

Chino Creek

4. Chino Creek:

- Beneficial Uses: REC1, REC2, WARM, LWRM, WILD, RARE

- Hydrologic Unit: 801.21

- Total Water Body Size: 2 miles

- Size Impaired: Unknown at this time

- Extent of Impairment: Unknown at this time

- Data Analyses:

*Orange County Water District Data:*

- Reach 1 – 0/1 exceeded the “Avg CTR Contin. Conc. (4-day avg)” Arsenic standard of 150 ug/L
- Reach 1 – 0/1 exceeded the “Avg CTR Contin. Conc. (4-day avg)” Cadmium standard of 2.4 ug/L
- Reach 1 – 0/1 exceeded the “Avg CTR Contin. Conc. (4-day avg)” Lead standard of 2.8 ug/L
- Reach 1 – 0/1 exceeded the “Avg CTR Contin. Conc. (4-day avg)” Copper standard of 9.7 ug/L
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg nickel standard of 430 ug/L (Based on hardness = 92.6)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg nickel standard of 950 ug/L (Based on hardness = 235)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg nickel standard of 950 ug/L (Based on hardness = 234)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg nickel standard of 910 ug/L (Based on hardness = 220)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg nickel standard of 510 ug/L (Based on hardness = 113)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg cadmium standard of 3.8 ug/L (Based on hardness = 92.6)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg cadmium standard of 11 ug/L (Based on hardness = 235)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max. Conc. 1 hr Avg cadmium standard of 11 ug/L (Based on hardness = 234)

223

- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max.  
Conc. 1 hr Avg cadmium standard of 10 ug/L (Based on hardness = 220)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max.  
Conc. 1 hr Avg cadmium standard of 4.7 ug/L (Based on hardness = 113)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max.  
Conc. 1 hr Avg lead standard of 58 ug/L (Based on hardness = 92.6)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max.  
Conc. 1 hr Avg lead standard of 160 ug/L (Based on hardness = 235)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max.  
Conc. 1 hr Avg lead standard of 160 ug/L (Based on hardness = 234)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max.  
Conc. 1 hr Avg lead standard of 150 ug/L (Based on hardness = 220)
- Reach 1 – 0/1 exceeded the Cal EPA Tox Rule Criteria Max.  
Conc. 1 hr Avg lead standard of 72 ug/L (Based on hardness = 113)
- Potential Sources: Unknown at this time
- Recommendation: More monitoring due to not enough data points available per parameter to reach a conclusion for impairment and insufficient data to back up results.
- TMDL Priority: None at this time
- TMDL Start Date: Not applicable at this time
- TMDL End Date: Not applicable at this time

Chino Creek  
Query2

StationName	ParamName	Result_Val	SampDate	SampTime
CK-CHINO-01	Arsenic	2.2	7/28/97	11:35
CK-CHINO-01	Cadmium	0.1	7/28/97	11:35
CK-CHINO-01	Copper	3.2	7/28/97	11:35
CK-CHINO-01	Lead	0.1	7/28/97	11:35
CK-CHINO-03	Arsenic	4.2	8/25/97	14:25
CK-CHINO-03	Arsenic	4.4	8/17/98	12:30
CK-CHINO-03	Arsenic	4.5	8/23/99	10:30
CK-CHINO-03	Arsenic	5.3	8/22/00	11:40
CK-CHINO-03	Arsenic	1.4	11/14/00	9:50
CK-CHINO-03	Cadmium	0.1	8/25/97	14:25
CK-CHINO-03	Cadmium	0.1	8/17/98	12:30
CK-CHINO-03	Cadmium	0.1	8/23/99	10:30
CK-CHINO-03	Cadmium	0.1	8/22/00	11:40
CK-CHINO-03	Cadmium	0.1	11/14/00	9:50
CK-CHINO-03	Copper	12	8/25/97	14:25
CK-CHINO-03	Copper	5.8	8/17/98	12:30
CK-CHINO-03	Copper	5.2	8/23/99	10:30
CK-CHINO-03	Copper	8.4	8/22/00	11:40
CK-CHINO-03	Copper	3.9	11/14/00	9:50
CK-CHINO-03	Lead	0.1	8/25/97	14:25
CK-CHINO-03	Lead	0.1	8/17/98	12:30
CK-CHINO-03	Lead	0.1	8/23/99	10:30
CK-CHINO-03	Lead	0.1	8/22/00	11:40
CK-CHINO-03	Lead	0.1	11/14/00	9:50
CK-CHINO-03	Nickel	0.1	8/25/97	14:25
CK-CHINO-03	Nickel	3	8/17/98	12:30
CK-CHINO-03	Nickel	3.1	8/23/99	10:30
CK-CHINO-03	Nickel	3.9	8/22/00	11:40
CK-CHINO-03	Nickel	0.1	11/14/00	9:50

# ORGANICS

StationName CK-CHINO-03

SampDate	SampTime	ParamName	Result_T	ParamType	ParamGrp
8/5/97	10:40	Bromodichloromethane	1.5	ORGANIC	601602
8/13/97	10:15	Bromodichloromethane	1.4	ORGANIC	601602
8/25/97	14:25	Bromodichloromethane	1.4	ORGANIC	502
8/25/97	14:25	Dibromochloromethane	1.2	ORGANIC	502
11/12/97	10:45	Bromodichloromethane	3.3	ORGANIC	601602
2/17/98	14:15	Bromodichloromethane	12.2	ORGANIC	502
2/17/98	14:15	Dibromochloromethane	2.0	ORGANIC	502
5/18/98	12:00	Bromodichloromethane	2.9	ORGANIC	524
5/18/98	12:00	Dibromochloromethane	1.0	ORGANIC	524
8/17/98	12:30	Bromodichloromethane	3.5	ORGANIC	601602
11/17/98	12:20	Bromodichloromethane	6.1	ORGANIC	601602
2/8/99	10:40	Bromodichloromethane	4.9	ORGANIC	524
2/8/99	10:40	Dibromochloromethane	1.6	ORGANIC	524
5/17/99	10:15	Bromodichloromethane	5.9	ORGANIC	524
5/17/99	10:15	Dibromochloromethane	2.0	ORGANIC	524
8/23/99	10:30	Bromodichloromethane	6.9	ORGANIC	601602
8/23/99	10:30	Dibromochloromethane	2.6	ORGANIC	601602
11/16/99	9:55	Bromochloromethane	1.3	ORGANIC	524
11/16/99	9:55	Bromodichloromethane	6.8	ORGANIC	524
11/16/99	9:55	Dibromochloromethane	3.3	ORGANIC	524
2/22/00	9:00	Bromodichloromethane	2.3	ORGANIC	524
2/22/00	9:00	Dibromochloromethane	0.7	ORGANIC	524
5/16/00	9:25	Bromodichloromethane	6.7	ORGANIC	524
5/16/00	9:25	Dibromochloromethane	2.2	ORGANIC	524
8/22/00	11:40	Bromodichloromethane	6.7	ORGANIC	524
8/22/00	11:40	Dibromochloromethane	1.9	ORGANIC	524
11/14/00	9:50	Bromodichloromethane	2.4	ORGANIC	524

11/14/00 9:50 Dibromochloromethane 0.9 ORGANIC

StationName CK-CHINO-07

SampDate	SampTime	ParamName	Result_T	ParamType	ParamGrp
10/3/97	13:15	Dibromochloromethane	0.6	ORGANIC	502

1993

Chino Creek @ Pine Ave.

10/15/93

Arrived at site: 1:50 p.m.

Took samples @ 1:55 p.m.

Foam evident downstream of culvert

Odor noted after sample collected - smelled like "cow" - after sampling was completed, we saw manure trucks travelling down Pine Ave.

Could not check pH pen -

pH: 7.9

EC: 810  $\mu$ S

Make copy,  
put one in Chino Cr.  
file and in Mill Creek  
file.

Mill Creek @ Chino - Corona Rd.

Arrived at site: 2:30 p.m.

Heavier foam noted, especially between rocks

Took sample @ 2:30 p.m.

pH: 10.3

EC: 780  $\mu$ S

T<sub>sec</sub>: 27.1 °C

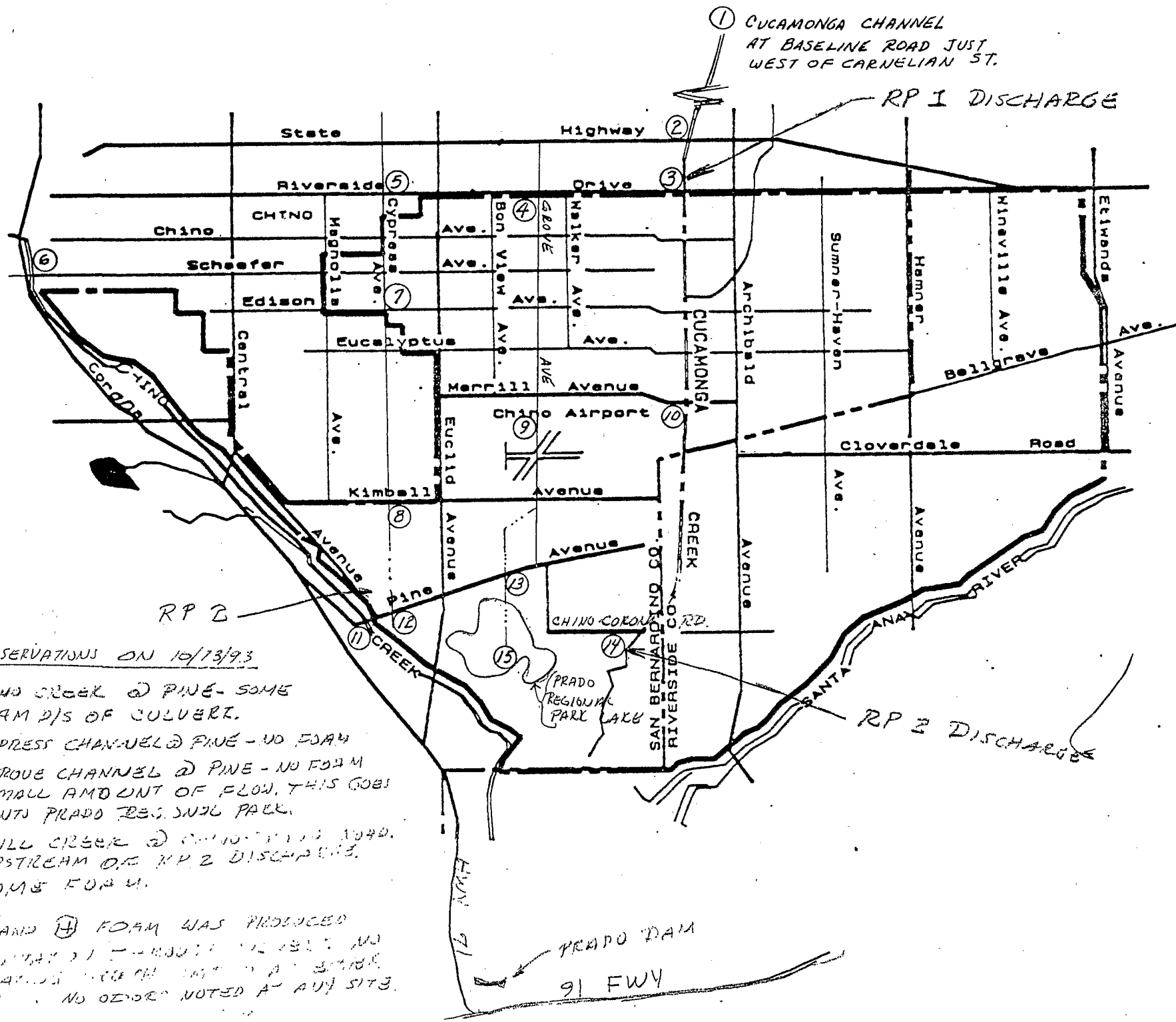
10/15/93

This sampling was initiated because heavy foam was noted during the 10/12/93 & 10/13/93 Prado sampling. The foam was thick and heavy downstream of a "water-fall" created by a weir just downstream of the U.S.G.S. gaging station. The foam was reminiscent of what occurs at a treatment plant, so we ~~we~~ had the samples analyzed for coliform and streptococcus. The foam could be evidence of effluent from either treatment plant effluent or dairy waste water.

On 10/13, DCB drove around the Chino area to look at waterbodies upstream of the dam for evidence of foam. He noted foam at Chino Creek @ Pine Ave. and Mill Creek @ Chino-Corona Rd.

On 10/15 DAB and I drove to the two areas where foam had been spotted. At the Chino Ck. site, the foam was fairly light but noticeable downstream of the understreet conduit. At the Mill Ck. site, the foam was heavier and was building up between rocks, again downstream of the conduit. The sites were sampled and analyzed for BOD, COD, nutrients, coliform, and streptococcus.





① CUCAMONGA CHANNEL  
AT BASELINE ROAD JUST  
WEST OF CARNELIAN ST.

RP 1 DISCHARGE

OBSERVATIONS ON 10/13/93

- ⑪ CHINO CREEK @ PINE - SOME FOAM D/S OF CULVERT.
- ⑫ CYPRESS CHANNEL @ PINE - NO FOAM
- ⑬ GROVE CHANNEL @ PINE - NO FOAM  
SMALL AMOUNT OF FLOW, THIS GOES INTO PRADO REG. SNGL PARK.
- ⑭ MILL CREEK @ CHINO - FLOW 1040.  
UPSTREAM OF RP 2 DISCHARGE.  
SOME FOAM.

AT ⑫ AND ⑬ FOAM WAS PRODUCED BY HIGHWAY 91 - NO FLOW AT ⑬ BUT NO FLOWING WATER AT ⑬. NO OTHER NOTED AT ANY SITE.

RP 2 DISCHARGE

10/15/93

⑥

LCC

# APCL Analytical Report

Submitted to:

CRWQCB: Santa Ana Region  
Attention: Nancy Olson-Martin  
2010 Iowa Avenue, Suite 100  
Riverside, CA 92507  
Tel: (909)782-4130 Fax: (909)781-6288

Service ID #: 801-934411

Received : 10/15/93

Collected by: Linda Garcia

Tested : 10/16-25/93

Collected on: 10/15/93

Reported : 10/27/93

Sample description:

Water Samples  
Project: Chino/Mill Ck. Sampling

## Analysis of Water

Component Analyzed	Method	Unit	PQL	Concentration	
				LCG-CMC-01/02	LCG-CMC-03/04
				Chino Ck@Pine 93-4411-1/3	Mill Ck@Chino-Corona 93-4411-2/4
Biological Oxygen Demand (BOD)	405.1	mgO <sub>2</sub> /L	10	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.1	mgO <sub>2</sub> /L	10	47	N.D.
Orthophosphate, Phosphorus	365.2/365.	mg/L	0.01	2.67	0.52
Total Phosphorus, Phosphorus	365.2/365.	mg/L	0.01	2.75	0.62
Total Kjeldahl Nitrogen (TKN)	351.3	mg/L	0.05	0.92	1.53
Ammonia Nitrogen (NH <sub>3</sub> )	350.2	mg/L	0.05	0.24	0.31
Organic Nitrogen	Calc	mg/L	0.05	0.68	1.22
Nitrate Nitrogen (N-NO <sub>3</sub> <sup>-</sup> )	353.3	mg/L	0.01	7.27	9.24
Nitrite Nitrogen (N-NO <sub>2</sub> <sup>-</sup> )	354.1	mg/L	0.01	0.06	0.11
Coliform, total, 5 tubes	SM9221B	MPN/100mL	2	240	500
Coliform, fecal, 5 tubes	SM9221C	MPN/100mL	2	240	500
Enterococci	SM9221C	MPN/gram	2	40	50

PQL : Practical Quantitation Limit

SM : Standard Methods for Examination of Water and Waste Water, 17th edition.

N.D. : Not Detected or less than the quantitation limit.

Note : Microbiological analyses subcontracted to Silliker Laboratories.

Respectfully submitted,



Shu-Teh Pan  
Lab Manager  
Applied P & Ch Laboratory

# APCL

## Applied P & Ch Laboratory

4066 E. Mission Blvd., Pomona CA 91766  
 Tel: (909) 622-5148 Fax: (909) 622-3199

## Subcontract Chain of Custody

Please Print in pen  
 Page \_\_\_\_ of \_\_\_\_

TO: SILVER laboratories Contact Melisa Tel: (910) 657-71-2 Fax: ( )

Address 1139 E Dominguez St. City Corson State CA Zip code \_\_\_\_\_

APCL Project Title/Code \_\_\_\_\_ Sampler \_\_\_\_\_ Sample disposition: Date \_\_\_\_\_  client;  APCL

Bill to (if different from above) \_\_\_\_\_ P.O.# \_\_\_\_\_

Due date  regular  rush Client signature \_\_\_\_\_ Date \_\_\_\_\_

Sample Description	Date Collected	Time Collected	Matrix	Pres. Y/N	Filtered Y/N	Analysis items	Remark	APCL Lab-ID
<u>LEG-CMC-01</u>	<u>10-15-93</u>	<u>3:30</u>				<u>Total Coli. Faecal Coli F</u> <u>Faecal STREP</u>		<del>4411</del>
<u>LEG-CMC 0.3</u>	<u>"</u>							<u>4411</u>
						<u>Total Coli F. Faecal Coli F</u> <u>Faecal STREP</u>		

Sample Conditions: Seal  Intact  Broken  None; Temperature  Cold  Room; Other \_\_\_\_\_

Relinquished by APCL Date/Time 10-15-93 3:30 Received by Alberto Franco Date/Time 10-15-93 3:50

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

Relinquished by \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by \_\_\_\_\_ Date/Time \_\_\_\_\_

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SANTA ANA REGION  
 1010 IOWA AVENUE, SUITE 100  
 RIVERSIDE, CA 92507-2409  
 PHONE: (714) 782-4130  
 FAX: (714) 781-8288



CHAIN OF CUSTODY RECORD

Date 10/15/93 Page 1 of 1

LABORATORY <b>APCL</b>	PROJECT MANAGER <b>Linda Garcia</b>
SECTION <b>Planning</b>	PHONE NUMBER <b>(909) 782-4469</b>
PROJECT NAME <b>Chino / Mill Ck. Sampling</b>	SAMPLERS: (Signature) <b>Linda Garcia Linda P. Garcia</b>

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE			NO. OF CNTNRS	TESTS REQUIRED
				WATER		AIR		
				Comp.	Grab.			
LCG-CMC-01	Chino Ck. @ P. He	10/15/93	1:55pm		✓		1	Total coli, Fecal coli Fecal strep
CG-CMC-02	Chino Ck. @ P. He	10/15/93	1:55pm		✓		1	BOD, COD, Nutrients*
CG-CMC-03	Mill Ck. @ Chino-Corona	10/15/93	2:30pm		✓		1	Total coli, Fecal coli Fecal strep
LCG-CMC-04	Mill Ck. @ Chino-Corona	10/15/93	2:30pm		✓		1	BOD, COD, Nutrients*

Relinquished by: (Signature) <b>Linda P. Garcia</b>	Date/Time <b>10/15/93 3:30pm</b>	Received by: (Signature) <b>Alberto Franco</b>	Date/Time <b>10-15-93 3:50</b>
Relinquished by: (Signature)		Received by: (Signature)	Date/Time
Relinquished by: (Signature)		Received by Mobile Laboratory for field analysis: (Signature)	Date/Time
Dispatched by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time
Method of Shipment:			

Special Instructions: <b>* Samples must be filtered prior to analysis</b>	TASK CODE
	ESTIMATED COST

APCL Analytical Report

Submitted to:  
 CRWQCB: Santa Ana Region  
 Attention: Nancy Olson-Martin  
 2010 Iowa Avenue, Suite 100  
 Riverside, CA 92507  
 Tel: (909)782-4130 Fax: (909)781-6288

Service ID #: 801-934364 Received : 10/13/93  
 Collected by: Linda Garcia Tested : 10/13-22/93  
 Collected on: 10/13/93 Reported : 10/26/93  
 Sample description:  
 Water from SAR @ Prado Dam & @ "Waterfall"  
 Project: Prado Sampling (Planning)

Analysis of Water

Component Analyzed	Method	Unit	PQL	Concentration	
				LCG-SAR-19/20 93-4364-1/3	LCG-SAR-21/22 93-4364-2/4
Coliform, total, 5 tubes	SM9221B	MPN/100mL	2	—	≥1600
Coliform, fecal, 5 tubes	SM9221C	MPN/100mL	2	—	≥1600
Fecal Streptococci	SM9221C	MPN/100mL	2	—	≥1600
Biological Oxygen Demand (BOD)	405.1	mgO <sub>2</sub> /L	10	N.D.	N.D.
Chemical Oxygen Demand (COD)	410.1	mgO <sub>2</sub> /L	10	N.D.	24
<b>Nutrients</b>					
Orthophosphate, Phosphorus	365.2/365.	mg/L	0.01	1.03	0.99
Total Phosphorus, Phosphorus	365.2/365.	mg/L	0.01	1.06	1.02
Nitrate Nitrogen (N-NO <sub>3</sub> <sup>-</sup> )	353.3	mg/L	0.01	5.4	6.4
Nitrite Nitrogen (N-NO <sub>2</sub> <sup>-</sup> )	354.1	mg/L	0.01	0.09	0.09
Total Kjeldahl Nitrogen (TKN)	351.3	mg/L	0.05	1.30	1.16
Ammonia Nitrogen (NH <sub>3</sub> )	350.2	mg/L	0.05	0.27	0.12
Organic Nitrogen	Calc	mg/L	0.05	1.03	1.04
<b>General Minerals</b>					
Alkalinity	310.1	mg/L	1	223	—
Bicarbonate	SM2330B	mg/L	1	272	—
Calcium, Ca	215.1/7140	mg/L	0.05	86.9	—
Carbonate	SM2330B	mg/L	1	N.D.	—
Chloride Cl <sup>-</sup>	325.3	mg/L	1	127	—
Copper, Cu	220.1/7210	mg/L	0.02	0.06	—
Electric conductivity	120.1	μS/cm	±1	1,120	—
Hardness (Ca and Mg)	130.1	mgCaCO <sub>3</sub> /L	1	303	—
Hydroxide	SM2330B	mg/L	1	N.D.	—
Iron, by AAS	236.1/7380	mg/L	0.03	0.48	—
Magnesium, Mg	242.1/7450	mg/L	0.05	4.58	—
Manganese, by AAS	243.1/7460	mg/L	0.04	0.15	—
Potassium, K	258.1/7610	mg/L	0.02	17	—
Sodium, Na	273.1	mg/L	0.003	110	—
Sulfate (SO <sub>4</sub> <sup>-</sup> )	375.4	mg/L	1	129	—
Surfactants (MBAS)	425.1	mg/L	0.03	0.26	—
Total Dissolved Solids (TDS)	160.1	mg/L	10	1,190	—
Zinc, Zn	289.1/7950	mg/L	0.005	0.04	—
pH	150.1/9045	pH unit	±0.01	8.19	—

PQL : Practical Quantitation Limit

SM : Standard Methods for Examination of Water and Waste Water, 17th edition.

N.D. : Not Detected or less than the quantitation limit.

Notes: (1) Microbiological analyses subcontracted to Clinical Lab, ELAP#1088. (2) Samples filtered prior to analysis.

Respectfully submitted,

*Shu-Teh Pan*  
 Shu-Teh Pan

# APCL Analytical Report

Submitted to:

CRWQCB: Santa Ana Region

Attention: Nancy Olsen-Martin

2010 Iowa Avenue, Suite 100

Riverside, CA 92507

Tel: (909)782-4130 Fax: (909)781-6288

Service ID #: 801-931651

Received : 02/23/93

Collected by: D.Brown/L.Alford

Tested : 02/24-03/10/93

Collected on: 02/23/93

Reported : 03/10/93

Sample description:

Water Samples from Dairy Sampling

## Analysis of Waste Water

801-931651 Page 1 of 1

Component	Method	Unit	MDL	Concentration					
				Grove	Chino Creek	Cypress	Grove	Mill Creek	Grove
				① Riverside	① Pine	① Pine	① Pine	①Chino Corona	①Reg Park
				93-1651-1	93-1651-2	93-1651-3	93-1651-4	93-1651-5	93-1651-6
Coliform, total, 3x5 tube	SM9221B	MPN/100mL	2	1,600	500	>1,600	>1,600	>1,600	>1,600
Coliform, Fecal, 3x5 tube	SM9221B	MPN/100mL	2	90	500	>1,600	>1,600	>1,600	>1,600
Total Kjeldahl Nitrogen	351.3	mg/L	0.02	0.73	1.12	129	105	5.4	27
Nitrite (NO <sub>2</sub> <sup>-</sup> )	354.1	mg/L	0.01	1.13	0.26	N.D.	0.06	0.23	0.64
Nitrate (NO <sub>3</sub> <sup>-</sup> )	353.3	mg/L	0.01	14.7	42.6	3.28	3.27	10.4	11.3
Ammonia (NH <sub>4</sub> <sup>+</sup> )	350.2	mg/L	0.02	0.25	0.43	93.1	77.9	3.79	14.7
Biological Oxygen Demand	405.1	mgO <sub>2</sub> /L	2	3	N.D.	244	297	N.D.	19
Total Dissolved Solids	160.1	mg/L	10	555	922	1,770	1,016	281	668
Total Suspended Solids	160.2	mg/L	4	22	16	756	820	76	204
Electric conductivity	120.1	µs/cm	±1	1,019	1,422	2,856	2,410	460	1,156
Chemical Oxygen Demand	410.1	mgO <sub>2</sub> /L	5	13	N.D.	1,449	757	N.D.	200
Cadmium, Cd	213.1/7130	mg/L	0.002	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Copper, Cu	220.1/7210	mg/L	0.004	0.048	0.025	0.215	0.134	0.144	0.058
Lead, total	239.1/7420	mg/L	0.03	N.D.	N.D.	0.053	N.D.	N.D.	N.D.

MDL : Method Detection Limit

SM : Standard Methods for Examination of Water and Waste Water, 17th edition.

N.D. : Not Detected in this analysis, or less than the method detection limit.

Respectfully submitted,

*Jack Y. Zhang*  
 Jack Y. Zhang, Ph. D.,  
 Director  
 Applied P & Ch Laboratory

*KVB*  
*KW*  
*nom.*  
 MAR 19 1993  
 3/19



PM 3/12/93

# APCL Analytical Report

Submitted to:

CRWQCB: Santa Ana Region  
 Attention: Nancy Olsen-Martin  
 2010 Iowa Avenue, Suite 100  
 Riverside, CA 92507  
 Tel: (909)782-4130 Fax: (909)781-6288

Service ID #: 801-931650

Collected by: JIS PAH  
 Collected on: 02/23/93

Received : 02/23/93

Tested : 2/25-3/10/93  
 Reported : 03/11/93

Sample description:

Water Grab Samples

Project: Dairy Sampling Task Code 273-02

## Analysis of Water

801-931650 Page 1 of 1

Component Analyzed	Method	Unit	MDL	Concentration				
				Chino Creek	Cypress	Cypress	Grove	Cucamonga
				⊙ Schaeffer 93-1650-1	⊙ Edison 93-1650-2	⊙ Kimball 93-1650-3	⊙ Merrill 93-1650-4	⊙ Merrill 93-1650-5
Coliform, total, 5 tubes	SM9221B	MPN/100mL	2	>1,600	>1,600	>1,600	>1,600	500
Coliform, Fecal, 5 tubes	SM9221B	MPN/100mL	2	>1,600	>1,600	>1,600	>1,600	90
Total Kjeldahl Nitrogen	351.3	mg/L	0.02	3.27	144	154	128	1.07
Nitrite (NO <sub>2</sub> <sup>-</sup> )	354.1	mg/L	0.01	1.03	0.25	0.34	0.24	0.11
Nitrate (NO <sub>3</sub> <sup>-</sup> )	353.3	mg/L	0.01	15.8	2.72	2.42	1.94	13.8
Ammonia (NH <sub>4</sub> <sup>+</sup> )	350.2	mg/L	0.02	4.21	104	106	80	0.3
Biological Oxygen Demand	405.1	mgO <sub>2</sub> /L	2	N.D.	439	520	624	N.D.
Total Dissolved Solids	160.1	mg/L	10	619	2,450	2,540	1,610	270
Total Suspended Solids	160.2	mg/L	4	32	453	840	1,110	16
Electric conductivity	120.1	μs/cm	±1	944	2,877	3,096	2,489	437
Chemical Oxygen Demand	410.1	mgO <sub>2</sub> /L	5	N.D.	2,090	2,205	1,380	N.D.
Cadmium, Cd	213.1/7150	mg/L	0.002	N.D.	N.D.	0.006	0.005	N.D.
Copper, Cu	220.1/7210	mg/L	0.004	0.035	0.169	0.305	0.269	N.D.
Lead, total	239.1/7420	mg/L	0.03	N.D.	N.D.	0.05	0.04	N.D.

MDL : Method Detection Limit

SM : Standard Methods for Examination of Water and Waste Water, 17th edition.

N.D. : Not Detected in this analysis, or less than the method detection limit.

Respectfully submitted,

*Jack Y. Zhang*

Jack Y. Zhang, Ph. D.,

Director

Applied P & Ch Laboratory



11/00 3/12/93

# APCL Analytical Report

Submitted to:  
 CRWQCB: Santa Ana Region  
 Attention: Nancy Olsen-Martin  
 2010 Iowa Avenue, Suite 100  
 Riverside, CA 92507  
 Tel: (909)782-4130 Fax: (909)781-6288

Service ID #: 801-931649 Received : 02/23/93  
 Collected by: Michelle Courtier Tested : 2/24-3/2/93  
 Collected on: 02/23/93 Reported : 03/05/93  
 Sample description:  
 Water Grab Samples  
 Project: Dairy Sampling Task Code 273-02

## Analysis of Wastewater

801-931649 Page 1 of 1

Component	Method	Unit	MDL	Concentration			
				Cucamonga	Cucamonga	Riverside	Riverside
				●Baseline 93-1649-1	●RP-#1 93-1649-2	●Cucamonga 93-1649-3	●Cucamonga Eff 93-1649-4
Coliform, total, 5x3 tubes	SM9221B	MPN/100mL	2	23	>1,600	>1,600	900
Coliform, Fecal, 5x3 tubes	SM9221B	MPN/100mL	2	13	>1,600	>1,600	240
Total Kjeldahl Nitrogen	351.3	mgN/L	0.02	1.59	0.39	0.90	0.92
Nitrite (NO <sub>2</sub> <sup>-</sup> )	354.1	mgN/L	0.01	0.05	0.09	0.06	0.03
Nitrate (NO <sub>3</sub> <sup>-</sup> )	353.3	mgN/L	0.01	0.91	2.25	0.69	6.73
Ammonia (NH <sub>4</sub> <sup>+</sup> )	350.2	mgN/L	0.02	0.56	0.12	0.49	0.44
Organic Nitrogen	Calc	mgN/L		1.03	0.27	0.41	0.48
Biological Oxygen Demand	405.1	mgO <sub>2</sub> /L	2	N.D.	N.D.	N.D.	N.D.
Total Dissolved Solids	160.1	mg/L	10	145	146	154	384
Total Suspended Solids	160.2	mg/L	4	N.D.	16	16	4
Electric conductivity	120.1	µs/cm	±0.1	243.6	243.5	233.2	632.2
Chemical Oxygen Demand	410.1	mgO <sub>2</sub> /L	5	N.D.	N.D.	N.D.	N.D.
Cadmium, Cd	213.1/7130	mg/L	0.002	N.D.	N.D.	N.D.	N.D.
Copper, Cu	220.1/7210	mg/L	0.004	N.D.	N.D.	N.D.	N.D.
Lead, total	229.1/7420	mg/L	0.03	N.D.	N.D.	N.D.	N.D.

MDL : Method Detection Limit

SM : Standard Methods for Examination of Water and Waste Water, 17th edition.

N.D. : Not Detected in this analysis, or less than the method detection limit.

Respectfully submitted,

*Jack Zhang*  
 Jack Y. Zhang, Ph.D.,  
 Director  
 Applied P & Ch Laboratory





8-41  
Chino Creek

1983

## Chino Creek

Sampled: 5-5-83

Analysis by: Western Analytical Laboratories, Inc

Sample Data (stations listed in descending (upstream → downstream) order)

Site #	Location	Ammonia Nitrogen (mg/l)	Nitrate Nitrogen (mg/l)	Nitrite Nitrogen (mg/l)	Total Organic Nitrogen (mg/l)	Filtered Organic Nitrogen (mg/l)
1	Central Ave	0.09	5.18	0.13	1.28	0.37
2	100 yds upstream of Chino RP#2	0.98	3.30	0.11	0.63	0.32
3	Chino RP#2 outfall	0.12	14.3	0.001	0.38	0.37
4	Pine Ave	0.96	6.66	0.10	0.37	0.30
5	Euclid Ave	0.52	7.28	0.02	0.82	0.29

Site 1: Los Serranos (Central Ave Bridge)

Time: 1233-1300 hours

Weather: Partially cloudy with sun, 70°F, Cool wind

Site Description: Muddy and Rocky bottom, water contained  
dairy effluent

Estimated

Average Depth: 3 to 12 inches

Rate: Very slow, stagnant

Width: 50 ft to 5ft.

DO kit: 8.9 mg/L

DO meter: Could not use

EC: 1010 micromhos/cm

Temperature: 23.5 C

pH paper: 7.0-7.5

pH kit: 8.4

picture number: 19 and 20

Site 2: 100 yds. upstream of CBMWD outfall (RP#2)

Time: 0944-1020 hours

Weather: Partially cloudy, 65°F

Site Description: Small rock and mud bottom, sample taken  
from shallow fast moving water

Estimated

Average Depth: 3-4 inches

Rate: 40ft/ 17sec  $\sim 1/6$  ft<sup>3</sup>/sec

Width: 20 ft.

DO kit: 7.9mg/L

DO meter: 3.6 mg/L

EC: 1800 micromhos/cm

Temperature: 17 C

pH paper: 7.0

pH kit 8.2

picture number: 14

Site 3: CBMWD Discharge (RP#2)

Time: 1030-1100hours

Weather: Partially cloudy, 65-70°F

Estimated

Average Depth: 3.0+ ft. at discharge site

Rate: 2million gallons/day from 30 inch pipe

Width: 20ft. at discharge site

DO kit: 7.0mg/L

DO meter: 7.6mg/L

EC: 825 micromhos/cm

Temperature: 21.5 C

pH paper: 6.5-7.0

pH kit: 7.0

picture number: 15

Site 4: Pine Bridge

5-5-83

Time: 1115-1140 hours

Weather: Partially cloudy, 70°F

Site Description: Rocky bottom

Estimated

Average Depth: 8-12 inches

Rate: 50ft/40sec

Width: 14ft.

$\approx 6.5 \text{ ft}^3/\text{sec}$

DO kit: 7.0mg/L

DO meter: 4.4mg/L

EC: 1910 micromhos/cm

Temperature: 19 C

pH paper 7.0

pH kit: 8.0

Picture number: 16

Site 5: Euclid Ave Bridge

Time: 1150-1215 hours

Weather: Partially cloudy, 70°F, gusty winds

Site Description: Muddy bottom

Estimated

Average Depth: 4-ft.

Rate: Stagnant

Width: 30 ft.

DO kit: 8.0mg/L

DO meter: 5.7 mg/L

EC: 1010 micromhos/cm

Temperature: 19.5 C

pH paper: 7.0

pH kit: 7.8

Picture number: 17 and 18

# WESTERN ANALYTICAL LABORATORIES, INC.

13744 MONTE VISTA AVENUE

CHINO, CALIFORNIA 91710

(714) 627-3628

CUSTOMER CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD Santa Ana Region

WAL NO. 3050281-285

DATE RECEIVED 5-5-83

ATTENTION James Anderson

DATE OF REPORT 5-12-83

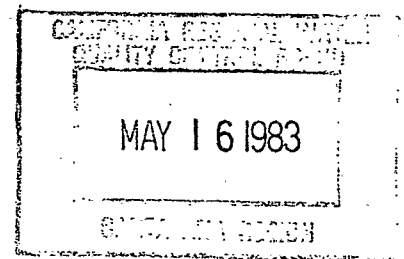
SAMPLE IDENTIFICATION: Chino Creek

Sampled by Joanne Snyder,

TANK NO. \_\_\_\_\_ GALLONS \_\_\_\_\_ SAMPLED 5-5-83

ANALYSIS	STANDARD	RESULTS
----------	----------	---------

L #	SAMPLE	AMMONIUM NITROGEN (mg/l)	NITRATE NITROGEN (mg/l)	NITRITE NITROGEN (mg/l)	TOTAL ORGANIC NITROGEN	FILTERED ORGANIC NITROGEN
50281	(site #4) → Pine Ave.	0.96	6.66	0.10	0.37	0.30
50282	(site #2) → <sup>woods.</sup> #1 upstream of Chino RP#2 outfall	0.98	3.30	0.11	0.63	0.32
50283	(site #5) → Euclid	0.52	7.28	0.02	0.82	0.29
50284	(site #1) → <del>Los</del> Central Ave.	0.09	5.18	0.13	1.28	0.37
50285	(site #3) → Chino RP#2 Outfall	0.12	14.3	0.001	0.38	0.37



SAWPA DES



001004633

RESULTS PHONED  YES  NO

TO WHOM J. Snyder

DATE 5-9 2:30 pm

*Joseph P. Zimmer*

Laboratory Director

# WESTERN ANALYTICAL LABORATORIES, INC.

13744 MONTE VISTA AVENUE

CHINO, CALIFORNIA 91710

(714) 627-3628

CUSTOMER CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD Santa Ana Region

WAL NO. 3050281-285

DATE RECEIVED 5-5-83

ATTENTION James Anderson

DATE OF REPORT 5-12-83

SAMPLE IDENTIFICATION: Chino Creek

Sampled by Joanne Snyder,

TANK NO. \_\_\_\_\_ GALLONS \_\_\_\_\_ SAMPLED 5-5-83

ANALYSIS	STANDARD	RESULTS
----------	----------	---------

AL #	SAMPLE	AMMONIUM NITROGEN (mg/l)	NITRATE NITROGEN (mg/l)	NITRITE NITROGEN (mg/l)	TOTAL ORGANIC NITROGEN	FILTERED ORGANIC NITROGEN
050281	<sup>(site #4) →</sup> Pine Ave.	0.96	6.66	0.10	0.37	0.30
050282	<sup>vicinity.</sup> (site #2) → #1 upstream of Chino RP#2 outfall	0.98	3.30	0.11	0.63	0.32
050283	<sup>(site #5) →</sup> Euclid	0.52	7.28	0.02	0.82	0.29
050284	<del>Los</del> Central Ave. (site #1) → <del>Santa Ana</del>	0.09	5.18	0.13	1.28	0.37
050285	(site #3) → Chino RP#2 Outfall	0.12	14.3	0.001	0.38	0.37

MAY 16 1983

RESULTS PHONED  YES  NO

TO WHOM J. Snyder

DATE 5-9 2:30 pm

*Rayl P. Zimmerman*

Laboratory Director

## Chino Creek 5-5-83

ite #	Location	Flow (MGD)	Water Temp. °F	pH		Electrical Conductivity (micromhos/cm)	Dissolved Oxygen (% saturation)	NH <sub>3</sub> -nitrogen (mg/l)	NO <sub>2</sub> <sup>-</sup> nitrogen (mg/l)	NO <sub>3</sub> <sup>-</sup> nitrogen (mg/l)	Total organic nitrogen (mg/l)	Filtered organic nitrogen (mg/l)	Total nitrogen (mg/l)
				Paper	kit								
1	Central Ave.	stagnant	23.5	7.0-7.5	8.4	1010	100	0.09	0.13	5.18	1.28	0.37	6.68
2	100 yds upstream of Chino Basin Regional Plant #2 outfall	3.8	17	7.0	8.2	1800	82	0.98	0.11	3.30	0.63	0.32	5.02
3	Chino Regional Plant #2 outfall effluent sampled	2	21.5	6.5-7.0	7.0	825	79	0.12	0.001	14.3	0.38	0.37	14.801
4	Pine Ave	1.6	19	7.0	8.0	1910	75	0.96	0.10	6.66	0.37	0.30	8.09
5	Euclid Ave	stagnant	19.5	7.0	7.8	1010	87	0.52	0.02	7.28	0.82	0.29	8.64

City Creeks - Wet Weath 5 City Creek 8-42  
B.U. same as Reach 5

CO<sub>2</sub>D (25)

~~2+6~~ 3/13

TDS (300)

0/13

Na (30)

0/13

SO<sub>4</sub> (60)

0/13

Cl (20)

0/13

Tot N (5)

1/13

Hard (90)

1/13

Beneficial Uses

MUN

AGR

GWR

REC 1

REC 2

WARM

WILD

RARE



Site 9 - WW Grab

Program I.D. No.		WW97-0109	WW97-0209	WW97-0309	WW98-0109	WW98-0209	WW98-0309	WW98-0409	WW99-0109	0	0
Sample I.D. No.		L22873-015	L23600-016	L24196-015	C7111680	L37151-016	L38045-016	L39880-016	L47907-012	L50660-014	L51332-016
Sample Date		10/30/96	11/21/96	12/9/96	11/26/97	1/9/98	2/3/98	3/25/98	11/8/98	1/0/00	1/0/00
Constituent	Units	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
BOD	mg/L	ND	ND	ND	33	ND	5	ND	ND	10	ND
COD	mg/L	ND	ND	ND	2100	16	11	11	14	10	25
TDS	mg/L	250	200	210	280	220	230	160	180	170	180
TSS	mg/L	ND	ND	ND	66000	7	33	23	5	5	ND
Cd, tr	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cu, tr	mg/L	ND	ND	ND	0.32	ND	ND	ND	ND	ND	ND
Pb, tr	mg/L	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND
Zn, tr	mg/L	ND	ND	ND	0.80	ND	ND	ND	ND	ND	ND
P-Ortho	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P-Total	mg/L	ND	ND	ND	3.90	ND	0.19	ND	0.17	ND	ND
NO2-N	mg/L	ND	ND	ND	0.29	ND	ND	ND	ND	ND	ND
NO3-N	mg/L	0.5	ND	0.3	10.00	0.40	0.50	0.60	0.80	0.30	0.40
TKN	mg/L	0.4	0.7	0.2	65.00	0.30	0.20	0.30	0.50	0.40	0.30
pH	units	8	7.9	8.1	7.6	7.1	8.2	8.2	8.3	8.1	8.2
EC	µmho/cm	390	340	330	220	320	290	220	270	260	250
O&G	mg/L	3	ND	ND	1.6	ND	ND	ND	ND	ND	ND
As, tr	mg/L	ND	ND	ND	0.084	ND	ND	ND	ND	ND	ND
Ba, tr	mg/L	ND	ND	ND	5.6	ND	ND	ND	ND	ND	ND
B, tr	mg/L	ND	ND	ND	0.29	ND	ND	ND	ND	ND	ND
Cr, tr	mg/L	ND	ND	ND	0.36	ND	ND	ND	ND	ND	ND
Fe, tr	mg/L	0.12	0.13	0.03	200.00	0.29	0.27	0.35	0.21	0.16	0.07
Mn, tr	mg/L	0.01	ND	ND	42.00	0.07	0.06	0.02	0.03	0.03	ND
Hg, tr	mg/L	ND	ND	ND	0.0014	ND	ND	ND	ND	ND	ND
Se, tr	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ag, tr	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Hardness as CaCO <sub>3</sub>	mg/L	130	120	110	1500	120	110	73	90	83	83
Ca	mg/L	38	34	32	350	34	31	21	26	24	25
Mg	mg/L	9	8	7	150	7	7	5	6	5	5
Na	mg/L	25	25	23	12	21	18	13	16	15	15
K	mg/L	3	3	2	48	2	2	2	2	2	1
Total Alkalinity as CaCO <sub>3</sub>	mg/L	130	120	120	710	120	110	90	95	93	95
OH	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CO <sub>3</sub>	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HCO <sub>3</sub>	mg/L	160	150	150	710	150	140	110	120	110	120
SO <sub>4</sub>	mg/L	45	30	24	33.00	17.00	15.00	12.00	14.00	14.00	12.00
Cl	mg/L	13	16	14	7.70	11.00	10.00	8.00	10.00	9.00	10.00

Site 9 - WW Grab

F	mg/L	1	0.7	0.6	1.40	0.60	0.50	0.40	0.30	0.30	0.30
NH <sub>4</sub> -N	mg/L	ND	ND	ND	1.60	ND	ND	ND	0.10	ND	0.20
N-Total	mg/L	0.9	0.7	0.5	75.00	0.70	0.70	0.90	1.30	0.70	0.60
Acenaphthene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Napthalene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Site 9 - WW Grab

Program I.D. No.		0	0	WW00-0109	WW00-0209	WW00-0309	WW00-0409
Sample I.D. No.		L52565-016	L53514-016	L64804-014	L66218-010	L66478-016	L68386-016
Sample Date		1/0/00	1/0/00	1/25/00	2/27/00	3/4/00	4/17/00
Constituent	Units	Results	Results	Results	Results	Results	Results
BOD	mg/L	5	ND	7	ND	12	9
COD	mg/L	ND	ND	ND	16	38	36
TDS	mg/L	170	150	170	180	150	160
TSS	mg/L	ND	8	5	240	120	52
Cd, tr	mg/L	ND	ND	ND	ND	ND	ND
Cu, tr	mg/L	ND	ND	ND	ND	ND	ND
Pb, tr	mg/L	ND	ND	ND	ND	ND	ND
Zn, tr	mg/L	ND	ND	0.08	0.04	0.03	0.05
P-Ortho	mg/L	ND	ND	ND	ND	ND	ND
P-Total	mg/L	ND	ND	ND	ND	0.08	0.09
NO2-N	mg/L	ND	ND	ND	ND	ND	ND
NO3-N	mg/L	0.30	0.30	0.30	1.50	1.40	0.50
TKN	mg/L	0.50	0.30	0.30	0.40	1.30	1.00
pH	units	8.2	8.1	8.0	8.1	8.0	8.1
EC	µmho/cm	290	240	240	240	190	230
O&G	mg/L	ND	1	ND	ND	ND	ND
As, tr	mg/L	ND	ND	ND	ND	ND	ND
Ba, tr	mg/L	ND	ND	ND	ND	ND	ND
B, tr	mg/L	ND	ND	ND	ND	ND	ND
Cr, tr	mg/L	ND	ND	ND	ND	ND	ND
Fe, tr	mg/L	0.10	0.08	0.38	0.32	1.40	0.63
Mn, tr	mg/L	0.01	0.01	ND	0.01	0.06	0.05
Hg, tr	mg/L	ND	ND	ND	ND	ND	ND
Se, tr	mg/L	ND	ND	ND	ND	ND	ND
Ag, tr	mg/L	ND	ND	ND	ND	ND	ND
Total Hardness as CaCO <sub>3</sub>	mg/L	92	85	95	81	67	73
Ca	mg/L	27	25	29	24	20	22
Mg	mg/L	6	5	5	5	4	5
Na	mg/L	16	16	24	18	14	15
K	mg/L	1	1	2	1	1	1
Total Alkalinity as CaCO <sub>3</sub>	mg/L	98	95	110	85	67	90
OH	mg/L	ND	ND	ND	ND	ND	ND
CO <sub>3</sub>	mg/L	ND	ND	ND	ND	ND	ND
HCO <sub>3</sub>	mg/L	120	120	130	100	82	110
SO <sub>4</sub>	mg/L	14.00	13.00	8.5	11.0	8.3	7.4
Cl	mg/L	10.00	10.00	10	11	10	10

Site 9 - WW Grab

F	mg/L	0.40	0.40	0.70	0.50	0.40	0.50
NH <sub>4</sub> -N	mg/L	ND	ND	ND	ND	ND	0.10
N-Total	mg/L	0.80	0.60	0.60	1.90	2.70	1.50
Acenaphthene	µg/L	ND	ND				
Acenaphthylene	µg/L	ND	ND				
Anthracene	µg/L	ND	ND				
Benzo(a)anthracene	µg/L	ND	ND				
Benzo(b)fluoranthene	µg/L	ND	ND				
Benzo(k)fluoranthene	µg/L	ND	ND				
Benzo(a)pyrene	µg/L	ND	ND				
Benzo(ghi)perylene	µg/L	ND	ND				
2-Chloronaphthalene	µg/L	ND	ND				
Chrysene	µg/L	ND	ND				
Dibenzo(a,h)anthracene	µg/L	ND	ND				
Fluoranthene	µg/L	ND	ND				
Fluorene	µg/L	ND	ND				
Indeno(1,2,3-cd)pyrene	µg/L	ND	ND				
Napthalene	µg/L	ND	ND				
Phenanthrene	µg/L	ND	ND				
Pyrene	µg/L	ND	ND				

City Creek - Dry weather

B 7. = same as Reach 5

CO<sub>2</sub> (25)

~~CO<sub>2</sub>~~ 0/2

TDS (300)

0/2

Na (30)

0/2

SO<sub>4</sub> (60)

0/2

Cl (20)

0/2

Tot N (5)

0/2

Hard (190)

0/2

Beneficial Uses

MUN

AGR

GWR

REC 1

REC 2

WARM

WILD

RARE

City Creek

Program I.D. No.	DW94-0109	DW94-0209	DW94-0309	DW95-0109	DW95-0209	DW96-0109	DW97-0109	DW98-0109
Sample I.D. No.	0	0	L2438-002	L8196-002	L9920-002	L19857-008	L323 83-007	L44330-009
Sample Date	6/8/94	8/16/94	11/1/94	6/6/95	8/14/95	7/30/96	8/20/97	7/29/98
Constituent	Units	Results	Results	Results	Results	Results	Results	Results
BOD	mg/L	NR	NR	8	ND	ND	ND	ND
COD ✓	mg/L	NR	NR	ND	10	25	ND	ND
TDS ✓	mg/L	NR	NR	210	170	180	250	270
TSS	mg/L	NR	NR	5	ND	ND	ND	8
Cd, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Cu, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Pb, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Zn, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
P-Ortho	mg/L	NR	NR	ND	ND	ND	ND	ND
P-Total	mg/L	NR	NR	ND	ND	ND	ND	ND
NO2-N	mg/L	NR	NR	ND	ND	ND	ND	ND
NO3-N	mg/L	NR	NR	0.4	0.5	0.8	0.4	ND
TKN	mg/L	NR	NR	ND	0.3	ND	0.7	0.30
pH	units	NR	NR	8.2	8.2	8.4	8	7.9
EC	µmho/cm	NR	NR	300	230	270	380	430
O&G	mg/L	NR	NR	210	170	180	250	ND
As, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Ba, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
B, tr ✓	mg/L	NR	NR	ND	ND	ND	0.1	0.1
Cr, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Fe, tr	mg/L	NR	NR	0.5	0.02	0.08	0.05	0.03
Mn, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Hg, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Se, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Ag, tr	mg/L	NR	NR	ND	ND	ND	ND	ND
Total Hardness as CaCO <sub>3</sub>	mg/L	NR	NR	107	78	90	130	150
Ca	mg/L	NR	NR	31	23	26	36	43
Mg	mg/L	NR	NR	7	5	6	9	10
Na ✓	mg/L	NR	NR	20	14	18	24	27
K	mg/L	NR	NR	2	1	2	2	2
Total Alkalinity as CaCO <sub>3</sub>	mg/L	NR	NR	115	90	98	130	130
OH	mg/L	NR	NR	ND	ND	ND	ND	ND
CO <sub>3</sub>	mg/L	NR	NR	3	ND	ND	ND	ND
HCO <sub>3</sub>	mg/L	NR	NR	134	110	113	160	160
SO <sub>4</sub> ✓	mg/L	NR	NR	25	14	18	38	56.00
Cl ✓	mg/L	NR	NR	11	10	9	11	13.00
F	mg/L	NR	NR	0.6	0.4	0.6	0.8	0.90
NH <sub>4</sub> -N	mg/L	NR	NR	ND	0.1	ND	0.1	ND
N-Total ✓	mg/L	NR	NR	0.4	0.8	0.8	1.1	0.30
Acenaphthene	µg/L	NR	NR	ND	ND	ND	ND	ND

Site 9 - DW Grab

Acenaphthylene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Anthracene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Chrysene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Fluoranthene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Fluorene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Napthalene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Phenanthrene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND
Pyrene	µg/L	NR	NR	ND	ND	ND	ND	ND	ND

## REGIONAL WATER QUALITY CONTROL BOARD

## Parameter Benchmark Values

Parameter Name	Benchmark Value
pH	6.5-8.5 su
Total Suspended Solids	100 mg/L
Specific Conductivity	200 $\mu$ mhos/cm
Total Dissolved Solids	500 mg/L
Oil & Grease	20.0 mg/L
Total Organic Carbon	100 mg/L
Biochemical Oxygen Demand	30.0 mg/L
Chemical Oxygen Demand	100 mg/L
Nitrate + Nitrite - Nitrogen	.680 mg/L
MBAS	.500 mg/L
Total Petroleum Hydrocarbons	.100 mg/L
Benzene	.001 mg/L
Toluene	.010 mg/L
Ethylbenzene	.010 mg/L
Xylenes (o, m, p)	.010 mg/L
Ammonia	19.0 mg/L
Butylbenzyl Phthalate	3.00 mg/L
Dimethyl Phthalate	1.00 mg/L
Fluoranthene	.042 mg/L
Phenols-Total	1.00 mg/L
Pyrene	.010 mg/L
Trichloroethylene	2.70 $\mu$ g/L
PCB-1016 (c)	.127 $\mu$ g/L
PCB-1221 (c)	.100 mg/L
PCB-1232 (c)	.318 $\mu$ g/L
PCB-1242 (c)	.200 $\mu$ g/L
PCB-1248 (c)	2.54 $\mu$ g/L
PCB-1254 (c)	.100 mg/L
PCB-1260 (c)	.477 $\mu$ g/L
Aluminum-Total	.750 mg/L
Antimony-Total	.636 mg/L
Arsenic-Total	.169 mg/L
Beryllium-Total	.130 mg/L
Cadmium-Total	.010 mg/L
Chloride	860 mg/L
Chloride-Residual	.050 mg/L
Chromium-Total	.050 mg/L
Copper-Total	.020 mg/L
Fluoride	1.80 mg/L
Iron-Total	1.00 mg/L
Lead-Total	.050 mg/L
Manganese	1.00 mg/L
Mercury-Total	.002 mg/L
Nickel-Total	1.41 mg/L
Phosphorus-Total	2.00 mg/L
Selenium-Total	.239 mg/L
Silver-Total	.032 mg/L
Zinc-Total	.100 mg/L





City Creek 8-43

1994

## MEMORANDUM

**Date:** September 19, 1994  
**From:** Allan Bacon *AB*  
**To:** Planning Files  
**Subject:** CITY CREEK SAMPLING

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### Purpose

City Creek was sampled on August 3, 1994 as part of the Planning Section's ambient sampling program. The sampling was performed by Bob Whitaker of the Storm Water Investigation section, Brad Nelson of the Land Disposal Section, and Allan Bacon of the Planning Section.

A total of four locations were sampled. The locations were chosen based on safe access and areas that would be representative of the creek's natural habitat or water quality. Samples were taken in the East and West forks of City Creek and at their confluence. All three locations were mountain locations, and all were within 1 mile of each other. The terrain was similar, with a rock substrate, and wooded riparian habitat. The soils in the upland area are partially clay, part sand. The fourth sample location was taken from City Creek in the western San Bernardino Valley. The four locations show both a mountain and valley type result for city creek. Each location was analyzed for total coliform, standard minerals and general nutrients.

There is a need to have one more sample location established further downstream, nearer to where City Creek joins East Warm Creek. The locations would then represent the full geographic range of City Creek, including mountain and rural valley, as well a sample in the urbanized valley section of City Creek. Due to lack of flow in the valley portion an urban sample could not be taken. A winter sample taken, possibly in conjunction with the storm water program, might be the best opportunity to provide water quality data.

### Sample Locations

C1--City Creek at the confluence of the East and West Forks of City Creek (See Map)

Access to the creek is limited to a short hike down a slight slope. Park on the turnout prior to the "Narrow Bridge" sign of the bridge that crosses the West Fork of City Creek, and just after the San Bernardino Road Marker numbered 32-37 along north bound Highway 330. The sample was taken below an old bridge that is not used. (The bridge is difficult to see from the road.)

The riparian area is older, with groves of larger diameter trees (>5 inches). There were several pools between natural rock impediments. Several fish, up to 4 inches long, were seen in these pools. There were beer cans and bottles strewn on the ground as well as some other dumped items; however, there was no trash in the creek itself. Some rocks were tagged with graffiti.

The flow at this location was estimated to be 1 cfs. The water was very clear. The substrate was primarily rock. There were two springs on the slope on the opposite side of the creek. The flow from each spring was only enough to wet the slopes. The results show violations of two objectives. Total coliform was measured at 500 mpn/100ml, which violates the drinking water standard for MUN designated waters of 100 mpn/100ml. Total inorganic nitrogen (TIN) was 1.7 mg/l which violated the basin plan objective of 1 mg/l. The chloride level was at the basin plan objective of 10 mg/l.

WF2--West Fork City Creek at truck trail crossing.

This location is accessed by a "truck trail" that crosses the West Fork of City Creek. The truck trail begins at the forest service station. The Forest Service Station is just north of the West Fork City Creek Bridge on the north (left side of Highway 330). Follow the truck trail north (through the Forest Service Station) to the creek crossing. The truck trail does not cross the creek at any other locations.

This area was much like downstream. Rocks were the primary substrate. Large trees made up most of the riparian habitat. This location is also heavily used by people as evidenced by the carving in the trees.

The flow at this location is estimated at 1 cfm. There was a slight anaerobic odor in the water, but there were no algae or other problems. Only two parameters exceeded of the basin plan objectives. Fluoride was measured at 3.5 mg/l exceeding the 1 mg/l objective, and sodium was measured at 35 mg/l exceeding the 30 mg/l objective.

EF3--East Fork City Creek

Across the street from the forest station are two old closed roads. The road to the right (west) led directly to and crossed the east fork. A quick hike (1/4 mile) down the cement paved road is an excellent location to sample.

The area was less wooded and shaded than C1 and WF2, but it may be due to the road. In addition, like the other two locations the substrate is mainly rock, but in this location the rocks are much larger. The sample was taken downstream of the road. There was some algae in stagnant areas, especially where the areas received sunlight. In free flowing portions, the water was clear and flow was <1 cfm.

At this location two parameters exceeded the basin plan objective. Chloride was measured at 11 mg/l which exceeded the 10 mg/l objective, and TIN was measured at 1.2 mg/l exceeding the 1 mg/l objective.

#### C4--City Creek at Highland Ave. (San Bernardino Valley)

A small road, west of Highway 330, allows room to park near the stream.

The area was more coastal sage scrub. The creek bed in this area is concrete lined and riprapped for flood control, and is operated and maintained by San Bernardino County Flood Control. There were not many trees or other type of riparian habitat. There was a large amount of trash in the area. During sampling, a horse back rider with his two dogs came down the channel. They rode through the length of the channel.

The water was partially clear, there was a large amount of algae in the sunlit areas. The flow was much less than that of C1. In some of the deeper areas there were several small fish (<2 inches long). This is the last accessible sample location which contains water in the summer. Within one mile the creek bed is completely dry. At Pacific Ave. (the next road crossing) the soil is damp, but there is no flow, and no flow reaches the percolation ponds at Boulder Ave.

At this location several water quality parameter exceeded either the basin plan objectives, or the objectives established for MUN designated waters. Total coliform was measured at 240 mpn/100ml, exceeding the 100 mpn/100ml MUN objective. Chloride was measured at 18 mg/l exceeding the 10 mg/l Basin Plan objective. Sulfate was measured at 32 mg/l exceeding a 20 mg/l Basin Plan objective. TDS was measured at 233 mg/l exceeding a 200 mg/l Basin Plan objective, hardness was measured at 136 mg/l exceeding 115 mg/l Basin Plan objective, and TIN was measured at 2.7 mg/l exceeding the 1 mg/l Basin Plan objective. The sodium was measured at 30 mg/l equaling the basin plan objective concentration.

The high values in the valley reach are probably due to two factors. The first is that in the valley, temperatures are very high in the summer and the substrate is very porous, so water both quickly evaporates and percolates. This tends to concentrate constituents in the water. The second problem is the location is often used for recreational purposes. This recreation was evident by the horse back riding. This location is also used as an illegal dumping location.

CITY CREEK

Constituent	C1	WF2	EF3	C4	BPO
Total Coliform	500	30	30	240	100
Fecal Coliform	140	23	23	240	
Ammonia	0.3	0	0.3	0	
TKN-Nitrogen	0.9	1	0.7	1.3	
Nitrite	0	0	0	0	
Nitrate	1.4	0.9	0.9	2.7	10
TIN	1.7	0.9	1.2	2.7	1
Orthophosphate	0	0.03	0.05	0.02	
Total Phosphate	0.02	0.04	0.06	0.05	
Alkalinity	128	109	115	126	
Bicarbonate	157	133	141	138	
Boron	0	0.1	0	0	0.75
Calcium	31	22	32	37	
Carbonate	0	0	0	8	
Chloride	10	9	11	18	10
Electric Conductivity	303	285	280	383	
Fluoride	0.6	3.5	0.6	0.8	1
Iron	0	0	0	0.2	
Magnesium	6	4.1	5.9	9	
pH	8.24	8.1	8.24	8.52	
Potassium	1.5	1.2	1.4	2.6	
Sodium	24	35	18	30	30
Hydroxide	0	0	0	0	
Sulfate	11	15	8	32	20
TDS	193	187	177	233	200
Total Anions	3.11	2.76	2.8	3.48	
Total Cations	3.13	2.99	2.9	3.96	
Hardness	108	74	110	136	115

Note: 0 (zero) is used to replace ND (non-detect)  
in order to have a number for statistical purposes.

Photo 1 = flood control @ Waterman  
(Where City Creek ends at

Photo 2 - City Creek @ Before flood control  
@ Dahn and 3ca

C1 - City Creek along Highway 330  
flow ~ 2-3 cfs  
Clear

Heavily wooded Area  
- NO algae

- Springs near outcroppings of  
rocks on East Side  
Fish seen

Bottles (Beer) seen Near location

**9:50**

in Turnout - SBD 32-37

Just Before "Narrow Bridge" Sign

Confluence of East and West Fork

~~10:35 cfs~~

Location 2

WF ~~EF~~ 2. East fork along track trail

① Bridge - Center Through

Flow in ~~2-25 cfs~~ forestry station

very clear much like confluence

flow = 1 cfm

T = 10:38

Slight odor to water - no Algae

< ~~Orange Nodules in Bottle~~

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EF3 - access through rd across  
from FS. station

- rd crosses East fork

no Algae - Clear

flow = 1 cfm

some Algae in separated ponds

T = 11:15

All deep valleys  
both just (< 1 mi) upstream of confluence

① C<sup>4</sup> - City Creek @ Hiland Ave  
East water sample Area  
In ~~the~~ Valley  
Time = 11:40  
operated as Flood Control

East of City Creek Just above  
Boulder Ave - High Peak Volume



# APCL Analytical Report

Submitted to:

CRWQCB: Santa Ana Region

Attention: Nancy Olson-Martin

2010 Iowa Avenue, Suite 100

Riverside, CA 92507

Tel: (909)782-4130 Fax: (909)781-6288

Service ID #: 801-943507

Received : 08/03/94

Collected by: Dennis Allan Baron Tested : 08/03-16/94

Collected on: 08/03/94

Reported : 08/17/94

Sample description:

Water

Project: City Creek

## Analysis of Water

801-943507 Page 1 of 1

Component Analyzed	Method	Unit	PQL	Concentration			
				C1 94-3507-1	WF2 94-3507-4	EF3 94-3507-3	C4 94-3507-2
Total Coliform, MTF, 3X5 tubes	SM9221B	MPN/100mL	2	500	30	30	240
Fecal Coliform, MTF, 3X5 tubes	SM9221C	MPN/100mL	2	140	23	23	240
Ammonia (NH <sub>4</sub> <sup>+</sup> -N)	350.2	mg/L	0.2	0.3	N.D.	0.3	N.D.
Nitrogen, Total Kjeldahl (TKN)	351.3	mg/L	0.2	0.9	1.0	0.7	1.3
Nitrite (NO <sub>2</sub> <sup>-</sup> -N)	354.1	mg/L	0.02	N.D.	N.D.	N.D.	N.D.
Phosphorus, Total	365.2/365.3	mg/L	0.02	0.02	0.04	0.06	0.05
Alkalinity	310.1	mg/L	2	128	109	115	126
Bicarbonate	SM2330B	mg/L	2	157	133	141	138
Boron, by colorimetry	212.3	mg/L	0.1	N.D.	0.1	N.D.	N.D.
Calcium, Ca	215.1	mg/L	0.02	31	22	32	37
Carbonate	SM2330B	mg/L	2	N.D.	N.D.	N.D.	8
Chloride Cl <sup>-</sup>	325.3/9252	mg/L	1	10	9	11	18
Electric conductivity	120.1/9050	µS/cm	1	303	285	280	383
Fluoride, Total F <sup>-</sup>	340.2	mg/L	0.1	0.6	3.5	0.6	0.8
Iron	236.1/7380	mg/L	0.1	N.D.	N.D.	N.D.	0.2
Magnesium, Mg, by AA	242.1/7450	mg/L	0.002	6.0	4.1	5.9	9.0
pH	150.1/9040	pH Unit	0.01	8.24	8.10	8.24	8.52
Potassium, K, by AA	258.1/7610	mg/L	0.01	1.5	1.2	1.4	2.6
Sodium, Na, by AA	273.1/7770	mg/L	0.003	24	35	18	30
Hydroxide	SM2330B	mg/L	2	N.D.	N.D.	N.D.	N.D.
Sulfate (SO <sub>4</sub> <sup>-</sup> )	375.4/9038	mg/L	2	11	15	8	32
Solids, Total Dissolved (TDS)	169.1	mg/L	10	193	187	177	233
Total Anions	Calc.	meq/L		3.11	2.76	2.80	3.48
Total Cations	Calc.	meq/L		3.13	2.99	2.90	3.96
Hardness by Titration	130.2	mgCaCO <sub>3</sub> /L	1	108	74	110	136
Phosphorus, Orthophosphate	365.2/365.3	mg/L	0.01	N.D.	0.03	0.05	0.02
Nitrate (NO <sub>3</sub> <sup>-</sup> -N)	SM4500NO <sub>3</sub> D	mg/L	0.5	1.4	0.9	0.9	2.7

PQL : Practical Quantitation Limit

SM : Standard Methods for Examination of Water and Waste Water.

N.D. : Not Detected or less than the quantitation limit.

Respectfully submitted,

*Jack Y. Zhang*  
Jack Y. Zhang, Ph.D.,

Director

Applied P. & Ch Laboratory

SAWPA DES



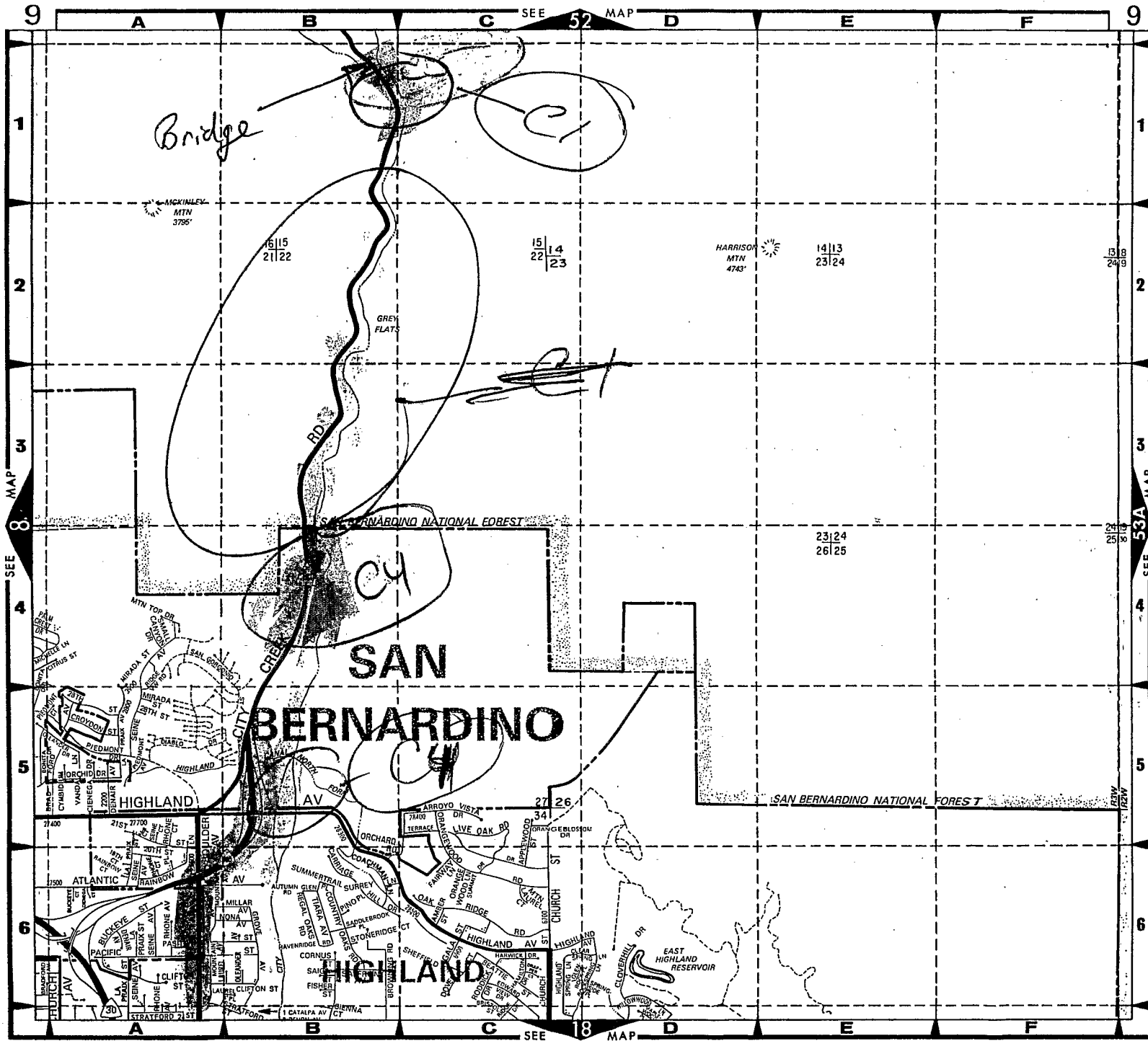
001004629



LABORATORY <u>APCL</u> # <u>3507</u>	PROJECT MANAGER <u>Nancy Olse-Martin</u>
SECTION <u>Planning</u>	PHONE NUMBER <u>782-4130</u>
PROJECT NAME <u>City Creek</u>	SAMPLERS: (Signature) <u>Dennis Allen Bacon (782-4962)</u>

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE			SOLID	NO. OF CNTNRS	TESTS REQUIRED
				WATER		AIR			
				Comp.	Grab.				
C1	City Creek @ Hwy 380	8/3/94	9:50		X			3	Total Coliform General Nutrie. Std. Minerals
WF2	West fork	8/3/94	10:35		✓			3	h
EF3	East fork	8/3/94	11:15		✓			3	y
C4	City Creek @ Highlands	8/3/94	11:45		✓			3	L

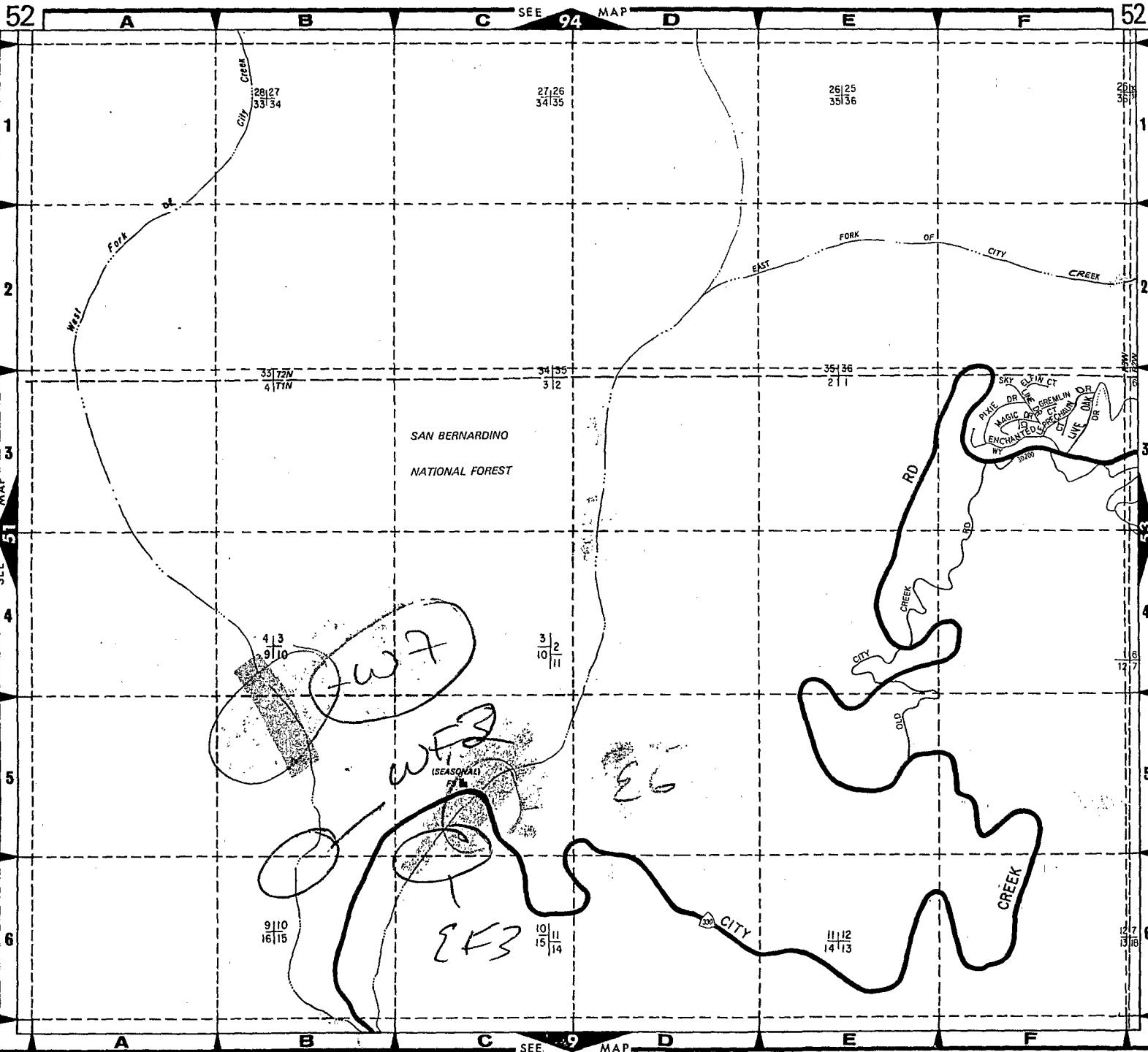
Released by: (Signature) <u>Dennis Allen Bacon</u>	Received by: (Signature) <u>[Signature]</u>	Date/Time <u>8-3-94 4:00</u>
Released by: (Signature)	Received by: (Signature)	Date/Time
Released by: (Signature)	Received by Mobile Laboratory for field analysis: (Signature)	Date/Time
Dispatched by: (Signature)	Date/Time	Received for Laboratory by: Date/Time
Method of Shipment		
Special Instructions:		
		TASK CODE
		ESTIMATED COST



SAN BERNARDINO

DETAIL

SAN BERNARDINO



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DETAIL

SEE MAP 51

MAP 51

SEE MAP 51

MAP 51

SEE MAP 51

MAP 51

52

52

A

B

C

D

E

F

SEE 94 MAP

SEE 94 MAP

1

2

3

4

5

6

1

2

3

4

5

6

A

B

C

D

E

F

SEE 94 MAP

SAN BERNARDINO  
NATIONAL FOREST

City Creek

West Fork of

EAST Fork of CITY CREEK

RD

CREEK

CITY

OLD

CREEK

CITY

4|3  
9|10

3|2  
10|11

9|10  
16|15

11|12  
14|13

W7

W8  
(SEASONAL)

E6

E3

26|27  
34|35

27|26  
34|35

26|25  
35|36

26|25  
35|36

35|36  
4|17|18

34|35  
3|12

35|36  
2|11

35|36  
2|11

12|13  
17|16

12|13  
17|16

SKY ELW CT  
PINE DR  
MAGIC DR  
ENCHANTED CT  
STREMLIN DR  
SUNNY DR  
LIVE DR