numbering, location and sample site description.

Site #	Location	Description
1	Scarlett Well	Above contamination area to collect a non-affected clean water source
2	Robinson Canyon	Storm drain for Carmel Valley Ranch golf course
3	Red Rock Canyon	Below Carmel Valley Ranch and Mid-Valley Shopping center
4	Schulte Road	Furthest downstream of contamination area and most contaminated area.
5	Cypress Well	Below contamination area.

Sites were chosen because Scarlett well is upstream above the reported contamination. Cypress Well is 5 miles downstream of reported contamination, and 20 miles from the river mouth. Robinson Canyon, Red Rock Canyon, and Schulte Road are the sites where water discoloration, odor, and foam have reported.

During July, downstream from the Scarlett Road sample site and upstream from the Robinson Canyon Sample site a drainage pipe was discharging into the Carmel River. This discharge was strong in odor, color, and produced foam. Prior to July, this discharge was not active and could not be analyzed. All monthly sampling following July included drainage pipe form analysis. Figure 3 shows an aerial photograph of the Mid-Valley section of the Carmel River all sample sites used in this study.

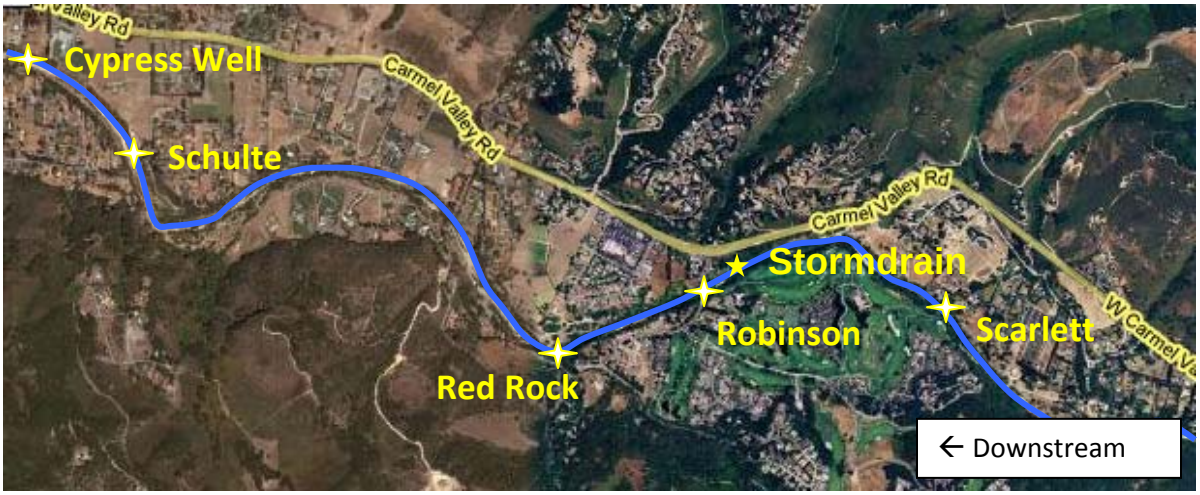

Figure 3: Map of Mid-Valley Carmel River and Sample Site Location

Sample Analysis

Each site looked for contaminants that would indicate the presence of wastewater, and would be found in far less concentrations in surface water. General physical and mineral analyses were comprised of color, odor, turbidity, and pH and major cations, which included calcium, sodium, magnesium, and potassium. Routine monthly sampling tested for high-level coliform bacteria, surfactants, phosphate, nitrate, ammonia, urea and low levels of total Kjeldahl nitrogen. Each of these tests has their own corresponding sample container.

All samples were collected in clean HDPE plastic containers. Samples for coliform testing were collected in 100ml Sterilized HDPE containers with a refrigerated hold time of 24 hours. Kjeldahl nitrogen and ammonia were collected in a 250ml bottle in the field and preserved with sulfuric acid at the laboratory. Urea sample were collected in a 40ml bottle and frozen to exclude hold time. Hold time for General Physical and Mineral analysis is 48 hours, however pH must be taken within 12 hours using an orion 960 pH probe.

Each container was recorded with date and time of collection along with sample identification. I conducted transportation and samples were kept in an ice cooler from sample site to laboratory. Required preservatives were added in the lab before samples were refrigerated or frozen. All analysis were completed within required sample hold times (Standards of Methods, 1998; Pfaff, 1993). Table 2 lists the methods and corresponding tests that were completed by routine monthly sampling.

Table 2: List of method numbers, associated tests and container types.

Test	Method	Container
Total Coliform (Enumeration)	SM9223	100 ml sterile
Surfactants	SM5540C	500 ml plastic
General Physical and Mineral	Analysis Group **	1 L Plastic
Phosphate, Ortho	EPA 300.0	500 ml plastic
Nitrate	EPA 300.0	500 ml plastic
Ammonia and Kjeldahl Nitrogen	SM4500-NH3 E/F	250 ml plastic (Pres.)
Urea	(Mulvenna, P, 1992)	100 ml plastic (froze)

**Gen Phy. & Min. includes methods SM4500, SM2320B, SM2510B, SM2540C, SM3111B, and EPA 300.0 (Standards of Methods, 1998; Pfaff, 1993)

Results

Raw water quality data for each site and sampling dates are included in the Appendicies. Results for E. coli, Alkalinity and Urea show that a stormdrain pipe which is associated with the nearby golf course is discharging contaminated water into Carmel River. These results only show that the discharge is contaminated and that there is no obvious affect on the water quality of the river. E. Coli, Alkalinity and Urea were the more comparable analyses and is why they are represented in the report.

Figure 4 is a graph of E. coli quantatray coliform data for each site and sampling data plotted as log form of MPN/100mL versus the sampling data. All sites except Robinson Cyn. up

till august were less than 126 MPN/100mL. Robinson Cyn. was greater than 126 MPN/100mL on June 11, and September 20. Scarlett Rd. was greater than 126 MPN/100mL on September 20. The stormdrain was not active on sampling days prior to July and was not active in September. Note that the highest E. coil counts from the stormdrain during July and August are 10,000 times greater than their upstream sites at Scarlett Rd.

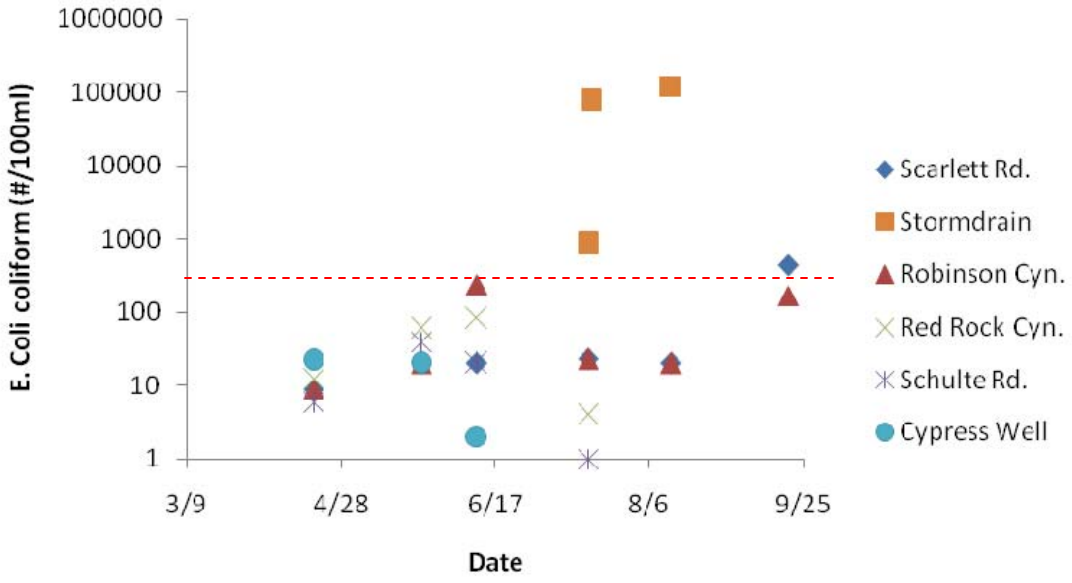

Figure 4: E. coli coliform quantatray data in log MPN/100 ml for each sampling date during 2007. Dashed line represents standard of 126 MPN/100 ml. Note that sample sites are arranged in legend from upstream at top to downstream at bottom.

Stormdrain was only flowing during specific months and explains why data points don't exist prior to July.

Figure 5 is a graph of total alkalinity in mg/L $CaCO_3$ versus the date each sample site was collected. The three stormdrain samples taken within July and August have a higher alkalinity than the original sample sites that still remain at that time. All sites in river were less than 200 mg/L CaCO3 while all stormdrain samples were greater than 200 mg/L CaCO3.

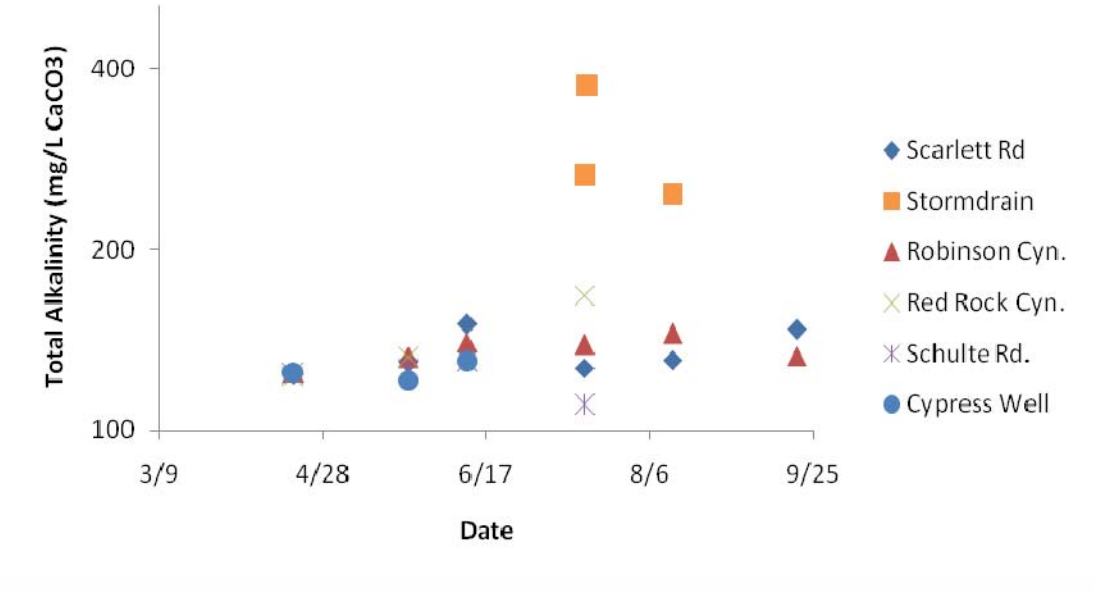

Figure 5: Alkalinity analysis for sampling sites on the Carmel River. Note that sample sites are arranged in legend from upstream at top to downstream at bottom.

Figure 6 is a graph of Urea-N in ug/L versus the date each sample site was collected. The three stormdrain samples taken within July and August have higher urea than the original sample sites that still remain at that time. All stormdrain samples contained greater than 60 ug/L of Urea Nitrogen. High urea in sample sites in June can be linked to stagnant pools formed by dry conditions on the Carmel River.

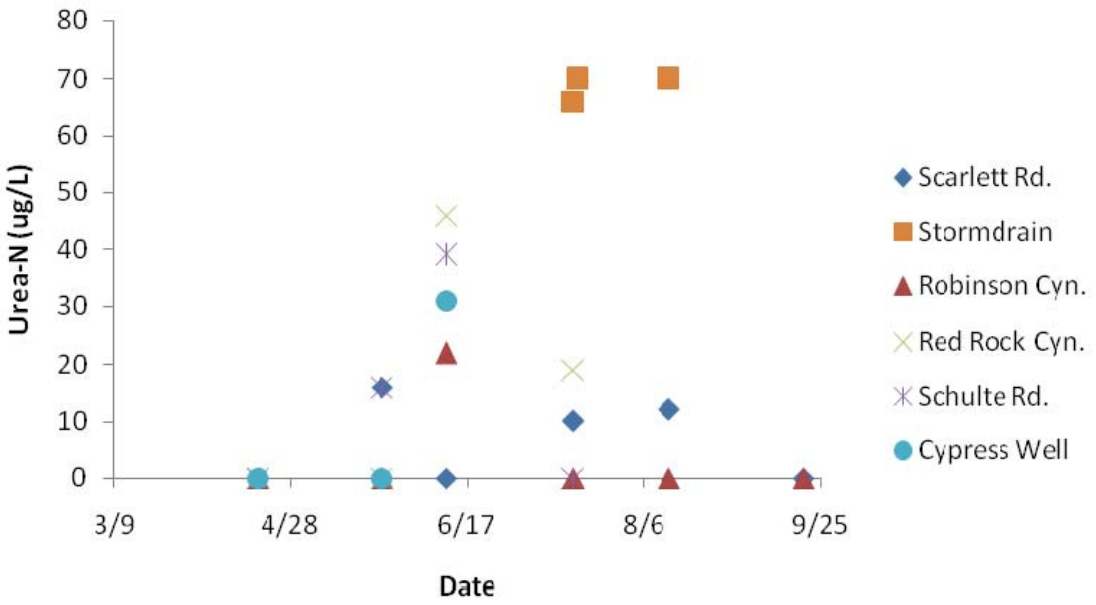

Figure 6: Urea data for sampling sites on Carmel River. Note that sample sites are arranged in legend from upstream at top to downstream at bottom.

Figure 7 shows USGS data for Carmel River over the sampling period. Over the months less and less water has reached the sampling sites. As these sites have dried up, those sites had to be abandoned. However, as discharge decreased in the Carmel River it was noticed that flow from the storm drain was constant even though there was no precipitation at all.

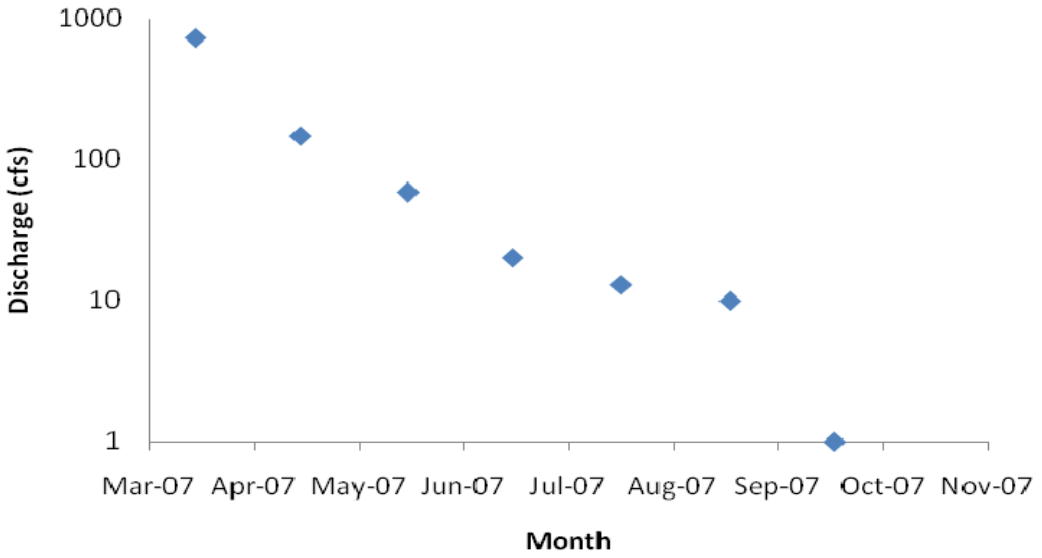

Figure 7: USGS discharge data of Carmel River at Robles Del Rio (USGS 2007).

TKN, nitrate and phosphate were all below water quality limits for surface water on sampling sites and not a problem.

Table 3 shows an overview of analysis performed on stormdrain sample site and its comparison to upstream at Scarlett Rd. and downstream at Robinson Cyn. All sample parameter values are far greater than both Scarlett Rd. and Robinson Cyn. values. Values pertaining to downstream at Robinson Cyn. are greater compared to values upstream at Scarlett Rd. However future analysis will need to confirm this.

Table 3: Stormdrain analysis compared to Scarlett Rd. and Robinson Cyn rd.

	Stormdrain			**Scarlett Rd. (Upstream)**	**Robinson Cyn. (Downstream)**
	7/17/2007	**7/18/2007**	**8/13/2007**	**8/13/2008**	**8/13/2008**
Coliform, E. coli (Quantitray)	866	77010	120959	< 20	148
Coliform, Total (Quantitray)	38500	241920	> 120960	2792	4286
Alkalinity, Total (as CaCO3)	266	374	247	131	145
pH (Laboratory)	8.2	7.2	7.6	8	7.5
Calcium	84	105	67	40	55
Magnesium	23	28	19	14	15
Kjehldahl Nitrogen	7.4	50.8	10.1	0	0
Urea-N	66	70	70	12	0
Ammonia-N	4.09	32.00	7.80	0.00	0.00
Nitrate as NO3	0	0	0	0	0
o-Phosphate-P	2.09	1.42	2.03	0.00	0.00
Potassium	35.3	43	21	3	3.1
Sodium	74	156	54	29	35
Specific Conductance (E.C)	907	1262	808	468	581
Total Diss. Solids	612	701	532	288	372

Discussion

The results of the analysis show that a pipe located upstream of Red Rock Canyon and downstream of Scarlett Road was discharging contamination each time it was sampled. However, pipe discharge was only sampled during July and August and did not occur during other sampling months. The original sample sites in the mid-valley section of the Carmel River were not contaminated during the dry season with the exception of Robinson canyon, which had E. coli above the allowed fresh water designated single sample limit of 235/100 ml (SWQCB 2001).

Results refuted the hypothesis that systematic monthly sampling would not find evidence of due to the fact that discharge was a one-time event, was too infrequent, or was associated with flow events that were not included in the proposed dry-season sampling plan. While there was no evidence of contamination in the river, the evidence collected in this study and past observations by the Monterey Peninsula Water Management District suggest that the stormdrain may be discharging all the time. The results did not support the hypothesis that the source of contamination upstream of Schulte Road or downstream of Robinson Canyon and was frequent enough to be detected by monthly summer sampling. If a second contamination existed between Schulte Road and Robinson Canyon then it was too infrequent to be observed.

With six sample sites analyzed each month, I found that discharge from a stormdrain outlet near Carmel Valley Ranch golf course appears to be the only source of contamination, which occurred only during July and August of the five months of testing and occurred on days when there was no precipitation.

Downstream sites from stormdrain had concentrations similar to those found upstream of the stormdrain outlet at Scarlett Rd. Sites located downstream were unaffected by contamination

from the stormdrain based on a comparison of water from Robinson Canyon located roughly 50 yards downstream and water from Scarlett well located upstream from stormdrain. Figure 8 shows the contamination and the location referenced to Carmel River.

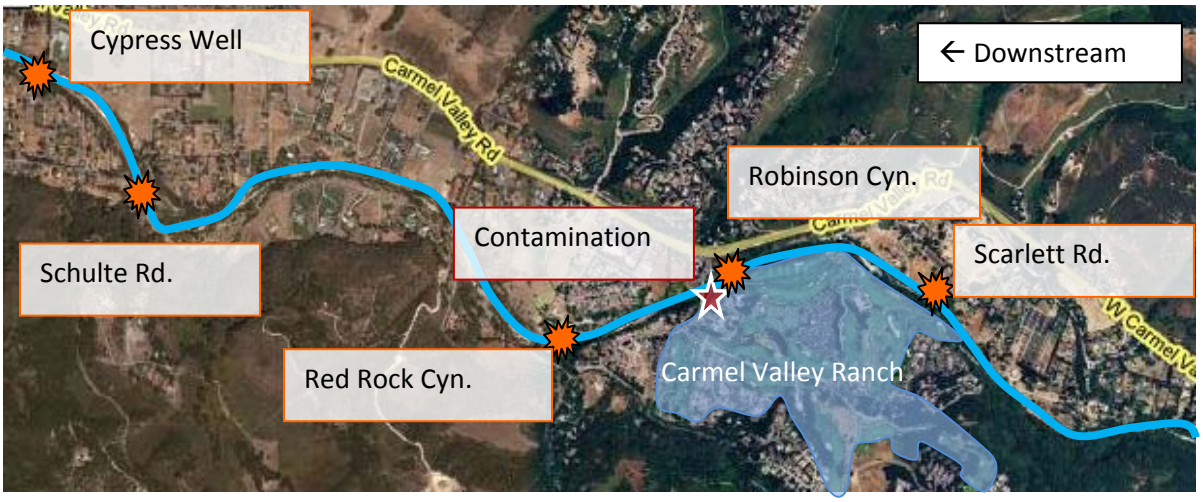

Figure 8: Location of contamination on Carmel River referenced to Carmel Valley Ranch Golf Course.

Carmel Valley Ranch golf course has several stormdrains that feed into the Carmel River. The contamination could possibly be linked to amendment runoff from the golf course due to water removal during regular watering. Grass clippings were found in the discharge and in the river where the flow intercepted. Amendments such as fertilizers would be high in nutrients such as urea and high in calcium carbonate as a pH buffer. This easily explains the high urea and high alkalinity, however this would not explain the high amounts of E. *coli* present in the discharge.

One employee mentioned that valves that are very old link the stormdrains around the golf course and that some of these valves have been rusted open or closed. With this information, one potential cause of contaminated discharge could be linked to turf grass management where,

regular maintenance and cleaning of equipment occurs near stormdrain inlets. Maintenance shops that are located near a stormdrain inlet could be collecting the wastewater from washing lawn mowers and fertilizer dispensers which through these rusted valves, unintentionally leads to the stormdrain located near Robinson Cyn.

E. *coli* could be explained by the amount of wildlife and birds that live on the golf course but the amounts are far too high to be explained by wildlife alone (Vidotto et. al. 1990). Observed grass clippings as organic matter were found in the discharge water and in the river. Lawn mowers could mobilize bird/avian fecal matter combined with cleaning of machinery near stormdrain inlets. Regular irrigation watering of golf links cold also be added to any of these combinations.

High amounts of E. *coli* found in the storm drain discharge (figure 4) could be correlated to the urea-based nutrients also being discharged (figure 6). The E. *coli* amounts far exceed the California Regional Water Quality Control Board fresh water designated single sample limits of 235 E. coli per 100 ml (SWQCB 2001). Research has shown that algae growth and E. *coli* have been linked together in the waters of Lake Michigan (Whitman et. al. 2003). The research conducted by Whitman et. al. shows that the breakdown of algae produces the necessary habitat for bacteria such as E. *coli* to reproduce. The same scenario could be taking place within the stormdrain pipes of Carmel Valley Ranch. Decomposition of grass clipping along with high amounts of nutrients such as urea provides the catalyst for E. *coli* to multiply.

Conclusion

With the contamination pinpointed at the stormdrain leading from the Carmel Valley Ranch Golf course it is still unclear if the golf course is at fault. Analysis of the stormdrain has shown that the discharge is high in urea, alkalinity, and E. *coli.* While there is no direct proof that this discharge is affecting the Carmel River downstream, discharge does exceed the E. coli water quality standard for recreational surface water. Water quality standards set by the clean water act enforce these contaminates for the protection of the river system. This is important because the Carmel River is threatened species habitat and a source of drinking water for the Monterey Peninsula.

Acknowledgements

I would like to thank Joe Oliver and Cory Hamilton as well as the staff of MPWMD for helping me get started on my capstone. I would also like to thank my parents and employers David and Sigrid Holland for their guidance and training in the analysis completed by Monterey Bay Analytical Services. I give my gratitude to my advisor Sharon Anderson, and my professor and second reader Marc LosHuertos for the countless reviews, revisions and finalizations. Finally I thank my fiancé Keli Winters for putting up with this last step to a new beginning.

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ELAP Certification Number: 2385

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

 Tuesday, November 13, 2007

Lab Number: AA42000

Collection Date/Time: 9/20/2007 11:00 Sample Collector: WEIDNER-HOLLA
Submittal Date/Time: 9/20/2007 11:15 Sample ID

Sample Description: Robinson Canyon

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**147**		10	9/21/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05	10/2/2007
Calcium	SM3111B	mg/L	**57**		1	9/25/2007
Chloride	EPA300.0	mg/L	**48**		1	9/21/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**432**		1	9/21/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**4718**		1	9/21/2007
Fluoride	EPA300.0	mg/L	**0.32**		0.10	9/21/2007
Hardness (as CaCO3)	SM2340B	mg/L	**212**		10	9/26/2007
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	**Not detected**		0.5	10/4/2007
Magnesium	SM3111B	mg/L	**17**		1	9/25/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	9/21/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	9/21/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05	9/21/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.7**			9/21/2007
Potassium	SM3111B	mg/L	**3.2**		0.5	9/25/2007
Sodium	SM3111B	mg/L	**44**		1	9/25/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**606**		1	9/25/2007
Sulfate	EPA300.0	mg/L	**83**		1	9/21/2007
Total Diss. Solids	SM2540C	mg/L	**373**		10	9/22/2007
Turbidity	EPA180.1	NTU	**0.40**		0.05	9/20/2007

Sample Comments:

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD J = Result is less than PQL

Lab Number: AA42001

Collection Date/Time: 9/20/2007 11:15 Sample Collector: WEIDNER-HOLLA
Submittal Date/Time: 9/20/2007 11:15 Sample ID

Sample Description: Scarlett Rd

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	133		10	9/21/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05	10/2/2007
Calcium	SM3111B	mg/L	42		1	9/25/2007
Chloride	EPA300.0	mg/L	31		1	9/21/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	170		1	9/21/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	4962		1	9/21/2007
Fluoride	EPA300.0	mg/L	0.31		0.10	9/21/2007
Hardness (as CaCO3)	SM2340B	mg/L	163		10	9/26/2007
Kjehldahl Nitrogen	SM4500-NH3 B,	mg/L	Not detected		0.5	10/4/2007
Magnesium	SM3111B	mg/L	14		1	9/25/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	9/21/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	9/21/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05	9/21/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.8			9/21/2007
Potassium	SM3111B	mg/L	2.9		0.5	9/25/2007
Sodium	SM3111B	mg/L	32		1	9/25/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	469		1	9/25/2007
Sulfate	EPA300.0	mg/L	59		1	9/21/2007
Total Diss. Solids	SM2540C	mg/L	295		10	9/22/2007
Turbidity	EPA180.1	NTU	0.45		0.05	9/20/2007

Sample Comments:

Report Approved by:

Sigrid Weidner-Holland
Laboratory Director

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD J = Result is less than PQL

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Friday, September 14, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA41116

Collection Date/Time: 8/13/2007 13:21 Sample Collector: HOLLAND T
Submittal Date/Time: 8/13/2007 14:59 Sample ID

Sample Description: Robinson Canyon

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**145**		10	8/14/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05	8/14/2007
Calcium	SM3111B	mg/L	**55**		1	8/15/2007
Chloride	EPA300.0	mg/L	**40**		1	8/14/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**148**		1	8/13/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**4286**		1	8/13/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**8**		1	8/14/2007
Fluoride	EPA300.0	mg/L	**0.37**		0.10	8/14/2007
Hardness (as CaCO3)	SM2340B	mg/L	**199**		10	8/15/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5	8/24/2007
Magnesium	SM3111B	mg/L	**15**		1	8/15/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	8/14/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	8/14/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05	8/14/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.5**			8/14/2007
Potassium	SM3111B	mg/L	**3.1**		0.5	8/15/2007
Sodium	SM3111B	mg/L	**35**		1	8/15/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**581**		1	8/14/2007
Sulfate	EPA300.0	mg/L	**76**		1	8/14/2007
Total Diss. Solids	SM2540C	mg/L	**372**		10	8/15/2007
Turbidity	EPA180.1	NTU	**0.4**		0.05	8/14/2007
Urea-N	Mulvenna&Sav	ug/L	**Not detected**		10	9/4/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments
J = Result is less than PQL

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Trevor Weidenr-Holland
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Friday, September 14, 2007

Lab Number: AA41117

Collection Date/Time: 8/13/2007 13:38 Sample Collector: HOLLAND T
Submittal Date/Time: 8/13/2007 14:59 Sample ID

Sample Description: Scarlett Road

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	131		10	8/14/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05	8/14/2007
Calcium	SM3111B	mg/L	40		1	8/15/2007
Chloride	EPA300.0	mg/L	27		1	8/14/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	< 20		1	8/13/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	2792		1	8/13/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	8		1	8/14/2007
Fluoride	EPA300.0	mg/L	0.32		0.10	8/14/2007
Hardness (as CaCO3)	SM2340B	mg/L	158		10	8/15/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	Not detected		0.5	8/24/2007
Magnesium	SM3111B	mg/L	14		1	8/15/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	8/14/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	8/14/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05	8/14/2007
pH (Laboratory)	SM4500-H+B	STD. Units	8.0			8/14/2007
Potassium	SM3111B	mg/L	3.0		0.5	8/15/2007
Sodium	SM3111B	mg/L	29		1	8/15/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	468		1	8/14/2007
Sulfate	EPA300.0	mg/L	55		1	8/14/2007
Total Diss. Solids	SM2540C	mg/L	288		10	8/15/2007
Turbidity	EPA180.1	NTU	0.2		0.05	8/14/2007
Urea-N	Mulvenna&Sav	ug/L	127		10	9/4/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

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J = Result is less than PQL

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Friday, September 14, 2007

Trevor Weidenr-Holland
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Lab Number: AA41118

Collection Date/Time: 8/13/2007 13:24 Sample Collector: HOLLAND T
Submittal Date/Time: 8/13/2007 14:59 Sample ID

Sample Description: Storm Drain @ Robinson Canyon

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	247		10	8/14/2007
Ammonia-N	SM4500NH3 D	mg/L	7.8		0.05	8/14/2007
Calcium	SM3111B	mg/L	67		1	8/15/2007
Chloride	EPA300.0	mg/L	54		1	8/14/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	120959		1	8/13/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	>120960		1	8/13/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	300		1	8/14/2007
Fluoride	EPA300.0	mg/L	0.17		0.10	8/14/2007
Hardness (as CaCO3)	SM2340B	mg/L	246		10	8/15/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	10.1		0.5	8/24/2007
Magnesium	SM3111B	mg/L	19		1	8/15/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	8/14/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	8/14/2007
o-Phosphate-P	EPA300.0	mg/L	2.03		0.05	8/14/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.6			8/14/2007
Potassium	SM3111B	mg/L	21		0.5	8/15/2007
Sodium	SM3111B	mg/L	54		1	8/15/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	808		1	8/14/2007
Sulfate	EPA300.0	mg/L	75		1	8/14/2007
Total Diss. Solids	SM2540C	mg/L	532		10	8/15/2007
Turbidity	EPA180.1	NTU	18		0.05	8/14/2007
Urea-N	Mulvenna&Sav	ug/L	70		10	9/4/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

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Saturday, August 18, 2007

Trevor Weidenr-Holland
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Lab Number: AA40572

Collection Date/Time: 7/18/2007 11:50 Sample Collector: CHAMILTON D
Submittal Date/Time: 7/18/2007 13:55 Sample ID

Sample Description: Carmel River 50ft u/s of Robinson Canyon Ridge (directly ftom black pipe)

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	374		10	7/24/2007
Ammonia-N	SM4500NH3 F,	mg/L	32.0		0.5	7/25/2007
Calcium	SM3111B	mg/L	92		1	7/24/2007
Chloride	EPA300.0	mg/L	64		1	7/20/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	77010		1	7/18/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	241920		1	7/18/2007
Fluoride	EPA300.0	mg/L	0.60		0.10	7/20/2007
Hardness (as CaCO3)	SM2340B	mg/L	329		10	8/17/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	50.8		0.5	7/23/2007
Magnesium	SM3111B	mg/L	24		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	7/20/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/20/2007
o-Phosphate-P	EPA300.0	mg/L	1.42		0.05	7/20/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.2			7/19/2007
Potassium	SM3111B	mg/L	36		0.5	7/24/2007
Sodium	SM3111B	mg/L	159		1	7/30/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	1262		1	7/23/2007
Sulfate	EPA300.0	mg/L	201		1	7/20/2007
Total Diss. Solids	SM2540C	mg/L	701		10	7/29/2007
Turbidity	EPA180.1	NTU	45		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	70		10	7/20/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, August 18, 2007

Trevor Weidenr-Holland
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Monterey, CA 93940

Lab Number: AA40525

Collection Date/Time: 7/17/2007 10:45 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 10:45 Sample ID

Sample Description: Schulte Rd.

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	115		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05	7/25/2007
Calcium	SM3111B	mg/L	39		1	7/24/2007
Chloride	EPA300.0	mg/L	25		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	< 1		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	7825		1	7/17/2007
Fluoride	EPA300.0	mg/L	0.30		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	151		10	8/17/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	0.9		0.5	7/23/2007
Magnesium	SM3111B	mg/L	13		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.0			7/17/2007
Potassium	SM3111B	mg/L	3.0		0.5	7/24/2007
Sodium	SM3111B	mg/L	29		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	444		1	7/23/2007
Sulfate	EPA300.0	mg/L	57		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	281		10	7/21/2007
Turbidity	EPA180.1	NTU	7.0		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	Not detected		10	7/20/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

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J = Result is less than PQL

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Saturday, August 18, 2007

Trevor Weidenr-Holland
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Monterey, CA 93940

Lab Number: AA40526

Collection Date/Time: 7/17/2007 11:15 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:15 Sample ID

Sample Description: Red Rock Canyon

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	168		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05	7/25/2007
Calcium	SM3111B	mg/L	78		1	7/24/2007
Chloride	EPA300.0	mg/L	61		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	4		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	8035		1	7/17/2007
Fluoride	EPA300.0	mg/L	0.38		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	261		10	8/17/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	0.7		0.5	7/23/2007
Magnesium	SM3111B	mg/L	16		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.1			7/17/2007
Potassium	SM3111B	mg/L	2.8		0.5	7/24/2007
Sodium	SM3111B	mg/L	49		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	744		1	7/23/2007
Sulfate	EPA300.0	mg/L	107		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	481		10	7/21/2007
Turbidity	EPA180.1	NTU	3.0		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	19		10	7/20/2007

Sample Comments:

Report Approved by:

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory: See External Laboratory Report attachments.

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Saturday, August 18, 2007

Trevor Weidenr-Holland
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Monterey, CA 93940

Lab Number: AA40527

Collection Date/Time: 7/17/2007 11:35 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:35 Sample ID

Sample Description: Robinson Canyon

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**145**		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05	7/25/2007
Calcium	SM3111B	mg/L	**54**		1	7/24/2007
Chloride	EPA300.0	mg/L	**36**		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**10**		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**3415**		1	7/17/2007
Fluoride	EPA300.0	mg/L	**0.30**		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	**201**		10	8/17/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5	7/23/2007
Magnesium	SM3111B	mg/L	**16**		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	**0.15**		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.4**			7/17/2007
Potassium	SM3111B	mg/L	**3.1**		0.5	7/24/2007
Sodium	SM3111B	mg/L	**34**		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**551**		1	7/23/2007
Sulfate	EPA300.0	mg/L	**72**		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	**340**		10	7/21/2007
Turbidity	EPA180.1	NTU	**0.40**		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	**Not detected**		10	7/20/2007

Sample Comments:

Report Approved by:

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory, See External Laboratory Report attachments.

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ELAP Certification Number: 2385

Saturday, August 18, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA40528

Collection Date/Time: 7/17/2007 11:51 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:51 Sample ID

Sample Description: Scarlett Road

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	127		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05	7/25/2007
Calcium	SM3111B	mg/L	43		1	7/24/2007
Chloride	EPA300.0	mg/L	26		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	23		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	3350		1	7/17/2007
Fluoride	EPA300.0	mg/L	0.29		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	161		10	8/17/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	Not detected		0.5	7/23/2007
Magnesium	SM3111B	mg/L	13		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.9			7/17/2007
Potassium	SM3111B	mg/L	3.0		0.5	7/24/2007
Sodium	SM3111B	mg/L	28		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	455		1	7/23/2007
Sulfate	EPA300.0	mg/L	53		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	278		10	7/21/2007
Turbidity	EPA180.1	NTU	0.20		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	10		10	7/20/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

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Saturday, August 18, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA40529

Collection Date/Time: 7/17/2007 11:40 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:40 Sample ID

Sample Description: Storm Drain @ Robinson Canyon (Hole 6)

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**266**		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	**4.09**		0.05	7/25/2007
Calcium	SM3111B	mg/L	**74**		1	7/24/2007
Chloride	EPA300.0	mg/L	**74**		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**866**		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**38500**		1	7/17/2007
Fluoride	EPA300.0	mg/L	**Not detected**		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	**271**		10	8/17/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**7.4**		0.5	7/23/2007
Magnesium	SM3111B	mg/L	**21**		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	**2.09**		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**8.2**			7/17/2007
Potassium	SM3111B	mg/L	**32**		0.5	7/24/2007
Sodium	SM3111B	mg/L	**68**		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**907**		1	7/23/2007
Sulfate	EPA300.0	mg/L	**67**		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	**612**		10	7/21/2007
Turbidity	EPA180.1	NTU	**3.0**		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	**66**		10	7/20/2007

Sample Comments:

Report Approved by: S. W.-H.

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, August 18, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA40572

Collection Date/Time: 7/18/2007 11:50 Sample Collector: CHAMILTON D
Submittal Date/Time: 7/18/2007 13:55 Sample ID

Sample Description: Carmel River 50ft u/s of Robinson Canyon Ridge (directly ftom black pipe)

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	374		10	7/24/2007
Ammonia-N	SM4500NH3 F,	mg/L	32.0		0.5	7/25/2007
Calcium	SM3111B	mg/L	92		1	7/24/2007
Chloride	EPA300.0	mg/L	64		1	7/20/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	77010		1	7/18/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	241920		1	7/18/2007
Fluoride	EPA300.0	mg/L	0.60		0.10	7/20/2007
Hardness (as CaCO3)	SM2340B	mg/L	329		10	8/17/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	50.8		0.5	7/23/2007
Magnesium	SM3111B	mg/L	24		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	7/20/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/20/2007
o-Phosphate-P	EPA300.0	mg/L	1.42		0.05	7/20/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.2			7/19/2007
Potassium	SM3111B	mg/L	36		0.5	7/24/2007
Sodium	SM3111B	mg/L	159		1	7/30/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	1262		1	7/23/2007
Sulfate	EPA300.0	mg/L	201		1	7/20/2007
Total Diss. Solids	SM2540C	mg/L	701		10	7/29/2007
Turbidity	EPA180.1	NTU	45		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	70		10	7/20/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

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Saturday, August 11, 2007

Trevor Weidenr-Holland
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Monterey, CA 93940

Lab Number: AA40525

Collection Date/Time: 7/17/2007 10:45 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 10:45 Sample ID

Sample Description: Schulte Rd.

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**110**		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05	7/25/2007
Calcium	SM3111B	mg/L	**44**		1	7/24/2007
Chloride	EPA300.0	mg/L	**25**		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**< 1**		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**7825**		1	7/17/2007
Fluoride	EPA300.0	mg/L	**0.30**		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	**168**		10	7/24/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**0.9**		0.5	7/23/2007
Magnesium	SM3111B	mg/L	**14**		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.0**			7/17/2007
Potassium	SM3111B	mg/L	**3.5**		0.5	7/24/2007
Sodium	SM3111B	mg/L	**34**		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**444**		1	7/23/2007
Sulfate	EPA300.0	mg/L	**57**		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	**281**		10	7/21/2007
Turbidity	EPA180.1	NTU	**7.0**		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	**Not detected**		10	7/20/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, August 11, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA40526

Collection Date/Time: 7/17/2007 11:15 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:15 Sample ID

Sample Description: Red Rock Canyon

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	168		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05	7/25/2007
Calcium	SM3111B	mg/L	90		1	7/24/2007
Chloride	EPA300.0	mg/L	61		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	4		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	8035		1	7/17/2007
Fluoride	EPA300.0	mg/L	0.38		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	299		10	7/24/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	0.7		0.5	7/23/2007
Magnesium	SM3111B	mg/L	18		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.1			7/17/2007
Potassium	SM3111B	mg/L	3.2		0.5	7/24/2007
Sodium	SM3111B	mg/L	58		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	744		1	7/23/2007
Sulfate	EPA300.0	mg/L	107		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	481		10	7/21/2007
Turbidity	EPA180.1	NTU	3.0		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	19		10	7/20/2007

Sample Comments:

Report Approved by:

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, August 11, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA40527

Collection Date/Time: 7/17/2007 11:35 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:35 Sample ID

Sample Description: Robinson Canyon

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	139		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05	7/25/2007
Calcium	SM3111B	mg/L	60		1	7/24/2007
Chloride	EPA300.0	mg/L	36		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	10		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	3415		1	7/17/2007
Fluoride	EPA300.0	mg/L	0.30		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	220		10	7/24/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	Not detected		0.5	7/23/2007
Magnesium	SM3111B	mg/L	17		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	0.15		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.4			7/17/2007
Potassium	SM3111B	mg/L	3.5		0.5	7/24/2007
Sodium	SM3111B	mg/L	38		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	551		1	7/23/2007
Sulfate	EPA300.0	mg/L	72		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	340		10	7/21/2007
Turbidity	EPA180.1	NTU	0.40		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	Not detected		10	7/20/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

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Saturday, August 11, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA40528

Collection Date/Time: 7/17/2007 11:51 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:51 Sample ID

Sample Description: Scarlett Road

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**127**		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05	7/25/2007
Calcium	SM3111B	mg/L	**46**		1	7/24/2007
Chloride	EPA300.0	mg/L	**26**		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**23**		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**3350**		1	7/17/2007
Fluoride	EPA300.0	mg/L	**0.29**		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	**177**		10	7/24/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5	7/23/2007
Magnesium	SM3111B	mg/L	**15**		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.9**			7/17/2007
Potassium	SM3111B	mg/L	**3.2**		0.5	7/24/2007
Sodium	SM3111B	mg/L	**31**		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**455**		1	7/23/2007
Sulfate	EPA300.0	mg/L	**53**		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	**278**		10	7/21/2007
Turbidity	EPA180.1	NTU	**0.20**		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	**10**		10	7/20/2007

Sample Comments:

Report Approved by:

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, August 11, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA40529

Collection Date/Time: 7/17/2007 11:40 Sample Collector: HOLLAND T
Submittal Date/Time: 7/17/2007 11:40 Sample ID

Sample Description: Storm Drain @ Robinson Canyon (Hole 6)

Analyte	Method	Unit	Result	Qual	PQL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	266		10	7/23/2007
Ammonia-N	SM4500NH3 D	mg/L	4.09		0.05	7/25/2007
Calcium	SM3111B	mg/L	84		1	7/24/2007
Chloride	EPA300.0	mg/L	74		1	7/17/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	866		1	7/17/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	38500		1	7/17/2007
Fluoride	EPA300.0	mg/L	Not detected		0.10	7/17/2007
Hardness (as CaCO3)	SM2340B	mg/L	304		10	7/24/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	7.4		0.5	7/23/2007
Magnesium	SM3111B	mg/L	23		1	7/24/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	7/17/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	7/17/2007
o-Phosphate-P	EPA300.0	mg/L	2.09		0.05	7/17/2007
pH (Laboratory)	SM4500-H+B	STD. Units	8.2			7/17/2007
Potassium	SM3111B	mg/L	35.3		0.5	7/24/2007
Sodium	SM3111B	mg/L	74		1	7/24/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	907		1	7/23/2007
Sulfate	EPA300.0	mg/L	67		1	7/17/2007
Total Diss. Solids	SM2540C	mg/L	612		10	7/21/2007
Turbidity	EPA180.1	NTU	3.0		0.05	7/18/2007
Urea-N	Mulvenna&Sav	ug/L	66		10	7/20/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory: See External Laboratory Report attachments.

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Saturday, June 30, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA39763

Collection Date/Time: 6/11/2007 10:31 Sample Collector: HOLLAND T
Submittal Date/Time: 6/11/2007 10:31 Sample ID

Sample Description: Cypress Well

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	130		10		6/11/2007
Ammonia-N	SM4500NH3 D	mg/L	Not detected		0.05		6/25/2007
Calcium	SM3111B	mg/L	45		1		6/18/2007
Chloride	EPA300.0	mg/L	26		1	250	6/11/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	< 2		1	1	6/11/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	2966		1	1	6/11/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	3		1	15	6/12/2007
Fluoride	EPA300.0	mg/L	0.23		0.10	2.0	6/11/2007
Hardness (as CaCO3)	SM2340B	mg/L	170		10		6/26/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	Not detected		0.5		6/15/2007
Magnesium	SM3111B	mg/L	14		1		6/18/2007
Nitrate as NO3	EPA300.0	mg/L	Not detected		1	45	6/11/2007
Nitrite as NO2-N	EPA300.0	mg/L	Not detected		0.05	1.00	6/11/2007
Odor Threshold at 60 C	SM2150B	TON	1		1	3	6/12/2007
o-Phosphate-P	EPA300.0	mg/L	Not detected		0.05		6/11/2007
pH (Laboratory)	SM4500-H+B	STD. Units	7.5				6/11/2007
Potassium	SM3111B	mg/L	3.0		0.5		6/18/2007
Sodium	SM3111B	mg/L	28		1		6/18/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	466		1	900	6/12/2007
Sulfate	EPA300.0	mg/L	59		1	250	6/11/2007
Total Diss. Solids	SM2540C	mg/L	280		10	500	6/16/2007
Turbidity	EPA180.1	NTU	0.30		0.05	5.0	6/11/2007
Urea-N	Mulvenna&Sav	ug/L	31		10		6/12/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.
D = Method deviates from standard method due to insufficient sample for MS/MSD

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ELAP Certification Number: 2385

Saturday, June 30, 2007

Trevor Weidenr-Holland
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Monterey, CA 93940

Lab Number: AA39764

Collection Date/Time: 6/11/2007 10:55 Sample Collector: HOLLAND T
Submittal Date/Time: 6/11/2007 10:55 Sample ID

Sample Description: Schulte Rd.

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**130**		10		6/11/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		6/25/2007
Calcium	SM3111B	mg/L	**46**		1		6/18/2007
Chloride	EPA300.0	mg/L	**26**		1	250	6/11/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**20**		1	1	6/11/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**4718**		1	1	6/11/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**3**		1	15	6/12/2007
Fluoride	EPA300.0	mg/L	**0.26**		0.10	2.0	6/11/2007
Hardness (as CaCO3)	SM2340B	mg/L	**173**		10		6/26/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		6/15/2007
Magnesium	SM3111B	mg/L	**14**		1		6/18/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	45	6/11/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	6/11/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	6/12/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		6/11/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.5**				6/11/2007
Potassium	SM3111B	mg/L	**2.8**		0.5		6/18/2007
Sodium	SM3111B	mg/L	**28**		1		6/18/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**462**		1	900	6/12/2007
Sulfate	EPA300.0	mg/L	**56**		1	250	6/11/2007
Total Diss. Solids	SM2540C	mg/L	**270**		10	500	6/16/2007
Turbidity	EPA180.1	NTU	**0.40**		0.05	5.0	6/11/2007
Urea-N	Mulvenna&Sav	ug/L	**39**		10		6/12/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Monterey, CA 93940

Saturday, June 30, 2007

Lab Number: AA39765

Collection Date/Time: 6/11/2007 11:20 Sample Collector: HOLLAND T
Submittal Date/Time: 6/11/2007 11:20 Sample ID

Sample Description: Red Roack Canyon

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**130**		10		6/11/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		6/25/2007
Calcium	SM3111B	mg/L	**47**		1		6/18/2007
Chloride	EPA300.0	mg/L	**26**		1	250	6/11/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**82**		1	1	6/11/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**3564**		1	1	6/11/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**3**		1	15	6/12/2007
Fluoride	EPA300.0	mg/L	**0.24**		0.10	2.0	6/11/2007
Hardness (as CaCO3)	SM2340B	mg/L	**175**		10		6/26/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		6/15/2007
Magnesium	SM3111B	mg/L	**14**		1		6/18/2007
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	6/11/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	6/11/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	6/12/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		6/11/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**8.0**				6/11/2007
Potassium	SM3111B	mg/L	**2.7**		0.5		6/18/2007
Sodium	SM3111B	mg/L	**28**		1		6/18/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**465**		1	900	6/12/2007
Sulfate	EPA300.0	mg/L	**56**		1	250	6/11/2007
Total Diss. Solids	SM2540C	mg/L	**280**		10	500	6/16/2007
Turbidity	EPA180.1	NTU	**0.40**		0.05	5.0	6/11/2007
Urea-N	Mulvenna&Sav	ug/L	**46**		10		6/12/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, June 30, 2007

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Monterey, CA 93940

Lab Number: AA39766

Collection Date/Time: 6/11/2007 11:40 Sample Collector: HOLLAND T
Submittal Date/Time: 6/11/2007 11:40 Sample ID

Sample Description: Robinson Canyon

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**140**		10		6/11/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		6/25/2007
Calcium	SM3111B	mg/L	**48**		1		6/18/2007
Chloride	EPA300.0	mg/L	**27**		1	250	6/11/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**240**		1	1	6/11/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**22400**		1	1	6/11/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**3**		1	15	6/12/2007
Fluoride	EPA300.0	mg/L	**0.25**		0.10	2.0	6/11/2007
Hardness (as CaCO3)	SM2340B	mg/L	**178**		10		6/26/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		6/15/2007
Magnesium	SM3111B	mg/L	**14**		1		6/18/2007
Nitrate as NO3	EPA300.0	mg/L	**1**		1	45	6/11/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	6/11/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	6/12/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		6/11/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.8**				6/11/2007
Potassium	SM3111B	mg/L	**2.7**		0.5		6/18/2007
Sodium	SM3111B	mg/L	**28**		1		6/18/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**467**		1	900	6/12/2007
Sulfate	EPA300.0	mg/L	**57**		1	250	6/11/2007
Total Diss. Solids	SM2540C	mg/L	**290**		10	500	6/16/2007
Turbidity	EPA180.1	NTU	**0.50**		0.05	5.0	6/11/2007
Urea-N	Mulvenna&Sav	ug/L	**22**		10		6/12/2007

Sample Comments:

Report Approved by: S. W.-H.

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, June 30, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA39767

Collection Date/Time: 6/11/2007 12:00 Sample Collector: HOLLAND T
Submittal Date/Time: 6/11/2007 12:00 Sample ID

Sample Description: Scarlett Rd.

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**150**		10		6/11/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		6/25/2007
Calcium	SM3111B	mg/L	**45**		1		6/18/2007
Chloride	EPA300.0	mg/L	**23**		1	250	6/11/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**< 20**		1	1	6/11/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**2306**		1	1	6/11/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**1**		1	15	6/12/2007
Fluoride	EPA300.0	mg/L	**0.23**		0.10	2.0	6/11/2007
Hardness (as CaCO3)	SM2340B	mg/L	**174**		10		6/26/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		6/15/2007
Magnesium	SM3111B	mg/L	**15**		1		6/18/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	45	6/11/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	6/11/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	6/12/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		6/11/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**8.0**				6/11/2007
Potassium	SM3111B	mg/L	**2.7**		0.5		6/18/2007
Sodium	SM3111B	mg/L	**25**		1		6/18/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**441**		1	900	6/12/2007
Sulfate	EPA300.0	mg/L	**50**		1	250	6/11/2007
Total Diss. Solids	SM2540C	mg/L	**270**		10	500	6/16/2007
Turbidity	EPA180.1	NTU	**0.50**		0.05	5.0	6/11/2007
Urea-N	Mulvenna&Sav	ug/L	**Not detected**		10		6/12/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Trevor Weidenr-Holland
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Monterey, CA 93940

Saturday, June 30, 2007

Lab Number: AA39479

Collection Date/Time: 5/24/2007 10:38 Sample Collector: WEIDNER-HOLLA
Submittal Date/Time: 5/24/2007 10:38 Sample ID

Sample Description: Scarlett Rd.

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**130**		10		6/19/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		5/29/2007
Calcium	SM3111B	mg/L	**42**		1		5/25/2007
Chloride	EPA300.0	mg/L	**26**		1	250	5/24/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**20**		1	1	5/24/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**2039**		1	1	5/24/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**5**		1	15	5/29/2007
Fluoride	EPA300.0	mg/L	**0.25**		0.10	2.0	5/24/2007
Hardness (as CaCO3)	SM2340B	mg/L	**154**		10		5/25/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		5/25/2007
Magnesium	SM3111B	mg/L	**12**		1		5/25/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	45	5/24/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	5/24/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	5/29/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		5/24/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**8.0**				5/24/2007
Potassium	SM3111B	mg/L	**2.7**		0.5		5/25/2007
Sodium	SM3111B	mg/L	**26**		1		5/25/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**438**		1	900	5/24/2007
Sulfate	EPA300.0	mg/L	**53**		1	250	5/24/2007
Total Diss. Solids	SM2540C	mg/L	**271**		10	500	5/26/2007
Turbidity	EPA180.1	NTU	**0.25**		0.05	5.0	5/29/2007
Urea-N	Mulvenna&Sav	ug/L	**16**		10		5/25/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

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Saturday, June 30, 2007

Trevor Weidenr-Holland
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Monterey, CA 93940

Lab Number: AA39483

Collection Date/Time: 5/24/2007 11:31 Sample Collector: WEIDNER-HOLLA
Submittal Date/Time: 5/24/2007 11:31 Sample ID

Sample Description: Cypress Well

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**121**		10		6/19/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		5/29/2007
Calcium	SM3111B	mg/L	**42**		1		5/25/2007
Chloride	EPA300.0	mg/L	**29**		1	250	5/24/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**< 20**		1	1	5/24/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**2422**		1	1	5/24/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**5**		1	15	5/29/2007
Fluoride	EPA300.0	mg/L	**0.28**		0.10	2.0	5/24/2007
Hardness (as CaCO3)	SM2340B	mg/L	**158**		10		5/25/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		5/25/2007
Magnesium	SM3111B	mg/L	**13**		1		5/25/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	45	5/24/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	5/24/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	5/29/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		5/24/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**8.1**				5/24/2007
Potassium	SM3111B	mg/L	**2.8**		0.5		5/25/2007
Sodium	SM3111B	mg/L	**28**		1		5/25/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**457**		1	900	5/24/2007
Sulfate	EPA300.0	mg/L	**61**		1	250	5/24/2007
Total Diss. Solids	SM2540C	mg/L	**277**		10	500	5/26/2007
Turbidity	EPA180.1	NTU	**0.75**		0.05	5.0	5/29/2007
Urea-N	Mulvenna&Sav	ug/L	**Not detected**		10		5/25/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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Saturday, June 30, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA39482

Collection Date/Time: 5/24/2007 11:21 Sample Collector: WEIDNER-HOLLA
Submittal Date/Time: 5/24/2007 11:21 Sample ID

Sample Description: Schulte Rd.

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**126**		10		6/19/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		5/29/2007
Calcium	SM3111B	mg/L	**43**		1		5/25/2007
Chloride	EPA300.0	mg/L	**28**		1	250	5/24/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**40**		1	1	5/24/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**1979**		1	1	5/24/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**5**		1	15	5/29/2007
Fluoride	EPA300.0	mg/L	**0.26**		0.10	2.0	5/24/2007
Hardness (as CaCO3)	SM2340B	mg/L	**157**		10		5/25/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		5/25/2007
Magnesium	SM3111B	mg/L	**12**		1		5/25/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	45	5/24/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	5/24/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	5/29/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		5/24/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.7**				5/24/2007
Potassium	SM3111B	mg/L	**2.8**		0.5		5/25/2007
Sodium	SM3111B	mg/L	**28**		1		5/25/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**458**		1	900	5/24/2007
Sulfate	EPA300.0	mg/L	**59**		1	250	5/24/2007
Total Diss. Solids	SM2540C	mg/L	**280**		10	500	5/26/2007
Turbidity	EPA180.1	NTU	**0.35**		0.05	5.0	5/29/2007
Urea-N	Mulvenna&Sav	ug/L	**16**		10		5/25/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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D = Method deviates from standard method due to insufficient sample for MS/MSD

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MONTEREY BAY ANALYTICAL SERVICES
PRECISION • ACCURACY • DEPENDABILITY
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ELAP Certification Number: 2385

Saturday, June 30, 2007

Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Lab Number: AA39481

Collection Date/Time: 5/24/2007 11:12 Sample Collector: WEIDNER-HOLLA
Submittal Date/Time: 5/24/2007 11:12 Sample ID:

Sample Description: Red Rock Canyon

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**132**		10		6/19/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		5/29/2007
Calcium	SM3111B	mg/L	**44**		1		5/25/2007
Chloride	EPA300.0	mg/L	**29**		1	250	5/24/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**61**		1	1	5/24/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**2548**		1	1	5/24/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**7**		1	15	5/29/2007
Fluoride	EPA300.0	mg/L	**0.26**		0.10	2.0	5/24/2007
Hardness (as CaCO3)	SM2340B	mg/L	**163**		10		5/25/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		5/25/2007
Magnesium	SM3111B	mg/L	**13**		1		5/25/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	45	5/24/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	5/24/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	5/29/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		5/24/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**8.0**				5/24/2007
Potassium	SM3111B	mg/L	**2.7**		0.5		5/25/2007
Sodium	SM3111B	mg/L	**29**		1		5/25/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**462**		1	900	5/24/2007
Sulfate	EPA300.0	mg/L	**59**		1	250	5/24/2007
Total Diss. Solids	SM2540C	mg/L	**281**		10	500	5/26/2007
Turbidity	EPA180.1	NTU	**0.30**		0.05	5.0	5/29/2007
Urea-N	Mulvenna&Sav	ug/L	**Not detected**		10		5/25/2007

Sample Comments:

Report Approved by: S. W.-H.

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
H = Analyzed ouside of hold time E = Analysis performed by External Laboratory; See External Laboratory Report attachments.

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Trevor Weidenr-Holland
4 Justin Court Ste D
Monterey, CA 93940

Saturday, June 30, 2007

Lab Number: AA39480

Collection Date/Time: 5/24/2007 10:53 Sample Collector: WEIDNER-HOLLA
Submittal Date/Time: 5/24/2007 10:53 Sample ID

Sample Description: Robinson Canyon

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	**132**		10		6/19/2007
Ammonia-N	SM4500NH3 D	mg/L	**Not detected**		0.05		5/29/2007
Calcium	SM3111B	mg/L	**46**		1		5/25/2007
Chloride	EPA300.0	mg/L	**29**		1	250	5/24/2007
Coliform, E. coli (Quantitray)	SM9223	#/100ml	**< 20**		1	1	5/24/2007
Coliform, Total (Quantitray)	SM9223	#/100ml	**2518**		1	1	5/24/2007
Color, Apparent (Unfiltered)	SM2120B	Color Units	**4**		1	15	5/29/2007
Fluoride	EPA300.0	mg/L	**0.26**		0.10	2.0	5/24/2007
Hardness (as CaCO3)	SM2340B	mg/L	**168**		10		5/25/2007
Kjehldahl Nitrogen	SM4500-NH3 B	mg/L	**Not detected**		0.5		5/25/2007
Magnesium	SM3111B	mg/L	**13**		1		5/25/2007
Nitrate as NO3	EPA300.0	mg/L	**Not detected**		1	45	5/24/2007
Nitrite as NO2-N	EPA300.0	mg/L	**Not detected**		0.05	1.00	5/24/2007
Odor Threshold at 60 C	SM2150B	TON	**1**		1	3	5/29/2007
o-Phosphate-P	EPA300.0	mg/L	**Not detected**		0.05		5/24/2007
pH (Laboratory)	SM4500-H+B	STD. Units	**7.8**				5/24/2007
Potassium	SM3111B	mg/L	**2.7**		0.5		5/25/2007
Sodium	SM3111B	mg/L	**29**		1		5/25/2007
Specific Conductance (E.C)	SM2510B	umhos/cm	**470**		1	900	5/24/2007
Sulfate	EPA300.0	mg/L	**61**		1	250	5/24/2007
Total Diss. Solids	SM2540C	mg/L	**292**		10	500	5/26/2007
Turbidity	EPA180.1	NTU	**0.25**		0.05	5.0	5/29/2007
Urea-N	Mulvenna&Sav	ug/L	**Not detected**		10		5/25/2007

Sample Comments:

Report Approved by: S. Weidner-Holland

Laboratory Director
Sigrid Weidner-Holland

mg/L: Milligrams per liter (=ppm) ug/L : Micrograms per liter (=ppb) PQL : Practical Quantitation Limit
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D = Method deviates from standard method due to insufficient sample for MS/MSD