State Board Toxic Substance Monitoring program
Preiliminary Summary of 1997, 1998 and 1999 Data
Organic Chemicals in Fish and Clams (ppb, wet weight)

	1997				
Station Name	**Species Code**	**Tissue Type**	**Sample Date**	**Total DDT** ppb, wet wt.	**Toxaphene** ppb, wet wt.
Coachella Valley Stormwater Channel	TL	F	11-17-97	16	<100
Alamo River (Calipatria)	**CCF**	**F**	**11-20-97**	**2621**	**340**
New River (Westmorland)	CCF	F	11-20-97	482	390
New River (International Boundary)	CP	F	11-10-97	80	<100
Salton Sea South	TL	F	11-20-97	31	<100
Salton Sea North	ORC	F	11-18-97	190	<100

	1998				
Station Name	**Species Code**	**Tissue Type**	**Sample Date**	**Total DDT** ppb, wet wt.	**Toxaphene** ppb, wet wt.
Palo Verde Outfall Drain	LMB	F	11-12-98	25.3	<20
Alamo River (Calipatria)	**CCF**	**F**	**11-11-98**	**959.1**	**563**
New River (Westmorland)	CCF	F	11-11-98	219.6	64.5
Salton Sea South	TL	F	11-11-98	36.4	<20
Salton Sea North	TL	F	11-09-98	6.7	<20

	1999				
Station Name	**Species Code**	**Tissue Type**	**Sample Date**	**Total DDT** ppb, wet wt.	**Toxaphene** ppb, wet wt.
Palo Verde Outfall Drain	LMB	F	12-07-99	33.2	<20
Colorado River (Imperial Dam)	LMB	F	12-07-99	ND	<20
Coachella Valley Stormwater Channel	TL	W	12-08-99	299.2	27.6
New River (Westmorland)	CP	F	12-09-99	525	138
Holtville Main Drain	**CCF**	**F**	**12-05-99**	**865.3**	**246**
Central Drain	**CP**	**F**	**12-05-99**	**3384.4**	**2196**
South Central Drain	**CCF**	**F**	**12-05-99**	**2529.6**	**1964**
Salton Sea South	ORC	F	12-06-99	78.7	<20

Total DDT Guidelines:	**ppb-ww**
Food & Drug Adminstration (FDA)	5000
National Academy of Sciences (NAS)	1000

L = Liver, F = Filter, W = Whole Body

TABLE 3

Toxic Substances Monitoring Program
1997 Species Code List

Freshwater Fish Code List *

Species Code	Common Name	Species Name	Family Name
BG	Blue gill	*Lepomis macrochirus*	Centrarchidae
BK	Brook Trout	*Salvelinus fontinalis*	Salmonidae
BN	Brown Trout	*Salmo trutta*	Salmonidae
CCF	Channel Catfish	*Ictalurus punctatus*	Ictaluridae
CP	Carp	*Cyprinus carpio*	Cyprinidae
FHM	Fathead Minnow	*Pimephales promelas*	Cyprinidae
GAM	Mosquitofish	*Gambusia affinis*	Poeciliidae
LMB	Largemouth Bass	*Micropterus salmoides*	Centrarchidae
PRS	Red Shiner	*Cyprinella lutrensis*	Cyprinidae
RBT	Rainbow Trout	*Oncorhynchus mykiss*	Salmonidae
RCH	California Roach	*Hesperoleucus symmetricus*	Cyprinidae
SCP	Sculpin	*Cottus sp.*	Cottidae
SKR	Sucker	*Catostomus sp.*	Catostomidae
SMB	Smallmouth Bass	*Micropterus dolomieu*	Centrarchidae
STB	Threespine Stickleback	*Gasterosteus aculeatus*	Gasterosteidae
TL	Tilapia	*Tilapia sp.*	Cichlidae

Marine Fish Code List *

Species Code	Common Name	Species Name	Family Name
CM	Chub Mackerel	*Scomber japonicus*	Scombridae
DT	Diamond Turbot	*Hypsopsetta guttulata*	Pleuronectidae
GSS	Gray Smoothhound Shark	*Mustelus californicus*	Carcharhinidae
LJM	Longjaw Mudsucker	*Gillichthys mirabilis*	Gobiidae
ORC	Orangemouth Corvina	*Cynoscion xanthulus*	Sciaenidae

* Common and scientific fish names were obtained from Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. American Fisheries Society Special Publication 20, Bethesda, Maryland.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1997 Data: Organic Chemicals in Fish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
906.40.01	Rose Cr/d/s Mission Bay Dr	GAM	W	06/23/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	11.0	5.2	16.2	<10.0	<5.0
907.11.03	San Diego R/u/s Taylor St	BG	F	06/23/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
909.12.03	Sweetwater R/Interstate 805	LMB	W	06/22/97	<5.0	<5.0	5.8	<5.0	<5.0	10.0	31.0	5.8	52.6	<10.0	<5.0
910.20.05	Otay R/Apache Service Pond	BG	F	06/22/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
911.11.04	Tijuana R/Dairy Mart Rd	GAM	W	06/22/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
906.40.01	5.8	<10.0	<10.0	<10.0	8.6	<10.0	<10.0	<15.0	NA	8.6	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
907.11.03	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
909.12.03	<5.0	<10.0	<10.0	<10.0	39.0	<10.0	<10.0	<15.0	NA	39.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
910.20.05	<5.0	<10.0	<10.0	<10.0	50.0	<10.0	<10.0	<15.0	NA	50.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
911.11.04	<5.0	<10.0	14.0	<10.0	40.0	<10.0	<10.0	<15.0	NA	54.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
906.40.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	67.0	<10.0	<10.0	<50.0	83.3	<50.0	83.3	<100.0	22.0
907.11.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
909.12.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	11.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	52.6
910.20.05	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
911.11.04	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	55.1	61.7	<50.0	116.8	<100.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1997 Data: Organic Chemicals in Fish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
728.00.92	Salton Sea/North	ORC	F	11/18/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	25.3
801.11.05	Delhi Channel	PRS	W	06/18/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	8.9	<5.0	8.9	<10.0	<5.0
801.11.07	San Diego Cr/Michelson Dr	PRS	W	06/19/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	06/19/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
801.11.89	Lower Newport Bay/Rhine Ch	CM	F	07/11/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
801.11.96	Peters Canyon Channel	PRS	W	06/19/97	<5.0	<5.0	9.4	<5.0	5.9	<5.0	11.0	<5.0	26.3	71.0	<5.0
801.11.96	Peters Canyon Channel	PRS	W	06/19/97	<5.0	<5.0	11.0	<5.0	6.9	5.0	13.0	5.0	40.9	83.0	<5.0
801.11.99	Upper Newport Bay/Newport Dunes	DT	F	06/20/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
902.11.01	Santa Margarita R/Stuart Mesa Rd	GAM	W	06/24/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
906.40.01	Rose Cr/d/s Mission Bay Dr	GAM	W	06/23/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	11.0	5.5	16.5	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
728.00.92	<5.0	<10.0	<10.0	<10.0	190.0	<10.0	<10.0	<15.0	NA	190.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
801.11.05	5.5	<10.0	30.0	<10.0	160.0	<10.0	<10.0	<15.0	NA	190.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
801.11.07	11.0	<10.0	29.0	<10.0	160.0	<10.0	<10.0	<15.0	NA	189.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
801.11.09	<5.0	<10.0	11.0	<10.0	85.0	<10.0	<10.0	<15.0	NA	96.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
801.11.89	<5.0	<10.0	11.0	<10.0	130.0	<10.0	<10.0	<15.0	NA	141.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
801.11.96	9.6	<10.0	47.0	<10.0	740.0	22.0	38.0	35.0	NA	882.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
801.11.96	11.0	<10.0	54.0	<10.0	800.0	24.0	52.0	37.0	NA	967.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
801.11.99	<5.0	<10.0	12.0	<10.0	140.0	<10.0	<10.0	<15.0	NA	152.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
902.11.01	<5.0	<10.0	17.0	<10.0	74.0	<10.0	<10.0	<15.0	NA	91.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
906.40.01	5.8	<10.0	<10.0	<10.0	8.7	<10.0	<10.0	<15.0	NA	8.7	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
728.00.92	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
801.11.05	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	8.7	<10.0	<10.0	<50.0	89.7	<50.0	89.7	495.0	509.4
801.11.07	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	76.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	121.0	132.0
801.11.09	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	100.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
801.11.89	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	272.0	74.9	346.9	<100.0	ND
801.11.96	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	42.0	<10.0	<10.0	<50.0	57.5	<50.0	57.5	405.0	440.9
801.11.96	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	48.0	<10.0	<10.0	<50.0	67.6	<50.0	67.6	447.0	498.9
801.11.99	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
902.11.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
906.40.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	68.0	<10.0	<10.0	<50.0	74.2	<50.0	74.2	<100.0	22.3

NA Means that the sample was not analyzed for the chemical.
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Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1997 Data: Organic Chemicals in Fish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
405.12.90	Harbor Park Lake	LMB	F	07/15/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.3	<5.0	6.3	<10.0	<5.0
405.15.91	San Gabriel R/Coyote Cr	TL	W	07/18/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.21.17	Lake Balboa	TL	W	07/18/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.23.08	Big Tujunga Wash	RCH	W	07/18/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.0	<5.0	6.0	<10.0	<5.0
634.10.06	Saxon Cr/d/s Meyers Landfill	RBT	F	09/17/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
719.47.00	Coachella Valley Stormwater Ch	TL	F	11/17/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
723.10.01	Alamo R/Calipatria	CCF	F	11/20/97	<5.0	<5.0	6.7	<5.0	<5.0	<5.0	9.5	<5.0	16.2	73.0	620.0
723.10.02	New R/Westmorland	CCF	F	11/20/97	<5.0	<5.0	8.6	<5.0	6.7	<5.0	8.4	<5.0	23.7	63.0	1100.0
723.10.58	New R/Inter Boundary	CP	F	12/10/97	<5.0	<5.0	7.3	<5.0	6.0	<5.0	<5.0	<5.0	13.3	<10.0	<5.0
728.00.90	Salton Sea/South	TL	F	11/20/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
405.12.90	<5.0	<10.0	<10.0	<10.0	14.0	<10.0	<10.0	<15.0	NA	14.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
405.15.91	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
405.21.17	<5.0	<10.0	<10.0	<10.0	51.0	<10.0	<10.0	<15.0	NA	51.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
405.23.08	<5.0	<10.0	<10.0	<10.0	12.0	<10.0	<10.0	<15.0	NA	12.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
634.10.06	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
719.47.00	<5.0	<10.0	<10.0	<10.0	16.0	<10.0	<10.0	<15.0	NA	16.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
723.10.01	23.0	17.0	53.0	17.0	2500.0	<10.0	<10.0	34.0	NA	2621.0	NA	<50.0	8.2	<70.0	<85.0	8.2	<15.0	<20.0
723.10.02	17.0	<10.0	32.0	<10.0	450.0	<10.0	<10.0	<15.0	NA	482.0	NA	<50.0	8.0	<70.0	<85.0	8.0	<15.0	<20.0
723.10.58	<5.0	<10.0	20.0	<10.0	60.0	<10.0	<10.0	<15.0	NA	80.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
728.00.90	<5.0	<10.0	<10.0	<10.0	31.0	<10.0	<10.0	<15.0	NA	31.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
405.12.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	6.3
405.15.91	<2.0	<10.0	<5.0	6.5	6.5	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	6.5
405.21.17	<2.0	<10.0	<5.0	9.0	9.0	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	9.0
405.23.08	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	6.0
634.10.06	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
719.47.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
723.10.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	2.6	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	340.0	387.4
723.10.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	3.8	<15.0	<5.0	<10.0	<10.0	<50.0	130.0	110.0	240.0	390.0	438.7
723.10.58	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	6.3	<15.0	<5.0	<10.0	<10.0	66.0	51.0	<50.0	117.0	<100.0	13.3
728.00.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1997 Data: Organic Chemicals in Fish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
315.31.00	Devereaux Slough	LJM	F	08/21/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	07/16/97	<5.0	<5.0	<5.0	<5.0	11.0	47.0	140.0	67.0	265.0	<10.0	330.0
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	07/16/97	<5.0	<5.0	5.8	<5.0	14.0	50.0	140.0	73.0	282.8	<10.0	380.0
403.11.04	Revolon Slough	FHM	W	07/16/97	<5.0	<5.0	55.0	6.1	37.0	35.0	96.0	36.0	265.1	18.0	560.0
403.11.91	Mugu Lagoon	GSS	F	07/16/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
403.12.06	Calleguas Creek	FHM	W	07/16/97	<5.0	<5.0	27.0	<5.0	14.0	17.0	39.0	<5.0	97.0	<10.0	18.0
403.12.06	Calleguas Creek	FHM	W	07/16/97	<5.0	<5.0	31.0	<5.0	16.0	17.0	47.0	6.7	117.7	<10.0	18.0
404.21.07	Malibou Lake	LMB	F	07/17/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
404.26.01	Sherwood Lake	LMB	F	07/17/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.12.90	Harbor Park Lake	CP	F	07/15/97	<5.0	9.9	57.0	9.0	47.0	45.0	99.0	10.0	276.9	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
315.31.00	<5.0	<10.0	<10.0	<10.0	7.4	<10.0	<10.0	<15.0	NA	7.4	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
403.11.02	26.0	70.0	820.0	29.0	3600.0	20.0	310.0	170.0	NA	5019.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
403.11.02	25.0	75.0	910.0	29.0	3600.0	19.0	330.0	180.0	NA	5143.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
403.11.04	63.0	100.0	450.0	48.0	4800.0	200.0	200.0	140.0	NA	5938.0	NA	79.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
403.11.91	<5.0	<10.0	<10.0	<10.0	43.0	<10.0	<10.0	<15.0	NA	43.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
403.12.06	15.0	84.0	300.0	59.0	3900.0	150.0	85.0	100.0	NA	4678.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
403.12.06	16.0	94.0	300.0	64.0	4100.0	170.0	100.0	120.0	NA	4948.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0
404.21.07	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
404.26.01	<5.0	<10.0	<10.0	<10.0	5.0	<10.0	<10.0	<15.0	NA	5.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
405.12.90	6.5	12.0	96.0	<10.0	220.0	<10.0	<10.0	<15.0	NA	328.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	30.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
315.31.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
403.11.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	110.7	<50.0	110.7	814.0	1105.0
403.11.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	99.1	<50.0	99.1	1010.0	1317.8
403.11.04	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	4.3	<15.0	9.5	<10.0	<10.0	<50.0	495.0	<50.0	495.0	12000.0	12328.1
403.11.91	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
403.12.06	<2.0	<10.0	<5.0	7.0	7.0	<5.0	<5.0	3.4	<15.0	6.0	<10.0	<10.0	<50.0	284.0	61.0	345.0	5000.0	5119.0
403.12.06	<2.0	<10.0	<5.0	7.0	7.0	<5.0	<5.0	3.5	<15.0	6.7	<10.0	<10.0	<50.0	291.0	54.5	345.5	5400.0	5540.7
404.21.07	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
404.26.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.12.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	9.6	<10.0	<10.0	<50.0	275.0	169.0	444.0	<100.0	283.4

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1997 Data: Organic Chemicals in Fish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
105.11.08	Klamath R/Klamath Glen	SCP	W	08/27/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
106.12.03	Trinity R/Willow Creek	RBT	W	08/28/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
108.10.00	Big Lagoon	STB	W	08/27/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
111.12.01	Eel R/Scotia	SCP	W	08/26/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
114.11.05	Russian R/Duncans Mills	SKR	F	08/08/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
114.11.23	Russian R/Wohler Brg	SMB	W	08/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
114.21.10	Laguna de Santa Rosa/Stony Pt	SKR	F	08/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
114.23.00	Mark West Creek	BG	W	08/07/97	<5.0	<5.0	<5.0	<5.0	<5.0	6.8	20.0	<5.0	26.8	<10.0	<5.0
114.24.12	Lake Sonoma	LMB	F	09/30/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/30/97	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
105.11.08	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
106.12.03	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
108.10.00	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
111.12.01	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
114.11.05	<5.0	<10.0	<10.0	<10.0	5.0	<10.0	<10.0	<15.0	NA	5.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
114.11.23	<5.0	<10.0	<10.0	<10.0	12.0	<10.0	<10.0	<15.0	NA	12.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
114.21.10	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
114.23.00	<5.0	<10.0	12.0	<10.0	48.0	<10.0	<10.0	<15.0	NA	60.0	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
114.24.12	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	NA	NA	ND	<15.0	<20.0
114.24.17	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	NA	ND	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0	<20.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
105.11.08	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
106.12.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
108.10.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
111.12.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
114.11.05	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
114.11.23	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
114.21.10	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
114.23.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	26.8
114.24.12	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
114.24.17	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 1997 Data: Trace Elements in Fish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
633.20.07	Unnamed Tributary to Red Lake Cr	BK	F	09/16/97	0.091	0.0020	0.010	0.2200	<0.0001	0.020	<0.0002	0.600	<0.0003	3.60
633.20.07	Unnamed Tributary to Red Lake Cr	BK	L	09/16/97	0.195	0.7070	0.474	6.0500	<0.0001	NA	0.0130	2.930	0.0420	26.00
634.10.00	Upper Truckee River/d/s HWY 50	BN	F	09/17/97	0.011	<0.0001	0.003	0.1900	<0.0001	0.037	0.0005	0.060	<0.0003	2.66
634.10.00	Upper Truckee River/d/s HWY 50	BN	L	09/17/97	0.141	0.0280	0.150	39.7000	<0.0001	NA	0.0100	2.810	0.2800	27.00
634.10.06	Saxon Cr/d/s Meyers Landfill	RBT	F	09/17/97	<0.004	<0.0001	<0.001	0.2300	<0.0001	0.031	<0.0002	0.050	<0.0003	3.01
634.10.06	Saxon Cr/d/s Meyers Landfill	RBT	L	09/17/97	<0.004	0.0150	0.406	25.4000	<0.0001	NA	0.0060	0.610	0.3260	24.00
635.20.30	Bear Creek	RBT	F	09/23/97	0.017	0.0004	0.008	0.2300	<0.0001	0.021	0.0030	0.130	<0.0003	3.35
635.20.30	Bear Creek	RBT	L	09/23/97	0.160	0.0810	0.464	34.9000	0.0060	NA	0.0030	2.500	0.3180	39.40
636.00.18	Independence Cr	BN	F	09/23/97	0.051	<0.0001	<0.001	0.2000	<0.0001	0.024	<0.0002	0.060	<0.0003	3.27
636.00.18	Independence Cr	BN	L	09/23/97	0.129	0.0280	0.469	37.2000	0.0030	NA	0.0060	2.200	0.5850	29.60
719.47.00	Coachella Valley Stormwater Ch	TL	F	11/17/97	NA	NA	NA	NA	NA	NA	NA	1.020	NA	NA
723.10.01	Alamo R/Calipatria	CCF	F	11/20/97	NA	NA	NA	NA	NA	NA	NA	1.060	NA	NA
723.10.02	New R/Westmorland	CCF	F	11/20/97	0.026	<0.0001	0.004	0.1700	0.0003	0.024	0.0004	0.360	0.0002	2.76
723.10.02	New R/Westmorland	CCF	L	11/20/97	0.187	0.0150	0.422	1.5600	0.0270	NA	0.0060	3.230	0.0020	19.30
723.10.58	New R/Inter Boundary	CP	F	12/10/97	0.058	<0.0001	0.004	0.2400	0.0001	0.037	0.0010	0.460	0.0020	5.93
728.00.90	Salton Sea/South	TL	F	11/20/97	0.642	<0.0001	<0.001	0.1300	<0.0001	0.003	0.0030	1.310	<0.0003	2.34
728.00.90	Salton Sea/South	TL	L	11/20/97	1.030	0.0320	0.302	1.2600	0.0320	NA	0.3050	6.650	0.0080	25.20
728.00.92	Salton Sea/North	ORC	F	11/18/97	0.718	<0.0001	0.008	0.1600	<0.0001	0.011	0.0030	1.360	<0.0003	1.78
728.00.92	Salton Sea/North	ORC	L	11/18/97	0.666	0.0020	0.764	0.7600	<0.0001	NA	0.0100	2.040	0.0020	16.40
801.11.05	Delhi Channel	PRS	W	06/18/97	0.085	0.0040	0.006	0.6800	0.0200	0.011	0.0020	1.090	0.0040	10.70
801.11.07	San Diego Cr/Michelson Dr	PRS	W	06/19/97	0.134	0.0290	0.043	0.6500	0.0260	0.046	<0.0002	1.550	0.0040	13.60
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	06/19/97	0.148	0.0230	0.036	0.4800	0.0200	0.014	<0.0002	1.060	0.0060	13.60
801.11.89	Lower Newport Bay/Rhine Ch	CM	F	07/11/97	0.427	0.0010	<0.001	0.6600	0.0050	0.024	0.0002	0.320	<0.0003	4.05
801.11.89	Lower Newport Bay/Rhine Ch	CM	L	07/11/97	1.080	0.0520	0.394	4.3800	0.0770	NA	0.0160	3.260	0.0020	22.20
801.11.96	Peters Canyon Channel	PRS	W	06/19/97	0.057	0.0480	0.029	0.4100	0.0100	0.015	<0.0002	0.850	0.0010	23.70
801.11.96	Peters Canyon Channel	PRS	W	06/19/97	0.063	0.0470	0.034	0.4300	0.0150	0.012	<0.0002	0.880	0.0010	23.30
801.11.99	Upper Newport Bay/Newport Dunes	DT	F	06/20/97	1.480	<0.0001	<0.001	0.1100	<0.0001	0.028	0.0004	0.700	0.0010	3.83
801.11.99	Upper Newport Bay/Newport Dunes	DT	L	06/20/97	5.180	0.1850	0.677	22.1000	0.0090	NA	0.0290	2.540	0.0340	73.00
902.11.01	Santa Margarita R/Stuart Mesa Rd	GAM	W	06/24/97	0.058	0.0030	0.006	0.4700	0.0020	0.018	<0.0002	0.160	0.0060	16.40
906.40.01	Rose Cr/d/s Mission Bay Dr	GAM	W	06/23/97	0.065	0.0020	0.023	0.5800	0.0560	0.012	<0.0002	0.210	0.0030	16.90
906.40.01	Rose Cr/d/s Mission Bay Dr	GAM	W	06/23/97	0.057	0.0020	0.024	0.6400	0.0620	0.012	<0.0002	0.220	0.0030	16.40
907.11.03	San Diego R/u/s Taylor St	BG	F	06/23/97	0.023	<0.0001	0.004	0.1200	<0.0001	0.015	<0.0002	0.340	<0.0003	2.69
907.11.03	San Diego R/u/s Taylor St	BG	L	06/23/97	0.221	0.0160	0.502	1.0800	<0.0001	NA	0.0100	2.060	0.0010	16.30
909.12.03	Sweetwater R/Interstate 805	LMB	W	06/22/97	0.012	0.0010	0.004	0.1800	0.0090	0.022	<0.0002	0.130	0.0005	10.80
910.20.05	Otay R/Apache Service Pond	BG	F	06/22/97	0.031	<0.0001	<0.001	0.0700	0.0003	0.053	<0.0002	0.360	<0.0003	3.29
910.20.05	Otay R/Apache Service Pond	BG	L	06/22/97	0.237	0.0140	0.576	1.5600	<0.0001	NA	0.0220	2.220	0.0010	20.90
911.11.04	Tijuana R/Dairy Mart Rd	GAM	W	06/22/97	0.052	0.0010	0.017	0.4100	0.0190	0.012	<0.0002	0.330	0.0110	12.80

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Toxic Substances Monitoring Program

Preliminary Summary of 1997 Data: Trace Elements in Fish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
105.11.08	Klamath R/Klamath Glen	SCP	W	08/27/97	0.022	0.0110	0.080	0.3800	0.0150	0.037	0.1050	0.170	0.0010	7.07
106.12.03	Trinity R/Willow Creek	RBT	W	08/28/97	0.019	0.0170	0.065	0.3800	0.0030	0.016	0.1670	0.300	0.0010	14.60
108.10.00	Big Lagoon	STB	W	08/27/97	0.327	0.0040	0.032	1.5000	0.0210	0.052	0.0150	0.250	0.0100	15.80
111.12.01	Eel R/Scotia	SCP	W	08/26/97	0.004	0.0120	0.036	0.3200	0.0110	0.030	0.0130	0.190	0.0010	7.34
114.11.05	Russian R/Duncans Mills	SKR	F	08/08/97	0.047	<0.0001	<0.001	0.1400	0.0005	0.155	<0.0002	0.090	0.0010	2.53
114.11.23	Russian R/Wohler Brg	LMB	F	08/07/97	0.016	<0.0001	<0.001	0.1300	<0.0001	0.257	<0.0002	0.120	<0.0003	3.05
114.11.23	Russian R/Wohler Brg	LMB	L	08/07/97	0.083	0.0200	0.355	2.1300	<0.0001	NA	0.0190	0.980	0.0010	19.90
114.21.10	Laguna de Santa Rosa/Stony Pt	SKR	F	08/07/97	<0.004	<0.0001	<0.001	0.1400	0.0030	0.075	0.0030	0.100	<0.0003	3.06
114.23.00	Mark West Creek	BG	F	08/07/97	0.022	<0.0001	0.001	0.1200	<0.0001	0.107	<0.0002	0.110	<0.0003	3.91
114.23.00	Mark West Creek	BG	L	08/07/97	0.282	0.0380	0.378	1.9800	0.0100	NA	0.0320	0.820	0.0030	19.30
114.24.12	Lake Sonoma	LMB	F	09/30/97	0.040	<0.0001	<0.001	0.1200	<0.0001	0.472	<0.0002	0.150	0.0010	2.59
114.24.12	Lake Sonoma	LMB	L	09/30/97	0.364	0.1750	0.369	5.9000	0.0010	NA	0.0260	2.030	0.0300	20.90
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/30/97	0.027	<0.0001	<0.001	0.1100	0.0010	0.370	0.0010	0.140	<0.0003	2.39
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	L	09/30/97	0.174	0.0590	0.480	4.9700	0.0400	NA	0.0310	1.730	0.0060	22.40
315.31.00	Devereaux Slough	LJM	F	08/21/97	5.980	<0.0001	<0.001	0.0900	0.0010	0.061	0.0020	0.680	<0.0003	5.37
315.31.00	Devereaux Slough	LJM	L	08/21/97	5.060	0.0440	0.888	0.7100	<0.0001	NA	0.0540	0.830	0.0010	9.60
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	07/16/97	0.104	0.0100	0.053	0.8700	0.0300	0.012	0.0580	0.350	0.0140	14.70
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	07/16/97	0.113	0.0110	0.052	0.9500	0.0340	0.011	0.0050	0.370	0.0150	16.30
403.11.04	Revolon Slough	FHM	W	07/16/97	0.171	0.0520	0.074	0.8000	0.0150	0.014	<0.0002	1.190	0.0050	15.70
403.11.91	Mugu Lagoon	GSS	F	07/16/97	2.760	0.0030	<0.001	0.1400	0.0004	0.117	0.0020	0.160	0.0010	1.65
403.11.91	Mugu Lagoon	GSS	L	07/16/97	22.300	1.0100	0.911	3.1300	<0.0001	NA	0.0120	2.190	0.3380	9.22
403.12.06	Calleguas Creek	FHM	W	07/16/97	0.078	0.0140	0.059	0.5900	0.0210	0.014	0.0180	0.440	0.0070	17.10
403.12.06	Calleguas Creek	FHM	W	07/16/97	0.052	0.0170	0.072	0.6100	0.0230	0.012	0.0400	0.440	0.0080	16.40
404.21.07	Malibou Lake	LMB	F	07/17/97	0.040	<0.0001	<0.001	0.0900	<0.0001	0.061	0.0010	0.870	<0.0003	2.27
404.21.07	Malibou Lake	LMB	L	07/17/97	0.166	0.6200	0.279	6.4100	<0.0001	NA	0.0380	3.110	0.0040	20.40
404.26.01	Sherwood Lake	LMB	F	07/17/97	0.007	<0.0001	<0.001	0.0800	0.0002	0.214	<0.0002	0.110	<0.0003	2.04
404.26.01	Sherwood Lake	LMB	L	07/17/97	0.110	0.1100	0.440	35.6000	0.0020	NA	0.0180	1.330	0.0020	35.00
405.12.90	Harbor Park Lake	CP	F	07/15/97	0.006	<0.0001	0.072	0.3300	<0.0001	0.004	0.0010	0.330	<0.0003	8.38
405.12.90	Harbor Park Lake	LMB	F	07/15/97	<0.004	<0.0001	0.003	0.0800	<0.0001	0.029	0.0010	0.250	<0.0003	2.24
405.12.90	Harbor Park Lake	LMB	L	07/15/97	0.081	0.0310	0.440	5.9400	0.0110	NA	0.0330	1.860	0.0100	19.40
405.15.91	San Gabriel R/Coyote Cr	TL	W	07/18/97	0.092	0.0030	0.048	0.9100	0.0410	0.004	0.0660	0.280	0.0880	14.60
405.21.17	Lake Balboa	TL	W	07/18/97	0.108	0.0400	0.165	2.1200	0.0770	0.003	0.0770	0.240	0.1110	11.20
405.23.08	Big Tujunga Wash	RCH	W	07/18/97	0.042	0.0020	0.036	1.4900	0.0060	0.109	<0.0002	0.170	0.0020	18.90
508.10.45	Sacramento R/Keswick Dam	RBT	F	12/23/97	<0.004	0.0010	0.020	0.2500	<0.0001	0.017	0.0070	0.150	<0.0003	2.49
508.10.45	Sacramento R/Keswick Dam	RBT	L	12/23/97	0.632	0.5440	0.386	151.0000	0.0130	NA	0.2670	10.800	0.2290	22.10
603.20.33	Bishop Creek	BN	F	09/11/97	0.134	0.0002	<0.001	0.1700	<0.0001	0.039	<0.0002	0.430	<0.0003	3.87
603.20.33	Bishop Creek	BN	L	09/11/97	0.368	0.1380	0.406	47.0000	<0.0001	NA	0.0160	4.770	0.4510	35.50

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Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
114.21.03	Laguna de Santa Rosa/Sebastopol	CP	F	08/13/98	0.069	<0.0003	0.070	0.2738	<0.0003	0.084	0.0080	0.153	<0.0013	5.46
114.21.03	Laguna de Santa Rosa/Sebastopol	RSF	F	08/13/98	0.025	0.0004	0.088	0.2364	<0.0003	0.192	0.0060	0.196	<0.0013	5.06
114.21.03	Laguna de Santa Rosa/Sebastopol	RSF	L	08/13/98	<0.017	0.0028	0.009	0.1242	<0.0003	NA	0.0020	<0.017	<0.0013	1.56
114.21.03	Laguna de Santa Rosa/Sebastopol	SBF	F	08/13/98	<0.017	<0.0003	0.083	0.2453	<0.0003	0.113	0.0030	0.130	<0.0013	4.87
114.21.03	Laguna de Santa Rosa/Sebastopol	SBF	F	08/13/98	<0.017	0.0004	0.106	0.2662	<0.0003	0.119	0.0020	0.138	<0.0013	5.57
114.21.03	Laguna de Santa Rosa/Sebastopol	SKR	F	08/13/98	0.046	<0.0003	0.080	0.2062	<0.0003	0.134	0.0020	0.170	<0.0013	2.99
114.21.04	Laguna de Santa Rosa/Occidental	BLB	F	08/13/98	<0.017	<0.0003	0.079	0.1779	<0.0003	0.137	0.0130	0.148	<0.0013	3.39
114.21.04	Laguna de Santa Rosa/Occidental	BLB	L	08/13/98	0.097	0.0197	0.108	8.1110	0.0738	NA	0.0620	1.510	0.0469	23.70
114.21.04	Laguna de Santa Rosa/Occidental	CP	F	08/13/98	0.032	<0.0003	0.055	0.2213	<0.0003	0.062	0.0100	0.143	<0.0013	4.66
114.21.04	Laguna de Santa Rosa/Occidental	CP	F	08/13/98	0.030	<0.0003	0.085	0.2727	<0.0003	0.069	0.0060	0.171	<0.0013	4.62
114.21.04	Laguna de Santa Rosa/Occidental	CCF	F	08/13/98	<0.017	<0.0003	0.137	0.2032	<0.0003	0.130	0.0030	0.117	<0.0013	5.45
114.21.04	Laguna de Santa Rosa/Occidental	CCF	L	08/13/98	0.061	0.0099	0.141	1.8100	0.0047	NA	0.0090	1.250	<0.0013	19.80
114.21.04	Laguna de Santa Rosa/Occidental	PACI	F	08/13/98	<0.017	<0.0003	0.010	0.3475	0.0023	0.053	0.0240	<0.017	<0.0013	0.73
114.21.04	Laguna de Santa Rosa/Occidental	SBF	F	08/13/98	0.028	<0.0003	0.085	0.2667	<0.0003	0.132	0.0050	0.139	<0.0013	5.27
114.21.04	Laguna de Santa Rosa/Occidental	SBF	F	08/13/98	0.034	<0.0003	0.114	0.2691	<0.0003	0.122	0.0040	0.139	<0.0013	5.09
309.10.04	Old Salinas R/Monterey Dunes Brg	HCH	F	07/15/98	0.092	0.0007	0.093	0.3304	<0.0003	0.168	0.0030	0.323	<0.0013	6.68
309.10.93	Salinas R/Davis Rd	SKR	W	07/13/98	0.124	0.0857	0.657	1.0230	0.0495	0.031	0.6160	0.499	0.0054	14.10
309.10.94	Salinas R/HWY 1 Brg	SKR	F	07/14/98	0.088	0.0014	0.071	0.3303	<0.0003	0.090	0.0880	0.536	<0.0013	4.80
309.10.95	Tembladero Sl/Castroville	GAM	W	07/14/98	0.088	0.0272	0.128	0.9605	0.0150	0.032	0.0300	0.363	0.0031	26.20
402.10.05	Ventura R/d/s OVSD Discharge	AC	W	06/26/98	0.095	0.0526	0.248	2.3400	0.0006	0.016	0.0110	1.780	0.0077	28.10
402.10.06	Ventura R/u/s OVSD Discharge	AC	W	06/26/98	0.128	0.1145	0.173	2.0060	0.0009	0.026	0.0330	1.960	0.0080	30.90
403.12.07	Conejo Creek	GAM	W	06/25/98	0.044	0.0183	0.127	0.9886	0.0051	0.021	<0.0010	0.579	0.0233	27.60
403.12.07	Conejo Creek	GAM	W	06/25/98	0.059	0.0202	0.155	1.0760	0.0062	0.026	<0.0010	0.706	0.0266	27.90
403.67.08	Arroyo Simi/Madera Rd	AC	W	06/25/98	0.138	0.0363	0.098	1.1720	0.0537	0.011	0.0550	1.590	0.0060	22.30
404.23.04	Lindero Lake	CP	F	06/24/98	0.345	0.0017	0.100	0.7774	<0.0003	0.011	0.0030	4.610	<0.0013	9.31
405.15.02	El Dorado Park Lake	LMB	F	06/23/98	0.041	<0.0003	0.070	0.2196	<0.0003	0.602	0.0040	0.107	<0.0013	4.28
405.15.02	El Dorado Park Lake	LMB	L	06/23/98	0.133	0.0227	0.100	6.1250	<0.0003	NA	0.0020	0.613	0.0026	17.50
405.15.22	McArthur Park Lake	GSF	F	06/24/98	0.048	<0.0003	0.086	0.3130	<0.0003	0.044	0.0030	1.020	<0.0013	5.95
405.15.22	McArthur Park Lake	GSF	L	06/24/98	0.128	0.0057	0.056	1.1050	0.0953	NA	0.0050	1.800	<0.0013	12.60
405.15.97	Belvedere Park Lake	LMB	W	06/24/98	0.031	0.0164	0.061	0.5067	0.0196	0.061	0.0220	0.573	0.0031	20.30

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508.10.45	Sacramento R/Keswick Dam	RBT	F	11/30/98	0.068	0.0037	0.178	0.5935	<0.0003	0.048	0.0190	0.363	<0.0013	4.94
508.10.45	Sacramento R/Keswick Dam	RBT	L	11/30/98	0.334	1.0240	0.281	112.6000	0.0057	NA	0.1400	4.450	0.2039	20.00
510.00.30	Sacramento R/Hood	WCF	F	10/27/98	0.040	0.0018	0.066	0.4423	<0.0003	0.476	<0.0010	0.163	<0.0013	4.66
510.00.30	Sacramento R/Hood	WCF	W	10/27/98	0.070	0.0426	0.276	1.2380	0.0942	0.338	0.1010	0.338	0.0054	12.40
510.00.30	Sacramento R/Hood	LMB	F	11/19/98	0.136	0.0003	0.065	0.2056	<0.0003	0.779	0.0020	0.312	<0.0013	3.18
510.00.30	Sacramento R/Hood	LMB	W	11/19/98	0.167	0.0136	0.242	0.4209	0.1944	0.326	<0.0010	0.491	<0.0013	10.80
516.31.01	Camp Far West	LMB	F	10/28/98	NA	NA	NA	NA	NA	0.338	NA	NA	NA	NA
516.31.01	Camp Far West	LMB	W	10/28/98	0.047	0.0281	0.192	1.0180	0.0541	0.275	0.0700	0.354	0.0026	13.50
535.30.02	Tuolumne R/Shilo Rd	LMB	F	09/11/98	0.046	<0.0003	0.040	0.1649	<0.0003	0.277	<0.0010	0.406	<0.0013	5.02
535.30.02	Tuolumne R/Shilo Rd	LMB	W	09/11/98	0.044	0.0037	0.146	0.3669	0.3321	0.122	<0.0010	0.476	<0.0013	13.40
535.70.03	Merced R/Hatfield St Rec Area	CCF	F	11/05/98	0.041	0.0005	0.129	0.3658	<0.0003	0.328	<0.0010	0.319	<0.0013	5.66
535.70.03	Merced R/Hatfield St Rec Area	CCF	W	11/05/98	0.082	0.0144	0.218	0.5988	0.1475	0.145	<0.0010	0.454	0.0014	16.40
535.70.03	Merced R/Hatfield St Rec Area	LMB	F	11/05/98	0.053	<0.0003	0.071	0.2095	<0.0003	0.439	<0.0010	0.521	<0.0013	4.19
535.70.03	Merced R/Hatfield St Rec Area	LMB	W	11/05/98	0.080	0.0066	0.220	1.0780	0.0385	0.113	<0.0010	0.414	0.0029	12.80
541.10.90	San Joaquin R/Vernalis	LMB	F	08/18/98	0.090	0.0003	0.058	0.2323	<0.0003	0.316	<0.0010	0.681	<0.0013	6.21
541.10.90	San Joaquin R/Vernalis	LMB	W	08/18/98	0.138	0.0031	0.135	0.4096	0.0640	0.156	<0.0010	0.663	<0.0013	12.90
541.10.90	San Joaquin R/Vernalis	WCF	F	08/26/98	0.048	0.0007	0.067	0.4002	<0.0003	0.333	0.0010	0.222	<0.0013	5.38
541.10.92	San Joaquin R/Crows Landing	LMB	F	09/11/98	0.063	0.0004	0.065	0.1808	<0.0003	0.307	0.0020	0.669	<0.0013	5.06
541.20.16	Mud Slough	WCF	F	12/17/98	0.021	0.0003	0.148	0.3474	<0.0003	0.192	0.0070	0.192	<0.0013	6.10
544.00.31	Old River/CV Pumps	WCF	F	09/03/98	0.041	<0.0003	0.063	0.3556	<0.0003	0.223	0.0040	0.177	<0.0013	3.69
551.20.00	Mendota Pool	LMB	F	11/04/98	0.125	<0.0003	0.103	0.2574	<0.0003	0.250	0.0030	0.709	<0.0013	5.97
603.10.06	Crowley Lake	RBT	F	09/23/98	0.100	<0.0003	0.122	0.4257	<0.0003	0.181	0.0020	0.222	<0.0013	4.85
603.10.06	Crowley Lake	RBT	L	09/23/98	0.218	0.0090	0.128	23.9800	<0.0003	NA	0.0140	2.090	0.1464	18.50
626.80.04	Little Rock Cr/u/s Res	STB	W	11/09/98	0.022	0.0163	0.182	1.6080	0.0897	0.037	0.0530	0.216	0.0027	28.80
632.10.05	Poison Creek	RBT	F	09/17/98	<0.017	<0.0003	0.122	0.4586	<0.0003	0.044	0.0130	0.152	<0.0013	3.84
632.10.05	Poison Creek	RBT	L	09/17/98	0.115	0.0168	0.081	25.8400	<0.0003	NA	0.0050	1.770	0.1492	17.60
634.10.02	Heavenly Valley Creek	BN	F	09/30/98	0.028	0.0006	0.060	0.2934	<0.0003	0.041	<0.0010	0.153	<0.0013	5.72
634.10.02	Heavenly Valley Creek	BN	L	09/30/98	<0.017	0.0354	0.081	17.2800	<0.0003	NA	0.0040	0.512	0.2623	22.10
634.10.07	Upper Truckee R/Tahoe Paradise	BN	F	09/30/98	0.094	<0.0001	0.259	0.5210	<0.0001	0.191	0.0060	0.203	<0.0013	4.32
634.10.07	Upper Truckee R/Tahoe Paradise	BN	L	09/30/98	0.050	0.0425	0.084	11.3500	0.0011	NA	0.0020	0.576	0.1867	13.80

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Toxic Substances Monitoring Program

Preliminary Summary of 1998 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
635.20.16	Cold Stream Cr/u/s Donner Cr	BN	F	10/15/98	0.058	<0.0003	0.127	0.4894	<0.0003	0.071	0.0020	0.136	<0.0013	4.21
635.20.16	Cold Stream Cr/u/s Donner Cr	BN	L	10/15/98	0.023	0.0473	0.119	10.4200	<0.0003	NA	<0.0010	0.577	0.2390	14.90
637.20.31	Susan R/u/s Susanville	RBT	F	10/16/98	<0.017	<0.0003	0.114	0.3884	<0.0003	0.030	0.0040	0.101	<0.0013	4.90
637.20.31	Susan R/u/s Susanville	RBT	L	10/16/98	0.049	0.0303	0.111	73.5900	<0.0003	NA	0.0100	0.907	0.3805	19.40
715.40.08	Palo Verde Outfall Drain	LMB	F	11/12/98	0.068	<0.0003	0.058	0.2224	<0.0003	NA	0.0020	0.614	<0.0013	4.66
723.10.01	Alamo R/Calipatria	CCF	F	11/11/98	0.118	<0.0003	0.110	0.2526	<0.0003	NA	<0.0010	0.786	<0.0013	4.52
723.10.02	New R/Westmorland	CCF	F	11/11/98	0.058	<0.0003	0.067	0.3041	<0.0003	0.044	0.0050	0.826	<0.0013	5.55
723.10.02	New R/Westmorland	CCF	L	11/11/98	0.129	0.0091	0.090	1.5630	0.0514	NA	0.0020	2.200	0.0023	16.70
728.00.90	Salton Sea/South	TL	F	11/11/98	1.310	<0.0003	0.084	0.2784	<0.0003	<0.005	0.0070	2.200	<0.0013	4.72
728.00.90	Salton Sea/South	TL	L	11/11/98	0.700	0.0118	0.158	0.9736	0.0148	NA	0.1480	4.150	0.0046	17.30
728.00.92	Salton Sea/North	TL	F	11/10/98	1.900	<0.0003	0.060	0.1789	<0.0003	<0.005	0.0060	2.730	<0.0013	3.75
728.00.92	Salton Sea/North	TL	L	11/10/98	0.854	0.0333	0.106	1.5690	0.0197	NA	0.2370	6.270	0.0042	19.90
801.11.05	Delhi Channel	MUL	W	06/09/98	0.882	0.0224	0.284	1.5780	0.2108	0.006	0.0870	0.949	0.0109	14.50
801.11.07	San Diego Cr/Michelson Dr	PRS	W	06/09/98	0.344	0.0915	0.200	0.9073	0.0410	0.005	0.0400	1.050	0.0052	24.50
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	06/09/98	0.200	0.1514	0.094	0.6872	0.0138	0.030	0.0050	0.971	0.0034	41.10
801.11.96	Peters Canyon Channel	PRS	W	06/09/98	0.116	0.0891	0.105	0.8800	0.0218	0.042	0.0190	1.130	0.0018	36.70
801.11.99	Upper Newport Bay/Newport Dunes	BSS	F	06/10/98	8.620	0.0028	0.171	0.3616	<0.0003	0.541	0.0040	0.301	<0.0013	3.65
801.11.99	Upper Newport Bay/Newport Dunes	BSS	L	06/10/98	7.730	0.2400	0.640	0.9350	<0.0001	0.131	<0.0002	1.950	0.0080	4.13
902.21.01	DeLuz Creek	BLB	F	07/07/98	0.023	0.0006	0.081	0.3432	<0.0003	0.047	0.0030	0.279	<0.0013	6.74
902.21.01	DeLuz Creek	BLB	F	07/07/98	<0.017	0.0007	0.065	0.3849	<0.0003	0.040	0.0040	0.316	<0.0013	6.00
902.21.01	DeLuz Creek	BLB	L	07/07/98	0.076	0.0220	0.065	4.5530	0.0023	NA	0.0040	0.853	0.0062	15.00
902.21.01	DeLuz Creek	BLB	L	07/07/98	0.079	0.0200	0.054	4.7690	0.0027	NA	0.0030	0.778	0.0082	14.20
902.22.02	Sandia Canyon Cr	BLB	F	07/07/98	0.028	0.0059	0.061	0.4965	0.0322	0.043	0.0050	0.469	<0.0013	7.28
902.22.02	Sandia Canyon Cr	BLB	L	07/07/98	0.105	0.0157	0.060	3.6490	0.0004	NA	0.0020	1.450	0.0061	14.70
905.23.01	Felicita Cr/East Fork	GAM	W	07/08/98	0.037	0.0051	0.100	0.8854	0.0016	0.034	0.0350	0.325	0.0065	24.90
909.11.09	San Diego R/d/s Alvarado Cr	GSH	W	08/08/98	0.121	0.0131	0.087	1.0460	0.0400	0.014	<0.0010	0.528	0.0026	34.30
909.12.00	F-G St Salt Marsh/Chula Vista	MOL	W	07/08/98	0.338	0.0302	0.894	4.3880	0.4719	<0.005	0.2320	0.429	0.0552	-0.003

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit.

Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1998 Data: Organic Chemicals in Fish and Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
114.21.03	Laguna de Santa Rosa/Sebastopol	CP	F	08/13/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
114.21.03	Laguna de Santa Rosa/Sebastopol	RSF	F	08/13/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
114.21.03	Laguna de Santa Rosa/Sebastopol	SBF	F	08/13/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.0	<1.0	1.0	<2.0	<2.0
114.21.03	Laguna de Santa Rosa/Sebastopol	SBF	F	08/13/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.7	<1.0	1.7	<2.0	<2.0
114.21.03	Laguna de Santa Rosa/Sebastopol	SKR	F	08/13/98	<1.0	<1.0	2.1	<1.0	<2.0	<2.0	2.3	<1.0	4.4	<2.0	<2.0
114.21.04	Laguna de Santa Rosa/Occidental	BLB	F	08/13/98	<1.0	<1.0	3.5	<1.0	<2.0	<2.0	5.0	<1.0	8.4	<2.0	<2.0
114.21.04	Laguna de Santa Rosa/Occidental	CP	F	08/13/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
114.21.04	Laguna de Santa Rosa/Occidental	CP	F	08/13/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
114.21.04	Laguna de Santa Rosa/Occidental	CCF	F	08/13/98	<1.0	<1.0	2.6	<1.0	<2.0	<2.0	4.4	<1.0	7.0	<2.0	<2.0
114.21.04	Laguna de Santa Rosa/Occidental	PACI	F	08/13/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
114.21.03	<2.0	<2.0	3.0	<2.0	9.1	<3.0	<5.0	<3.0	NA	12.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.03	<2.0	<2.0	<2.0	<2.0	2.0	<3.0	<5.0	<3.0	NA	2.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.03	<2.0	<2.0	3.2	<2.0	11.7	<3.0	<5.0	<3.0	NA	14.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.03	<2.0	2.0	4.7	<2.0	16.2	<3.0	<5.0	<3.0	NA	22.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.03	<2.0	<2.0	3.6	<2.0	13.3	<3.0	<5.0	<3.0	NA	16.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.04	<2.0	<2.0	7.9	<2.0	38.9	<3.0	<5.0	<3.0	NA	46.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.04	<2.0	<2.0	<2.0	<2.0	9.2	<3.0	<5.0	<3.0	NA	9.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.04	<2.0	<2.0	<2.0	<2.0	9.0	<3.0	<5.0	<3.0	NA	9.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.04	<2.0	<2.0	4.0	<2.0	21.2	<3.0	<5.0	<3.0	NA	25.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.04	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
114.21.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
114.21.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
114.21.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.0
114.21.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.7
114.21.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	4.4
114.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	4.9	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	8.4
114.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
114.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
114.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	4.8	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	7.0
114.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1998 Data: Organic Chemicals in Fish and Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
114.21.04	Laguna de Santa Rosa/Occidental	SBF	F	08/13/98	<1.0	<1.0	2.3	<1.0	<2.0	<2.0	2.5	<1.0	4.8	<2.0	<2.0
114.21.04	Laguna de Santa Rosa/Occidental	SBF	F	08/13/98	<1.0	<1.0	2.5	<1.0	<2.0	<2.0	2.6	<1.0	5.0	<2.0	<2.0
309.10.04	Old Salinas R/Monterey Dunes Brg	HCH	F	07/15/98	<1.0	<1.0	7.1	<1.0	4.8	3.7	8.4	1.2	25.2	2.6	326.0
309.10.93	Salinas R/Davis Rd	SKR	W	07/13/98	<1.0	<1.0	3.0	<1.0	<2.0	<2.0	4.0	1.2	8.1	6.8	165.0
309.10.94	Salinas R/HWY 1 Brg	SKR	F	07/14/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	28.2
309.10.95	Tembladero Sl/Castroville	GAM	W	07/14/98	<1.0	<1.0	<2.0	<1.0	<2.0	4.7	14.4	6.4	25.4	13.8	244.0
402.10.05	Ventura R/d/s OVSD Discharge	AC	W	06/26/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	6.1	2.3	8.4	<2.0	<2.0
402.10.06	Ventura R/u/s OVSD Discharge	AC	W	06/26/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	4.4	1.3	5.8	<2.0	<2.0
403.12.07	Conejo Creek	GAM	W	06/25/98	<1.0	<1.0	3.9	<1.0	2.7	6.3	19.3	9.9	42.1	4.2	11.7
403.12.07	Conejo Creek	GAM	W	06/25/98	<1.0	<1.0	4.8	<1.0	3.2	<2.0	21.2	10.6	39.7	4.2	11.4

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
114.21.04	<2.0	2.4	5.5	<2.0	32.7	<3.0	<5.0	<3.0	NA	40.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.04	<2.0	2.6	5.8	<2.0	32.8	<3.0	<5.0	<3.0	NA	41.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
309.10.04	67.9	38.6	129.0	18.9	1130.0	5.6	14.3	23.3	NA	1359.7	NA	<20.0	<2.0	<10.0	<10.0	ND	5.7	<6.0
309.10.93	12.3	5.8	29.6	2.1	320.0	6.3	53.8	8.1	NA	425.7	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
309.10.94	3.1	2.9	17.2	<2.0	98.8	<3.0	20.3	3.1	NA	142.3	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
309.10.95	287.0	34.4	219.0	20.2	1570.0	4.2	241.0	61.1	NA	2149.9	NA	<20.0	<2.0	<10.0	13.9	13.9	3.6	<6.0
402.10.05	2.4	<2.0	<2.0	<2.0	20.1	<3.0	<5.0	<3.0	NA	20.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
402.10.06	<2.0	<2.0	<2.0	<2.0	20.0	<3.0	<5.0	<3.0	NA	20.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.12.07	16.5	8.3	34.6	9.7	844.0	<3.0	94.0	11.4	NA	1002.0	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
403.12.07	17.2	8.1	33.9	10.2	932.0	<3.0	100.0	<3.0	NA	1084.2	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
114.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	3.1	2.2	<4.0	<25.0	<10.0	<10.0	ND	<20.0	4.8
114.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	5.0
309.10.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	1.7	1.4	<5.0	4.3	<2.0	<4.0	<25.0	71.0	26.2	97.2	478.0	578.5
309.10.93	<1.0	<2.0	<2.0	<1.0	ND	<2.0	1.1	0.6	<5.0	<3.0	<2.0	<4.0	<25.0	56.2	<10.0	56.2	147.0	168.6
309.10.94	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	35.8	38.9
309.10.95	<1.0	<2.0	<2.0	<1.0	ND	<2.0	2.5	0.3	<5.0	14.4	<2.0	<4.0	<25.0	114.0	20.9	134.9	356.0	688.4
402.10.05	<1.0	<2.0	<2.0	5.8	5.8	<2.0	<1.0	0.6	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	16.6
402.10.06	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	5.8
403.12.07	<1.0	<2.0	<2.0	4.0	4.0	<2.0	1.1	0.7	<5.0	4.9	<2.0	<4.0	<25.0	20.3	<10.0	20.3	819.0	882.6
403.12.07	<1.0	<2.0	<2.0	4.0	4.0	<2.0	1.1	0.7	<5.0	5.2	<2.0	<4.0	<25.0	22.0	<10.0	22.0	874.0	936.0

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1998 Data: Organic Chemicals in Fish and Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
403.67.08	Arroyo Simi/Madera Rd	AC	W	06/25/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.5	<1.0	2.5	2.3	9.2
404.23.04	Lindero Lake	CP	F	06/24/98	<1.0	<1.0	5.0	1.6	2.9	<2.0	5.6	<1.0	15.1	<2.0	<2.0
405.15.02	El Dorado Park Lake	LMB	F	06/23/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
405.15.22	McArthur Park Lake	GSF	F	06/24/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
405.15.97	Belvedere Park Lake	LMB	W	06/24/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.7	<1.0	1.7	<2.0	<2.0
510.00.30	Sacramento R/Hood	WCF	F	10/27/98	<1.0	<1.0	3.4	<1.0	2.2	2.3	7.3	<1.0	15.1	<2.0	<2.0
510.00.30	Sacramento R/Hood	WCF	W	10/27/98	<1.0	<1.0	8.2	<1.0	5.2	6.0	19.7	1.1	40.3	<2.0	<2.0
510.00.30	Sacramento R/Hood	LMB	F	11/19/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
510.00.30	Sacramento R/Hood	LMB	W	11/19/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	3.1	<1.0	3.1	<2.0	<2.0
535.30.02	Tuolumne R/Shilo Rd	LMB	F	09/11/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
403.67.08	<2.0	<2.0	<2.0	<2.0	38.0	<3.0	<5.0	<3.0	NA	38.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
404.23.04	<2.0	<2.0	5.8	<2.0	13.5	<3.0	<5.0	<3.0	NA	19.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.15.02	<2.0	<2.0	<2.0	<2.0	4.2	<3.0	<5.0	<3.0	NA	4.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.15.22	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.15.97	<2.0	<2.0	<2.0	<2.0	9.3	<3.0	<5.0	<3.0	NA	9.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
510.00.30	<2.0	<2.0	12.9	<2.0	125.0	<3.0	<5.0	3.7	NA	141.6	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
510.00.30	3.3	2.1	28.9	<2.0	349.0	<3.0	7.0	8.4	NA	395.4	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
510.00.30	<2.0	<2.0	<2.0	<2.0	5.9	<3.0	<5.0	<3.0	NA	5.9	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
510.00.30	2.6	<2.0	3.9	<2.0	49.2	<3.0	<5.0	<3.0	NA	53.1	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
535.30.02	<2.0	<2.0	<2.0	<2.0	14.6	<3.0	<5.0	<3.0	NA	14.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
403.67.08	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	6.7	<2.0	<4.0	<25.0	29.1	<10.0	29.1	<20.0	2.5
404.23.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.3	<5.0	28.8	<2.0	<4.0	<25.0	<10.0	<10.0	ND	26.2	41.3
405.15.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
405.15.22	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
405.15.97	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.5	<5.0	<3.0	<2.0	<4.0	<25.0	31.0	<10.0	31.0	<20.0	1.7
510.00.30	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	<3.0	<2.0	<4.0	89.3	83.8	30.2	203.3	42.8	58.0
510.00.30	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.7	<5.0	3.6	<2.0	<4.0	123.0	189.0	61.0	373.0	60.5	104.0
510.00.30	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
510.00.30	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	<3.0	<2.0	<4.0	<25.0	24.1	29.1	53.2	20.6	26.3
535.30.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1998 Data: Organic Chemicals in Fish and Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
535.30.02	Tuolumne R/Shilo Rd	LMB	W	09/11/98	<1.0	<1.0	4.7	<1.0	2.0	3.3	11.3	2.2	23.5	36.8	<2.0
535.70.03	Merced R/Hatfield St Rec Area	CCF	F	11/05/98	<1.0	<1.0	5.1	<1.0	3.0	3.2	9.9	1.7	22.8	<2.0	2.3
535.70.03	Merced R/Hatfield St Rec Area	CCF	W	11/05/98	<1.0	<1.0	5.3	<1.0	3.1	3.3	12.2	1.9	25.9	2.1	3.0
535.70.03	Merced R/Hatfield St Rec Area	LMB	F	11/05/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.2	<1.0	1.2	<2.0	<2.0
535.70.03	Merced R/Hatfield St Rec Area	LMB	W	11/05/98	<1.0	<1.0	4.2	<1.0	<2.0	3.8	11.9	2.7	22.6	7.7	3.0
541.10.90	San Joaquin R/Vernalis	LMB	F	08/18/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.0	<1.0	1.0	<2.0	<2.0
541.10.90	San Joaquin R/Vernalis	LMB	W	08/18/98	<1.0	<1.0	5.4	<1.0	2.2	5.2	15.6	2.0	30.5	19.7	2.1
541.10.90	San Joaquin R/Vernalis	WCF	F	08/26/98	<1.0	<1.0	2.7	<1.0	<2.0	2.2	6.9	<1.0	11.9	3.8	<2.0
541.10.92	San Joaquin R/Crows Landing	LMB	F	09/11/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
541.20.16	Mud Slough	WCF	F	12/17/98	<1.0	<1.0	7.5	<1.0	3.0	3.8	9.8	1.6	25.7	3.7	6.2

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
535.30.02	3.8	4.8	22.8	3.8	347.0	<3.0	18.1	6.4	NA	402.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
535.70.03	4.2	2.4	26.1	2.7	465.0	<3.0	27.4	6.2	NA	529.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
535.70.03	4.8	2.3	27.3	2.8	438.0	<3.0	20.7	6.9	NA	498.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
535.70.03	<2.0	<2.0	<2.0	<2.0	40.6	<3.0	<5.0	<3.0	NA	40.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
535.70.03	9.9	4.2	19.8	3.7	476.0	4.1	30.3	5.1	NA	543.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
541.10.90	<2.0	<2.0	2.1	<2.0	42.7	<3.0	<5.0	<3.0	NA	44.8	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
541.10.90	13.5	8.5	30.5	7.3	632.0	5.3	47.5	8.6	NA	739.6	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
541.10.90	2.5	<2.0	11.4	<2.0	262.0	<3.0	17.5	3.4	NA	294.3	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
541.10.92	<2.0	<2.0	<2.0	<2.0	18.5	<3.0	<5.0	<3.0	NA	18.5	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
541.20.16	12.7	3.9	33.9	3.3	320.0	<3.0	6.2	8.4	NA	375.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
535.30.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.8	<5.0	<3.0	<2.0	<4.0	35.1	45.9	41.8	122.8	68.8	96.2
535.70.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	4.3	<5.0	<3.0	<2.0	<4.0	<25.0	62.1	23.8	85.9	130.0	157.0
535.70.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	5.6	<5.0	<3.0	<2.0	<4.0	<25.0	63.9	22.9	86.8	94.9	125.6
535.70.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.2
535.70.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.8	<5.0	<3.0	<2.0	<4.0	<25.0	27.0	<10.0	27.0	103.0	135.5
541.10.90	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	29.9	30.9
541.10.90	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.9	<5.0	<3.0	<2.0	<4.0	<25.0	40.0	20.5	60.5	407.0	451.0
541.10.90	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<50.0	16.0	<10.0	16.0	122.0	136.3
541.10.92	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
541.20.16	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.8	<5.0	<3.0	<2.0	<4.0	<25.0	63.8	18.7	82.5	152.0	190.4

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.
F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1998 Data: Organic Chemicals in Fish and Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
544.00.31	Old River/CV Pumps	WCF	F	09/03/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	3.8	<1.0	3.8	3.5	<2.0
632.10.05	Poison Creek	RBT	F	09/17/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
634.10.02	Heavenly Valley Creek	BN	F	09/30/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
715.40.08	Palo Verde Outfall Drain	LMB	F	11/12/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	5.1
723.10.01	Alamo R/Calipatria	CCF	F	11/11/98	<1.0	<1.0	3.3	<1.0	<2.0	2.3	5.1	<1.0	10.8	194.0	2040.0
723.10.02	New R/Westmorland	CCF	F	11/11/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.6	<1.0	2.6	12.5	440.0
728.00.90	Salton Sea/South	TL	F	11/11/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	7.3
728.00.92	Salton Sea/North	TL	F	11/10/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
801.11.05	Delhi Channel	MUL	W	06/09/98	<1.0	<1.0	12.8	1.2	4.9	6.3	17.1	1.9	44.1	<2.0	<2.0
801.11.07	San Diego Cr/Michelson Dr	PRS	W	06/09/98	<1.0	<1.0	3.3	<1.0	<2.0	<2.0	3.8	1.1	8.1	5.4	4.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
544.00.31	<2.0	<2.0	6.3	<2.0	192.0	<3.0	<5.0	<3.0	NA	198.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
632.10.05	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
634.10.02	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
715.40.08	<2.0	<2.0	<2.0	<2.0	25.3	<3.0	<5.0	<3.0	NA	25.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
723.10.01	33.4	16.7	38.0	11.3	870.0	<3.0	9.9	13.2	NA	959.1	NA	<20.0	4.7	<10.0	<10.0	4.7	3.0	<6.0
723.10.02	5.0	<2.0	6.1	<2.0	210.0	<3.0	<5.0	3.6	NA	219.6	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
728.00.90	<2.0	<2.0	<2.0	<2.0	36.4	<3.0	<5.0	<3.0	NA	36.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
728.00.92	<2.0	<2.0	<2.0	<2.0	6.7	<3.0	<5.0	<3.0	NA	6.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.05	8.7	5.4	37.2	<2.0	213.0	3.5	28.1	10.4	NA	297.6	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
801.11.07	5.7	4.0	12.1	2.4	179.0	<3.0	<5.0	6.1	NA	203.5	NA	<20.0	3.2	<10.0	<10.0	3.2	3.4	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
544.00.31	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	44.4	48.2
632.10.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
634.10.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
715.40.08	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
723.10.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	2.2	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	563.0	614.8
723.10.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	1.9	<5.0	<3.0	<2.0	<4.0	<25.0	26.3	51.3	77.6	64.5	72.1
728.00.90	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
728.00.92	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
801.11.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	1.3	0.4	<5.0	18.2	<2.0	<4.0	<50.0	44.0	15.0	59.0	104.0	158.1
801.11.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	1.5	0.4	<5.0	101.0	2.5	<4.0	<25.0	<10.0	<10.0	ND	83.0	104.8

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1998 Data: Organic Chemicals in Fish and Crayfish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dactha
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	06/09/98	<1.0	<1.0	3.9	<1.0	<2.0	2.8	7.1	<1.0	13.8	<2.0	3.0
801.11.96	Peters Canyon Channel	PRS	W	06/09/98	<1.0	<1.0	10.4	<1.0	6.8	7.5	26.9	3.2	54.8	16.5	6.3
801.11.99	Upper Newport Bay/Newport Dunes	BSS	F	06/10/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
902.21.01	DeLuz Creek	BLB	F	07/07/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
902.21.01	DeLuz Creek	BLB	F	07/07/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
902.22.02	Sandia Canyon Cr	BLB	F	07/07/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
905.23.01	Felicita Cr/East Fork	GAM	W	07/08/98	<1.0	<1.0	<2.0	<1.0	<2.0	2.3	8.9	4.0	15.2	<2.0	<2.0
909.11.09	San Diego R/d/s Alvarado Cr	GSH	W	08/08/98	<1.0	2.7	15.0	1.6	10.7	6.9	18.6	2.6	58.1	<2.0	<2.0
909.12.00	F-G St Salt Marsh/Chula Vista	MOL	W	07/08/98	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.4	<1.0	2.4	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethio
801.11.09	3.2	4.9	16.5	2.9	420.0	<3.0	6.6	7.8	NA	458.8	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
801.11.96	12.5	36.8	63.7	15.6	1980.0	19.3	13.9	38.9	NA	2168.2	NA	<20.0	5.4	<10.0	<10.0	5.4	2.0	<6.0
801.11.99	<2.0	<2.0	<2.0	<2.0	28.4	<3.0	<5.0	<3.0	NA	28.4	NA	<20.0	<2.0	<10.0	<10.0	ND	<2.0	<6.0
902.21.01	<2.0	<2.0	<2.0	<2.0	2.6	<3.0	<5.0	<3.0	NA	2.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
902.21.01	<2.0	<2.0	<2.0	<2.0	2.8	<3.0	<5.0	<3.0	NA	2.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
902.22.02	<2.0	<2.0	<2.0	<2.0	3.0	<3.0	<5.0	<3.0	NA	3.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
905.23.01	3.4	<2.0	<2.0	<2.0	10.2	<3.0	<5.0	<3.0	NA	10.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
909.11.09	5.1	<2.0	4.8	<2.0	16.5	<3.0	<5.0	<3.0	NA	21.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
909.12.00	2.6	<2.0	9.5	<2.0	32.7	<3.0	<5.0	<3.0	NA	42.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
801.11.09	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.3	<5.0	85.0	<2.0	<4.0	<25.0	33.6	27.1	60.7	91.6	108.5
801.11.96	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.8	<5.0	53.6	<2.0	<4.0	<25.0	43.3	36.1	79.4	330.0	404.8
801.11.99	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<50.0	<10.0	<10.0	ND	<20.0	ND
902.21.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
902.21.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
902.22.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
905.23.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	18.6
909.11.09	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.3	<5.0	16.9	<2.0	<4.0	<25.0	41.2	<10.0	41.2	<20.0	63.2
909.12.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.3	<5.0	<3.0	4.7	<4.0	195.0	204.0	53.7	452.7	<20.0	5.0

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 3

Toxic Substances Monitoring Program

1998 Freshwater Fish Code List*

Species Code	Common Name	Species Name	Family Name
AC	Arroyo Chub	*Gila orcutti*	Cyprinidae
BLB	Black Bullhead	*Ameiurus melas*	Ictaluridae
BN	Brown Trout	*Salmo trutta*	Salmonidae
CCF	Channel Catfish	*Ictalurus punctatus*	Ictaluridae
CP	Carp	*Cyprinus carpio*	Cyprinidae
GAM	Mosquitofish	*Gambusia affinis*	Poeciliidae
GSF	Green Sunfish	*Lepomis cyanellus*	Centrarchidae
GSH	Golden Shiner	*Notemigonus crysoleucas*	Cyprinidae
HCH	Hitch	*Lavinia exilicauda*	Cyprinidae
LMB	Largemouth Bass	*Micropterus salmoides*	Centrarchidae
MOL	Sailfin Molly	*Poecilia latipinna*	Poeciliidae
PRS	Red Shiner	*Cyprinella lutrensis*	Cyprinidae
RBT	Rainbow Trout	*Oncorhynchus mykiss*	Salmonidae
RSF	Redear Sunfish	*Lepomis microlophus*	Centrarchidae
SBF	Sacramento Blackfish	*Orthodon microlepidotus*	Cyprinidae
SKR	Sucker	*Catostomus sp.*	Catostomidae
STB	Threespine Stickleback	*Gasterosteus aculeatus*	Gasterosteidae
TL	Tilapia	*Tilapia sp.*	Cichlidae
WCF	White Catfish	*Ameiurus catus*	Ictaluridae

1998 Marine Fish Code List*

Species Code	Common Name	Species Name	Family Name
BSS	Brown Smoothhound Shark	*Mustelus henlei*	Carcharhinidae
MUL	Striped Mullet	*Mugil cephalus*	Mugilidae

1998 Non-Fish Code List

Species Code	Common Name	Species Name	Family Name
PACI	Crayfish	*Pacifastacus leniusculus*	Astacidae

* Common and scientific fish names were obtained from Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Cahada. American Fisheries Society Special Publication 20, Bethesda, Maryland.

TABLE 3

Toxic Substances Monitoring Program
1999 Species Code List

Freshwater Fish *

Species Code	Common Name	Species Name	Family Name
AC	Arroyo Chub	*Gila orcutti*	Cyprinidae
BB	Brown Bullhead	*Ameiurus nebulosus*	Ictaluridae
BCR	Black Crappie	*Pomoxis nigromaculatus*	Centrarchidae
BG	Bluegill	*Lepomis macrochirus*	Centrarchidae
BK	Brook Trout	*Salvelinus fontinalis*	Salmonidae
BLB	Black Bullhead	*Ameiurus melas*	Ictaluridae
BN	Brown Trout	*Salmo trutta*	Salmonidae
CCF	Channel Catfish	*Ictalurus punctatus*	Ictaluridae
CP	Carp	*Cyprinus carpio*	Cyprinidae
GAM	Mosquitofish	*Gambusia affinis*	Poeciliidae
GSF	Green Sunfish	*Lepomis cyanellus*	Centrarchidae
LMB	Largemouth Bass	*Micropterus salmoides*	Centrarchidae
PCP	Prickly Sculpin	*Cottus asper*	Cottidae
PRS	Red Shiner	*Cyprinella lutrensis*	Cyprinidae
RBT	Rainbow Trout	*Oncorhynchus mykiss*	Salmonidae
RCH	California Roach	*Hesperoleucus symmetricus*	Cyprinidae
SKR	Sucker	*Catostomus sp.*	Catostomidae
SPM	Sacramento Pike Minnow	*Ptychocheilus grandis*	Cyprinidae
STB	Threespine Stickleback	*Gasterosteus aculeatus*	Gasterosteidae
TL	Tilapia	*Tilapia sp.*	Cichlidae

Marine Fish *

Species Code	Common Name	Species Name	Family Name
CKF	California Killifish	*Fundulus parvipinnis*	Cyprindontidae
ORC	Orangemouth Corvina	*Cynoscion xanthulus*	Sciaenidae
SSP	Shiner Perch	*Cymatogaster aggregata*	Embiotocidae
STF	Starry Flounder	*Platichthys stellatus*	Pleuronectidae
YFC	Yellowfin Croaker	*Umbrina roncador*	Sciaenidae

Non-Fish

Species Code	Common Name	Species Name	Family Name
TFC	Asiatic Clam (transplant)	*Corbicula manilensis*	Corbiculidae

* Common and scientific fish names were obtained from Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. American Fisheries Society Special Publication 20, Bethesda, Maryland.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
904.21.02	Buena Vista Lagoon	LMB	F	08/25/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
904.31.##	Agua Hedionda Cr/El Camino Real	GAM	W	08/24/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	4.7	2.6	7.2	<2.0	<2.0
904.51.03	San Marcos Cr	LMB	F	08/24/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
904.61.07	Escondido Cr/Elfin Forest Park	GSF	F	08/24/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
907.11.03	San Diego R/u/s Taylor St	LMB	F	08/23/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	3.0	<1.0	3.0	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
904.21.02	<2.0	<2.0	<2.0	<2.0	2.2	<3.0	<5.0	<3.0	NA	2.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
904.31.##	<2.0	<2.0	3.3	<2.0	42.8	<3.0	<5.0	<3.0	NA	46.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
904.51.03	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
904.61.07	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
907.11.03	<2.0	<2.0	<2.0	<2.0	4.8	<3.0	<5.0	<3.0	NA	4.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
904.21.02	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
904.31.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	7.2
904.51.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
904.61.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
907.11.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	18.0	<10.0	18.0	<20.0	3.0

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	08/05/99	<1.0	<1.0	4.2	<1.0	2.3	2.3	5.7	2.1	16.6	<2.0	<2.0
801.11.89	Lower Newport Bay/Rhine Ch	YFC	F	08/10/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
801.11.96	Peters Canyon Channel	PRS	W	08/05/99	<1.0	<1.0	3.2	<1.0	2.6	2.9	9.1	1.4	19.3	4.2	<2.0
801.11.96	Peters Canyon Channel	PRS	W	08/05/99	<1.0	<1.0	3.3	<1.0	2.8	3.2	9.8	1.5	20.7	5.2	<2.0
801.11.99	Upper Newport Bay/Newport Dunes	ORC	F	08/04/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.9	<1.0	1.9	<2.0	<2.0
901.12.##	Aliso Cr/Pacific Park Dr	PRS	W	08/27/99	<1.0	<1.0	5.4	1.2	2.0	<2.0	5.3	3.6	17.5	4.3	4.1
902.11.01	Santa Margarita R/Stuart Mesa Rd	CKF	W	08/25/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
902.22.03	Rainbow Creek	GSF	F	08/26/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
902.32.##	Murrietta Cr/u/s Temecula Cr	BLB	F	08/26/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.0	<1.0	2.0	<2.0	<2.0
904.10.##	Loma Alta Cr/College Blvd	GAM	W	08/26/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.6	<1.0	1.6	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
801.11.09	4.1	3.2	27.0	<2.0	139.0	<3.0	<5.0	8.9	NA	178.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.89	<2.0	<2.0	<2.0	<2.0	22.8	<3.0	<5.0	<3.0	NA	22.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.96	3.3	5.8	24.4	2.7	503.0	<3.0	<5.0	10.9	NA	546.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.96	3.4	5.8	25.8	2.8	516.0	3.1	<5.0	11.4	NA	564.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.99	<2.0	<2.0	6.0	<2.0	54.5	<3.0	<5.0	3.3	NA	63.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
901.12.##	8.8	<2.0	<2.0	<2.0	9.4	<3.0	<5.0	<3.0	NA	9.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
902.11.01	<2.0	2.6	4.8	<2.0	15.2	<3.0	<5.0	<3.0	NA	22.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
902.22.03	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
902.32.##	<2.0	<2.0	<2.0	<2.0	2.9	<3.0	<5.0	<3.0	NA	2.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
904.10.##	<2.0	<2.0	<2.0	<2.0	7.6	<3.0	<5.0	<3.0	NA	7.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
801.11.09	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.7	<5.0	329.0	<2.0	<4.0	<25.0	71.0	14.0	85.0	81.4	102.1
801.11.89	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	39.0	<10.0	39.0	<20.0	ND
801.11.96	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.6	<5.0	59.6	<2.0	<4.0	<25.0	26.0	15.0	41.0	72.0	94.6
801.11.96	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.6	<5.0	62.7	<2.0	<4.0	<25.0	29.0	15.0	44.0	80.5	104.6
801.11.99	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	21.0	<10.0	21.0	<20.0	1.9
901.12.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	2.9	0.4	<5.0	41.9	<2.0	<4.0	<25.0	22.0	<10.0	22.0	<20.0	29.2
902.11.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	5.2	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
902.22.03	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
902.32.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	2.0
904.10.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	4.9	<2.0	<4.0	<25.0	21.0	<10.0	21.0	<20.0	1.6

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
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Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
719.47.00	Coachella Valley Stormwater Ch	TL	W	12/08/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.8	<1.0	1.8	<2.0	3.0
723.10.02	New R/Westmorland	CP	F	12/09/99	<1.0	<1.0	5.2	<1.0	3.7	2.4	6.6	<1.0	17.9	44.1	337.0
723.10.12	Wiest Lake	LMB	F	12/06/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	5.7	3.2
723.10.21	Holtville Main Drain	CCF	F	12/05/99	<1.0	<1.0	2.1	<1.0	<2.0	2.3	6.9	<1.0	11.3	<2.0	938.0
723.10.30	Central Drain	CP	F	12/05/99	<1.0	<1.0	21.0	<1.0	23.9	12.1	25.1	3.2	85.3	177.0	945.0
723.10.31	South Central Drain	CCF	F	12/05/99	<1.0	<1.0	6.6	<1.0	3.4	6.3	16.2	1.4	33.8	44.0	940.0
728.00.90	Salton Sea/South	ORC	F	12/06/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	3.2
801.11.05	Delhi Channel	GAM	W	08/05/99	<1.0	<1.0	2.6	<1.0	<2.0	<2.0	3.7	<1.0	6.2	<2.0	<2.0
801.11.07	San Diego Cr/Michelson Dr	PRS	W	08/05/99	<1.0	<1.0	4.9	<1.0	3.6	2.5	6.1	2.9	19.9	3.4	<2.0
801.11.07	San Diego Cr/Michelson Dr	PRS	W	08/05/99	<1.0	<1.0	3.7	<1.0	2.9	2.2	5.2	2.3	16.4	2.9	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
719.47.00	3.1	<2.0	6.9	<2.0	277.0	<3.0	15.3	<3.0	NA	299.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
723.10.02	13.0	9.4	30.3	7.5	467.0	<3.0	<5.0	11.7	NA	525.9	NA	<20.0	2.8	<10.0	<10.0	2.8	<2.0	<6.0
723.10.12	<2.0	<2.0	2.1	<2.0	36.4	<3.0	<5.0	<3.0	NA	38.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
723.10.21	11.7	3.6	22.6	8.6	807.0	<3.0	11.8	11.7	NA	865.3	NA	<20.0	9.6	11.7	26.9	48.2	<2.0	<6.0
723.10.30	96.2	75.0	176.0	33.6	3026.0	7.1	13.9	52.8	NA	3384.4	NA	<20.0	4.8	<10.0	<10.0	4.8	<2.0	<6.0
723.10.31	72.7	20.3	41.6	18.0	2403.0	6.8	22.8	17.0	NA	2529.6	NA	<20.0	2.1	<10.0	<10.0	2.1	10.8	<6.0
728.00.90	<2.0	<2.0	<2.0	<2.0	78.7	<3.0	<5.0	<3.0	NA	78.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.05	<2.0	<2.0	7.3	<2.0	38.9	<3.0	<5.0	<3.0	NA	46.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
801.11.07	6.4	2.7	21.6	<2.0	137.0	<3.0	<5.0	6.4	NA	167.7	NA	49.1	<2.0	NA	NA	ND	<2.0	<6.0
801.11.07	5.4	2.1	18.4	<2.0	128.0	<3.0	<5.0	5.6	NA	154.1	NA	42.8	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
719.47.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	12.0	<10.0	12.0	27.6	32.5
723.10.02	<1.0	<2.0	<2.0	1.2	1.2	<2.0	<1.0	4.4	<5.0	<3.0	<2.0	<4.0	66.0	72.0	78.0	216.0	138.0	172.9
723.10.12	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	117.0	<10.0	<10.0	117.0	<20.0	ND
723.10.21	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	2.3	<5.0	<3.0	<2.0	<4.0	<25.0	37.0	<10.0	37.0	246.0	317.2
723.10.30	<1.0	<2.0	<2.0	1.2	1.2	<2.0	<1.0	7.3	<5.0	<3.0	<2.0	<4.0	40.0	65.0	25.0	130.0	2196.0	2383.6
723.10.31	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	3.1	<5.0	<3.0	<2.0	<4.0	<25.0	51.0	<10.0	51.0	1964.0	2083.4
728.00.90	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
801.11.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	27.0	<10.0	27.0	<20.0	6.2
801.11.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	1.3	<5.0	188.0	<2.0	<4.0	<25.0	40.0	11.0	51.0	67.0	93.3
801.11.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	1.1	<5.0	172.0	<2.0	<4.0	<25.0	37.0	13.0	50.0	54.1	75.9

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Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
634.10.##	Tallac Lagoon	RBT	F	09/17/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
634.10.#A	Tahoe Keys/Sailing Lagoon Marina	LMB	F	06/01/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
634.10.#B	Tahoe Keys/Sailing Lagoon	LMB	F	06/01/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	2.0
634.10.00	Upper Truckee R/d/s HWY 50	RBT	F	09/16/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
635.20.##	Trout Cr/Truckee/d/s Golf Course	BK	F	10/21/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
637.20.##	Gold Run Creek	RBT	F	10/21/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
637.20.25	Susan R/d/s Piute Creek	BK	F	10/22/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
637.20.31	Susan R/u/s Susanville	RBT	F	10/22/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
715.40.08	Palo Verde Outfall Drain	LMB	F	12/07/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
715.50.90	Colorado R/u/s Imperial Dam	LMB	F	12/07/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
634.10.##	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
634.10.#A	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
634.10.#B	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
634.10.00	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
635.20.##	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
637.20.##	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
637.20.25	<2.0	<2.0	<2.0	<2.0	11.3	<3.0	<5.0	<3.0	NA	11.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
637.20.31	<2.0	<2.0	<2.0	<2.0	2.9	<3.0	<5.0	<3.0	NA	2.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
715.40.08	<2.0	<2.0	<2.0	<2.0	33.2	<3.0	<5.0	<3.0	NA	33.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
715.50.90	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
634.10.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
634.10.#A	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
634.10.#B	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	<3.0	<2.0	<4.0	<25.0	10.0	<10.0	10.0	28.8	28.8
634.10.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
635.20.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	5.8	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
637.20.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
637.20.25	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	8.7	8.7	<4.0	<25.0	15.0	<10.0	15.0	<20.0	ND
637.20.31	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
715.40.08	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
715.50.90	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND

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Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
404.21.04	Malibu Cr/Tapia Park	AC	W	09/10/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	4.2	1.1	5.3	<2.0	<2.0
404.21.05	Malibu Cr/u/s Tapia Discharge	LMB	W	09/10/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.1	<1.0	1.1	<2.0	<2.0
404.21.07	Malibou Lake	LMB	F	08/12/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.2	<1.0	2.2	<2.0	<2.0
404.25.01	Westlake Lake	LMB	F	08/12/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	3.0	<1.0	3.0	<2.0	<2.0
405.12.03	Los Angeles River	TL	W	09/09/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.8	<1.0	1.8	<2.0	<2.0
405.15.04	San Gabriel River	TL	F	09/09/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
405.21.06	Los Angeles R/Los Feliz Rd	GAM	W	09/09/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	3.5	2.8	6.3	2.4	<2.0
405.52.01	Puddingstone Res	LMB	F	08/10/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.8	<1.0	2.8	<2.0	<2.0
511.10.08	Putah Creek/South Fork	LMB	F	09/30/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.7	<1.0	1.7	2.1	2.0
511.10.08	Putah Creek/South Fork	SKR	F	09/30/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
404.21.04	<2.0	<2.0	2.1	<2.0	16.9	<3.0	<5.0	<3.0	NA	19.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
404.21.05	<2.0	<2.0	<2.0	<2.0	7.1	<3.0	<5.0	<3.0	NA	7.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
404.21.07	<2.0	<2.0	<2.0	<2.0	5.7	<3.0	<5.0	<3.0	NA	5.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
404.25.01	<2.0	<2.0	<2.0	<2.0	8.1	<3.0	<5.0	<3.0	NA	8.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.12.03	3.7	<2.0	2.4	<2.0	7.3	<3.0	<5.0	<3.0	NA	9.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.15.04	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.21.06	6.4	<2.0	4.3	<2.0	16.5	<3.0	<5.0	<3.0	NA	20.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
405.52.01	<2.0	<2.0	<2.0	<2.0	10.7	<3.0	<5.0	<3.0	NA	10.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
511.10.08	<2.0	2.6	22.0	<2.0	63.9	<3.0	7.2	5.2	NA	100.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
511.10.08	<2.0	<2.0	2.9	<2.0	10.3	<3.0	<5.0	<3.0	NA	13.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
404.21.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.5	<5.0	4.7	<2.0	<4.0	<25.0	14.0	<10.0	14.0	<20.0	5.3
404.21.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.1
404.21.07	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	2.2
404.25.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	3.0
405.12.03	<1.0	<2.0	<2.0	5.3	5.3	<2.0	<1.0	<0.3	13.0	3.9	<2.0	<4.0	<25.0	25.0	11.0	36.0	<20.0	10.8
405.15.04	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
405.21.06	<1.0	<2.0	<2.0	7.4	7.4	<2.0	<1.0	<0.3	<5.0	4.5	<2.0	<4.0	27.0	31.0	10.0	68.0	<20.0	20.2
405.52.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	13.0	<10.0	13.0	<20.0	2.8
511.10.08	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	19.0	<10.0	19.0	<20.0	1.7
511.10.08	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
310.31.00	Arroyo Grande Creek Lagoon	STB	W	09/22/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.3	1.2	3.5	2.3	3.2
312.10.00	Santa Maria R/Mouth	STB	W	09/21/99	<1.0	<1.0	3.4	<1.0	<2.0	4.3	35.9	<1.0	43.6	25.8	12.6
314.10.00	Santa Ynez River Lagoon	STF	F	09/21/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
315.34.00	Carpinteria Marsh	CKF	W	09/21/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.9	<1.0	1.9	<2.0	<2.0
402.10.05	Ventura R/d/s OVSD Discharge	AC	F	08/13/99	***	***	***	***	***	***	***	***	***	***	***
402.10.06	Ventura R/u/s OVSD Discharge	AC	W	08/13/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.9	1.2	4.2	<2.0	<2.0
403.11.00	Santa Clara River Estuary	AC	W	08/13/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.4	<1.0	1.4	<2.0	6.6
403.12.06	Calleguas Creek	BB	F	08/11/99	<1.0	<1.0	2.1	<1.0	<2.0	<2.0	3.4	<1.0	5.5	<2.0	4.7
403.64.03	Arroyo Conejo/d/s Forks	BB	F	08/11/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.1	<1.0	2.1	6.0	<2.0
403.67.08	Arroyo Simi/Madera Rd	AC	W	08/12/99	<1.0	<1.0	2.9	<1.0	<2.0	3.2	6.8	3.5	16.3	<2.0	16.6

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
310.31.00	2.8	2.9	10.0	<2.0	120.0	<3.0	7.6	4.2	NA	144.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
312.10.00	188.0	204.0	803.0	23.2	5116.0	236.0	971.0	170.0	NA	7523.2	NA	<20.0	<2.0	NA	NA	ND	148.0	<6.0
314.10.00	<2.0	<2.0	<2.0	<2.0	3.9	<3.0	<5.0	<3.0	NA	3.9	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
315.34.00	<2.0	<2.0	7.2	<2.0	49.1	<3.0	<5.0	3.2	NA	59.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
402.10.05	***	***	***	***	***	***	***	***	NA	***	NA	***	***	***	***	***	***	***
402.10.06	<2.0	<2.0	<2.0	<2.0	11.4	<3.0	<5.0	<3.0	NA	11.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.11.00	<2.0	<2.0	5.8	<2.0	36.8	<3.0	<5.0	<3.0	NA	42.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.12.06	3.5	2.6	14.4	<2.0	208.0	5.7	42.0	3.5	NA	276.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.64.03	<2.0	<2.0	<2.0	<2.0	19.1	<3.0	<5.0	<3.0	NA	19.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
403.67.08	3.7	<2.0	2.1	<2.0	67.4	<3.0	<5.0	<3.0	NA	69.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
310.31.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	2.4	0.5	<5.0	<3.0	<2.0	<4.0	<25.0	11.0	<10.0	11.0	83.1	91.9
312.10.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	1.4	9.3	<3.0	<2.0	<4.0	<25.0	248.0	<10.0	248.0	7593.0	7972.6
314.10.00	<1.0	<2.0	<2.0	1.0	1.0	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.0
315.34.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	148.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.9
402.10.05	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
402.10.06	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.6	<5.0	<3.0	<2.0	<4.0	<25.0	11.0	<10.0	11.0	<20.0	4.2
403.11.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	3.3	<4.0	<25.0	<10.0	<10.0	ND	77.7	79.1
403.12.06	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.8	<5.0	<3.0	<2.0	<4.0	<25.0	30.0	<10.0	30.0	424.0	433.0
403.64.03	<1.0	<2.0	<2.0	1.3	1.3	<2.0	<1.0	0.6	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	3.4
403.67.08	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	1.4	<5.0	53.0	<2.0	<4.0	<25.0	40.0	<10.0	40.0	32.9	53.0

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.
*** Data not yet available.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
308.00.0#	Big Sur River Lagoon	STB	W	10/06/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
309.10.##	Salinas Rec Canal 5	TFC	W	04/29/99	<1.0	<1.0	10.4	<1.0	7.0	5.2	10.5	<1.0	33.1	304.0	540.0
309.10.00	Salinas R Lagoon	STB	W	10/07/99	<1.0	<1.0	4.3	<1.0	<2.0	3.2	7.1	2.7	17.2	<2.0	11.6
309.10.10	Alisal Sl/West Salinas	TFC	W	04/29/99	3.8	1.2	21.5	<1.0	12.6	3.4	10.2	2.3	51.2	18.7	38.1
309.10.17	Salinas Rec Canal/Airport Rd	TFC	W	04/29/99	<1.0	<1.0	2.8	<1.0	2.1	<2.0	2.9	<1.0	7.8	345.0	2901.0
310.12.00	Arroyo de la Cruz	STB	W	10/06/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
310.13.#A	Pico Creek Lagoon	PCP	W	09/22/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.6	<1.0	1.6	<2.0	<2.0
310.13.00	San Simeon Creek Lagoon	STB	W	09/22/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
310.14.00	Santa Rosa Cr Lagoon	STB	W	09/22/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.3	<1.0	1.3	<2.0	<2.0
310.24.00	San Luis Obispo Cr Lagoon	SSP	W	09/22/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.0	<1.0	2.0	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
308.00.0#	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
309.10.##	91.6	18.6	44.8	7.5	261.0	41.2	168.0	6.6	NA	547.6	NA	<20.0	3.8	<10.0	19.7	23.5	6.1	<6.0
309.10.00	57.6	12.8	42.5	2.9	311.0	8.4	48.4	18.6	NA	444.6	NA	<20.0	<2.0	NA	NA	ND	2.7	<6.0
309.10.10	195.0	96.5	194.0	10.9	517.0	9.4	28.2	32.4	NA	888.4	NA	<20.0	<2.0	<10.0	<10.0	ND	11.0	<6.0
309.10.17	70.8	20.3	57.2	2.3	94.0	<3.0	6.6	5.9	NA	186.3	NA	286.0	20.6	<10.0	19.2	39.8	8.3	<6.0
310.12.00	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
310.13.#A	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
310.13.00	<2.0	<2.0	<2.0	<2.0	8.1	<3.0	<5.0	<3.0	NA	8.1	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
310.14.00	<2.0	<2.0	<2.0	<2.0	4.7	<3.0	<5.0	<3.0	NA	4.7	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
310.24.00	<2.0	<2.0	<2.0	<2.0	18.0	<3.0	<5.0	<3.0	NA	18.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
308.00.0#	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
309.10.##	<1.0	<2.0	<2.0	2.8	2.8	<2.0	1.4	1.3	<5.0	9.2	4.8	<4.0	<25.0	29.6	<10.0	29.6	946.0	1104.4
309.10.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	1.1	0.7	<5.0	<3.0	2.5	<4.0	<25.0	37.0	<10.0	37.0	135.0	213.7
309.10.10	<1.0	<2.0	<2.0	<1.0	ND	<2.0	1.1	0.4	<5.0	<3.0	<2.0	<4.0	<25.0	44.1	<10.0	44.1	503.0	765.1
309.10.17	<1.0	<2.0	<2.0	11.7	11.7	<2.0	4.0	1.0	<5.0	17.1	<2.0	<4.0	<25.0	40.5	<10.0	40.5	219.0	361.4
310.12.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
310.13.#A	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.6
310.13.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
310.14.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.6	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.3
310.24.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	56.0	<10.0	56.0	<20.0	2.0

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
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F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
206.60.##	San Pablo Reservoir	CP	F	04/17/00	1.1	1.3	33.7	2.0	14.6	16.1	31.4	4.9	104.1	<2.0	<2.0
206.60.##	San Pablo Reservoir	CCF	F	04/17/00	1.2	1.3	28.2	1.9	12.6	12.0	26.2	3.1	85.3	<2.0	2.3
206.60.##	San Pablo Reservoir	CCF	F	04/17/00	1.7	2.3	51.2	3.1	23.6	23.0	45.4	4.8	153.4	<2.0	<2.0
206.60.##	San Pablo Reservoir	CCF	F	04/17/00	<1.0	<1.0	9.9	1.0	4.1	3.7	11.4	1.4	31.6	<2.0	<2.0
3##.##.#D	Gabilan Creek	TFC	W	04/29/99	<1.0	<1.0	2.1	<1.0	<2.0	<2.0	2.8	<1.0	5.0	4.0	4.8
304.10.00	Waddell Creek Lagoon	STB	W	10/05/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
305.10.##	Pajaro R/Pajaro	RCH	W	10/07/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.4	1.2	3.6	<2.0	3.1
305.10.##	Pajaro R/Pajaro	RCH	W	10/07/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	2.5	1.2	3.7	<2.0	2.9
306.00.05	Elkhorn Sl/u/s Elkhorn Rd Brg	TFC	W	04/29/99	<1.0	<1.0	6.4	<1.0	4.6	2.1	6.3	<1.0	19.5	3.8	11.4
307.00.01	Carmel Lagoon	STB	W	10/06/99	<1.0	<1.0	3.1	<1.0	<2.0	<2.0	6.8	<1.0	9.9	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
206.60.##	95.2	2.1	16.3	<2.0	68.5	<3.0	<5.0	3.3	NA	90.2	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	120.0	<2.0	10.4	<2.0	55.5	<3.0	6.1	<3.0	NA	72.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	110.0	2.3	17.7	<2.0	93.8	<3.0	12.0	3.9	NA	129.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	63.1	<2.0	5.1	<2.0	22.4	<3.0	<5.0	<3.0	NA	27.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
3##.##.#D	11.9	2.6	4.7	2.5	88.3	8.1	27.2	<3.0	NA	133.4	NA	30.5	<2.0	NA	NA	ND	<2.0	<6.0
304.10.00	<2.0	<2.0	<2.0	<2.0	8.5	<3.0	<5.0	<3.0	NA	8.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
305.10.##	15.0	3.3	14.7	<2.0	97.4	<3.0	<5.0	7.2	NA	122.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
305.10.##	15.2	3.4	14.8	<2.0	100.0	<3.0	<5.0	7.3	NA	125.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
306.00.05	45.9	11.8	27.1	2.9	123.0	4.1	17.9	4.1	NA	190.9	NA	<20.0	5.8	<10.0	18.7	24.5	5.3	<6.0
307.00.01	2.0	<2.0	<2.0	<2.0	37.4	<3.0	<5.0	<3.0	NA	37.4	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	4.1	0.9	<5.0	73.4	<2.0	<4.0	<25.0	80.0	41.0	121.0	34.5	239.0
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	4.1	0.8	<5.0	92.3	<2.0	<4.0	<25.0	81.0	29.0	110.0	40.4	251.0
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	4.4	1.1	<5.0	69.0	<2.0	<4.0	<25.0	158.0	40.0	198.0	61.1	330.6
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	2.2	0.5	<5.0	42.5	<2.0	<4.0	<25.0	28.0	15.0	43.0	<20.0	96.9
3##.##.#D	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	15.3	<10.0	15.3	74.8	91.7
304.10.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
305.10.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	<3.0	3.0	<4.0	25.0	<10.0	<10.0	25.0	61.2	79.8
305.10.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	4.9	4.7	<4.0	<25.0	<10.0	<10.0	ND	61.2	80.1
306.00.05	<1.0	<2.0	<2.0	<1.0	ND	<2.0	6.5	0.4	<5.0	27.1	<2.0	<4.0	<25.0	32.9	<10.0	32.9	204.0	305.6
307.00.01	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	48.0	<10.0	48.0	<20.0	11.9

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

TABLE 2

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Organic Chemicals in Fish and Clams (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
111.63.##	Lk Pillsbury/Horsepasture Gulch	LMB	F	06/15/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
111.63.13	Lake Pillsbury/Eel River Arm	LMB	F	06/15/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
111.63.14	Lake Pillsbury	LMB	F	06/15/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	<1.0	<1.0	ND	<2.0	<2.0
114.21.10	Laguna de Santa Rosa/Stony Pt	GSF	F	11/05/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.1	<1.0	1.1	<2.0	<2.0
114.23.00	Mark West Creek	SPM	W	11/05/99	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	3.0	<1.0	3.0	<2.0	<2.0
206.60.##	San Pablo Reservoir	CP	F	04/17/00	<1.0	1.6	32.8	2.3	15.1	14.8	34.0	4.3	105.0	<2.0	3.0
206.60.##	San Pablo Reservoir	BCR	F	04/17/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.7	<1.0	1.7	<2.0	<2.0
206.60.##	San Pablo Reservoir	BCR	F	04/17/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.8	<1.0	1.8	<2.0	<2.0
206.60.##	San Pablo Reservoir	BCR	F	04/17/00	<1.0	<1.0	<2.0	<1.0	<2.0	<2.0	1.6	<1.0	1.6	<2.0	<2.0
206.60.##	San Pablo Reservoir	CP	F	04/17/00	1.1	1.4	27.5	2.0	13.0	12.1	27.5	3.9	87.4	<2.0	<2.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin	Ethion
111.63.##	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
111.63.13	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
111.63.14	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.21.10	<2.0	<2.0	<2.0	<2.0	<2.0	<3.0	<5.0	<3.0	NA	ND	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
114.23.00	<2.0	<2.0	2.2	<2.0	18.1	<3.0	<5.0	<3.0	NA	20.3	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	111.0	<2.0	15.4	<2.0	70.8	<3.0	<5.0	3.3	NA	89.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	5.2	<2.0	<2.0	<2.0	3.5	<3.0	<5.0	<3.0	NA	3.5	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	5.3	<2.0	<2.0	<2.0	3.6	<3.0	<5.0	<3.0	NA	3.6	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	5.3	<2.0	<2.0	<2.0	3.0	<3.0	<5.0	<3.0	NA	3.0	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0
206.60.##	62.7	2.1	14.8	<2.0	58.9	<3.0	<5.0	3.0	NA	78.8	NA	<20.0	<2.0	NA	NA	ND	<2.0	<6.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
111.63.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
111.63.13	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
111.63.14	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	ND
114.21.10	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	1.1
114.23.00	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	0.4	<5.0	4.0	<2.0	<4.0	<25.0	22.0	<10.0	22.0	<20.0	3.0
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	4.1	1.1	<5.0	87.4	<2.0	<4.0	<25.0	90.0	37.0	127.0	33.5	253.6
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	6.9
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	7.1
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	<1.0	<0.3	<5.0	<3.0	<2.0	<4.0	<25.0	<10.0	<10.0	ND	<20.0	6.9
206.60.##	<1.0	<2.0	<2.0	<1.0	ND	<2.0	2.7	0.8	<5.0	50.3	<2.0	<4.0	<25.0	67.0	38.0	105.0	21.0	174.9

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Table 3.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Trace Elements in Fish and Clams (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
630.10.07	East Walker R/Bridgeport	BN	F	10/20/99	0.065	<0.0020	NA	NA	NA	0.060	0.0150	0.225	NA	NA
630.10.07	East Walker R/Bridgeport	BN	L	10/20/99	NA	NA	0.099	116.0000	0.0290	NA	NA	NA	0.7870	21.30
630.30.##	East Walker R/u/s Bridgeport Res	BN	F	10/18/99	0.036	<0.0020	NA	NA	NA	0.039	0.0090	0.336	NA	NA
630.30.##	East Walker R/u/s Bridgeport Res	BN	L	10/18/99	NA	NA	0.094	67.3000	<0.0020	NA	NA	NA	0.4860	23.40
630.30.#A	Buckeye Cr/u/s/Bridgeport Res	RBT	F	10/18/99	0.093	<0.0020	NA	NA	NA	0.031	0.0120	0.469	NA	NA
630.30.#A	Buckeye Cr/u/s/Bridgeport Res	RBT	L	10/18/99	NA	NA	0.128	25.2000	<0.0020	NA	NA	NA	0.0980	18.20
630.30.#B	Robinson Cr/u/s Bridgeport Res	BN	F	10/18/99	0.150	<0.0020	NA	NA	NA	0.038	0.0100	0.683	NA	NA
630.30.#B	Robinson Cr/u/s Bridgeport Res	BN	L	10/18/99	NA	NA	0.154	58.4000	0.0050	NA	NA	NA	0.4900	23.30
634.10.00	Upper Truckee R/d/s HWY 50	RBT	F	09/16/99	<0.020	<0.0020	NA	NA	NA	0.053	0.0120	0.104	NA	NA
634.10.00	Upper Truckee R/d/s HWY 50	RBT	L	09/16/99	NA	NA	0.175	14.5000	0.0040	NA	NA	NA	0.1770	23.30
637.20.##	Gold Run Creek	RBT	F	10/21/99	0.039	<0.0020	NA	NA	NA	0.146	0.0180	0.112	NA	NA
637.20.##	Gold Run Creek	RBT	L	10/21/99	NA	NA	0.114	13.3000	<0.0020	NA	NA	NA	0.1200	27.40
637.20.25	Susan R/d/s Piute Creek	BK	F	10/22/99	<0.023	<0.0020	NA	NA	NA	1.540	0.0340	0.116	NA	NA
637.20.25	Susan R/d/s Piute Creek	BK	L	10/22/99	NA	NA	0.159	36.5000	<0.0020	NA	NA	NA	0.1510	28.30
637.20.31	Susan R/u/s Susanville	RBT	F	10/22/99	<0.023	<0.0020	NA	NA	NA	2.090	0.0170	0.103	NA	NA
637.20.31	Susan R/u/s Susanville	RBT	L	10/22/99	NA	NA	0.156	61.4000	<0.0020	NA	NA	NA	0.3690	22.30
715.40.08	Palo Verde Outfall Drain	LMB	F	12/07/99	0.049	NA	NA	NA	NA	NA	NA	0.500	NA	NA
715.50.90	Colorado R/u/s Imperial Dam	LMB	F	12/07/99	0.130	NA	NA	NA	NA	0.058	NA	2.450	NA	NA
719.47.00	Coachella Valley Stormwater Ch	TL	W	12/08/99	0.251	NA	NA	NA	NA	NA	NA	0.915	NA	NA
723.10.02	New R/Westmorland	CP	F	12/09/99	0.118	NA	NA	NA	NA	NA	NA	1.460	NA	NA
723.10.12	Wiest Lake	LMB	F	12/06/99	0.081	NA	NA	NA	NA	<0.015	NA	1.350	NA	NA
723.10.21	Holtville Main Drain	CCF	F	12/05/99	<0.020	NA	NA	NA	NA	NA	NA	0.529	NA	NA
723.10.30	Central Drain	CP	F	12/05/99	0.114	NA	NA	NA	NA	NA	NA	2.110	NA	NA
723.10.31	South Central Drain	CCF	F	12/05/99	0.050	NA	NA	NA	NA	NA	NA	1.020	NA	NA
728.00.90	Salton Sea/South	ORC	F	12/06/99	0.642	NA	NA	NA	NA	NA	NA	1.820	NA	NA
801.11.05	Delhi Channel	GAM	W	08/05/99	0.395	0.0060	0.068	3.0900	0.0350	<0.015	0.1360	1.540	0.0070	19.10
801.11.07	San Diego Cr/Michelson Dr	PRS	W	08/05/99	0.159	0.0250	0.056	1.1900	0.0420	0.047	0.1250	2.400	<0.0020	35.60
801.11.07	San Diego Cr/Michelson Dr	PRS	W	08/05/99	0.136	0.0330	0.093	1.2100	0.0810	0.052	0.1300	2.420	0.0030	38.30
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	08/05/99	0.157	0.0940	0.052	1.1900	0.0270	0.066	0.1460	1.630	0.0040	43.50
801.11.89	Lower Newport Bay/Rhine Ch	YFC	F	08/10/99	0.731	<0.0020	NA	NA	NA	0.105	0.0130	0.400	NA	NA

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 3.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Trace Elements in Fish and Clams (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
801.11.89	Lower Newport Bay/Rhine Ch	YFC	L	08/10/99	NA	NA	0.089	5.3300	0.1290	NA	NA	NA	0.0060	23.90
801.11.96	Peters Canyon Channel	PRS	W	08/05/99	0.179	0.0350	0.121	1.2300	0.0300	0.048	0.1370	4.110	<0.0020	45.80
801.11.96	Peters Canyon Channel	PRS	W	08/05/99	0.190	0.0360	0.171	1.2900	0.0380	0.040	0.1390	4.240	0.0030	44.70
801.11.99	Upper Newport Bay/Newport Dunes	ORC	F	08/04/99	1.300	<0.0020	NA	NA	NA	0.050	0.0170	0.760	NA	NA
801.11.99	Upper Newport Bay/Newport Dunes	ORC	L	08/04/99	NA	NA	0.088	6.2600	0.0080	NA	NA	NA	<0.0020	18.40
901.12.##	Aliso Cr/Pacific Park Dr	PRS	W	08/27/99	0.245	0.2240	0.110	1.3000	0.0710	<0.015	0.1950	1.610	<0.0020	32.50
902.11.01	Santa Margarita R/Stuart Mesa Rd	CKF	W	08/25/99	0.221	0.0050	0.050	1.1200	0.0320	<0.015	0.1900	0.248	0.0270	28.30
902.22.03	Rainbow Creek	GSF	F	08/26/99	0.031	<0.0020	NA	NA	NA	0.051	0.0080	0.388	NA	NA
902.22.03	Rainbow Creek	GSF	L	08/26/99	NA	NA	0.067	2.4500	0.0100	NA	NA	NA	<0.0020	16.70
902.32.##	Murrietta Cr/u/s Temecula Cr	BLB	F	08/26/99	0.036	<0.0020	NA	NA	NA	0.059	0.0370	0.287	NA	NA
902.32.##	Murrietta Cr/u/s Temecula Cr	BLB	L	08/26/99	NA	NA	0.100	9.2500	0.0070	NA	NA	NA	0.0290	19.20
904.10.##	Loma Alta Cr/College Blvd	GAM	W	08/26/99	0.217	0.0220	0.236	3.6900	0.0770	0.061	0.1990	0.371	0.0340	37.70
904.21.02	Buena Vista Lagoon	LMB	F	08/25/99	0.072	<0.0020	NA	NA	NA	0.054	0.0100	0.392	NA	NA
904.21.02	Buena Vista Lagoon	LMB	L	08/25/99	NA	NA	0.122	3.8300	0.0210	NA	NA	NA	0.0060	21.90
904.31.##	Agua Hedionda Cr/El Camino Real	GAM	W	08/24/99	0.386	0.0250	0.220	1.3400	0.0380	<0.015	0.1520	0.461	0.0050	25.90
904.51.03	San Marcos Cr	LMB	F	08/24/99	0.045	<0.0020	NA	NA	NA	0.046	0.0230	0.335	NA	NA
904.51.03	San Marcos Cr	LMB	L	08/24/99	NA	NA	0.193	3.0800	<0.0020	NA	NA	NA	<0.0020	16.00
904.61.07	Escondido Cr/Elfin Forest Park	GSF	F	08/24/99	0.064	0.0010	NA	NA	NA	0.050	0.3410	0.496	NA	NA
904.61.07	Escondido Cr/Elfin Forest Park	GSF	L	08/24/99	NA	NA	0.070	2.4400	0.0100	NA	NA	NA	0.0050	17.30
907.11.03	San Diego R/u/s Taylor St	LMB	F	08/23/99	0.096	<0.0020	NA	NA	NA	0.035	0.0150	0.854	NA	NA
907.11.03	San Diego R/u/s Taylor St	LMB	L	08/23/99	NA	NA	0.112	5.9400	0.0130	NA	NA	NA	0.0130	23.10

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 3.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Trace Elements in Fish and Clams (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
304.10.00	Waddell Creek Lagoon	STB	W	10/05/99	0.346	0.0220	0.200	2.7200	0.0120	0.053	0.3220	0.851	0.0340	34.90
305.10.##	Pajaro R/Pajaro	RCH	W	10/07/99	0.143	0.0220	0.071	1.3800	0.0030	<0.015	0.1320	0.844	0.0050	37.10
305.10.##	Pajaro R/Pajaro	RCH	W	10/07/99	0.132	0.0250	0.143	1.3700	0.0170	0.060	0.1720	0.828	0.0040	35.30
306.00.05	Elkhorn Sl/u/s Elkhorn Rd Brg	TFC	W	04/29/99	1.970	0.6060	7.120	25.5000	0.0620	0.028	0.8240	0.683	0.0360	15.60
307.00.01	Carmel Lagoon	STB	W	10/06/99	0.515	0.1780	0.150	6.5200	0.0570	0.093	0.4320	1.110	0.0560	72.20
308.00.0#	Big Sur River Lagoon	STB	W	10/06/99	0.154	0.0480	0.205	1.6500	0.0320	<0.015	0.2300	1.090	0.0040	30.40
309.10.##	Salinas Rec Canal 5	TFC	W	04/29/99	1.160	0.3290	2.430	7.9300	0.0170	<0.015	0.2420	0.331	0.0130	8.27
309.10.00	Salinas R Lagoon	STB	W	10/07/99	0.378	0.1010	0.383	2.4100	0.0450	0.058	0.4630	0.588	<0.0020	33.20
309.10.10	Alisal Sl/West Salinas	TFC	W	04/29/99	1.310	0.3230	2.550	8.7000	0.0200	<0.015	0.3760	0.461	0.0160	11.30
309.10.17	Salinas Rec Canal/Airport Rd	TFC	W	04/29/99	2.840	1.3800	9.770	29.5000	0.3370	<0.015	1.2600	0.943	0.0430	24.50
310.12.00	Arroyo de la Cruz	STB	W	10/06/99	0.094	0.0250	0.251	1.7400	0.0100	<0.015	0.2490	0.408	<0.0020	19.30
310.13.#A	Pico Creek Lagoon	PCP	W	09/22/99	0.282	0.0380	0.166	1.3700	0.0110	0.180	0.2720	0.313	0.0050	12.80
310.13.00	San Simeon Creek Lagoon	STB	W	09/22/99	0.314	0.0380	0.291	3.7600	0.0130	0.177	0.4710	0.354	0.0070	24.60
310.14.00	Santa Rosa Cr Lagoon	STB	W	09/22/99	0.188	0.0370	0.284	3.6300	0.0270	0.318	0.5140	1.860	0.0080	36.00
310.24.00	San Luis Obispo Cr Lagoon	SSP	W	09/22/99	0.351	0.0190	0.167	0.9110	0.0070	<0.015	0.2610	0.429	0.0030	19.50
310.31.00	Arroyo Grande Creek Lagoon	STB	W	09/22/99	0.249	0.0830	0.405	2.1700	0.0410	<0.015	0.2870	3.180	0.0080	33.20
312.10.00	Santa Maria R/Mouth	STB	W	09/21/99	0.196	0.0620	0.246	2.1900	0.0730	0.043	0.2420	0.770	0.0090	37.90
314.10.00	Santa Ynez River Lagoon	STF	F	09/21/99	0.097	<0.0020	NA	NA	NA	0.059	0.0110	0.474	NA	NA
314.10.00	Santa Ynez River Lagoon	STF	L	09/21/99	NA	NA	0.164	8.3500	<0.0020	NA	NA	NA	0.0110	26.30
315.34.00	Carpinteria Marsh	CKF	W	09/21/99	0.525	0.0070	0.389	1.4300	0.1240	<0.015	0.3960	0.457	0.0270	24.90
402.10.05	Ventura R/d/s OVSD Discharge	AC	F	08/13/99	0.129	0.0210	0.190	2.4000	0.0150	0.077	0.1180	3.110	0.0180	42.90
402.10.06	Ventura R/u/s OVSD Discharge	AC	W	08/13/99	0.124	0.0740	0.111	1.8900	0.0120	0.094	0.1360	2.680	0.0050	40.90
403.11.00	Santa Clara River Estuary	AC	W	08/13/99	0.126	0.0310	0.185	1.2200	0.0110	0.041	0.1500	1.510	0.0140	36.60
403.12.06	Calleguas Creek	BB	F	08/11/99	<0.020	<0.0020	NA	NA	NA	0.059	0.0120	0.258	NA	NA
403.12.06	Calleguas Creek	BB	L	08/11/99	NA	NA	0.161	14.1000	0.0340	NA	NA	NA	0.1390	22.70
403.64.03	Arroyo Conejo/d/s Forks	BB	F	08/11/99	0.033	<0.0020	NA	NA	NA	0.061	0.0110	0.311	NA	NA
403.64.03	Arroyo Conejo/d/s Forks	BB	L	08/11/99	NA	NA	0.179	18.3000	0.0040	NA	NA	NA	0.4040	21.50
403.67.08	Arroyo Simi/Madera Rd	AC	W	08/12/99	0.226	0.0410	0.070	1.4100	0.0320	0.045	0.1300	3.420	<0.0020	35.90
404.21.04	Malibu Cr/Tapia Park	AC	W	09/10/99	0.260	0.1200	0.356	1.6400	0.0190	0.031	0.1750	1.320	0.0190	33.50
404.21.05	Malibu Cr/u/s Tapia Discharge	LMB	W	09/10/99	0.089	0.0520	0.293	0.4650	<0.0020	0.035	0.1760	1.100	<0.0020	19.40

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Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 1999 Data: Trace Elements in Fish and Clams (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
404.21.07	Malibou Lake	LMB	F	08/12/99	0.103	<0.0020	NA	NA	NA	0.246	0.0090	1.280	NA	NA
404.21.07	Malibou Lake	LMB	L	08/12/99	NA	NA	0.065	9.1100	0.0090	NA	NA	NA	0.0070	19.30
404.25.01	Westlake Lake	LMB	F	08/12/99	0.084	0.0010	NA	NA	NA	0.177	0.0090	2.020	NA	NA
404.25.01	Westlake Lake	LMB	L	08/12/99	NA	NA	0.104	149.0000	0.0130	NA	NA	NA	0.0290	45.00
405.12.03	Los Angeles River	TL	W	09/09/99	0.493	0.0080	0.302	1.2100	0.1340	<0.015	0.4720	0.365	0.0160	25.50
405.15.04	San Gabriel River	TL	F	09/09/99	0.290	<0.0020	NA	NA	NA	<0.015	0.0230	0.397	NA	NA
405.15.04	San Gabriel River	TL	L	09/09/99	NA	NA	0.086	30.3000	0.0770	NA	NA	NA	1.6600	21.40
405.21.06	Los Angeles R/Los Feliz Rd	GAM	W	09/09/99	0.054	0.0070	0.126	1.2700	0.0120	<0.015	0.1110	0.721	0.0420	33.10
405.52.01	Puddingstone Res	LMB	F	08/10/99	0.211	<0.0020	NA	NA	NA	0.371	0.0220	0.301	NA	NA
405.52.01	Puddingstone Res	LMB	L	08/10/99	NA	NA	0.068	20.2000	<0.0020	NA	NA	NA	0.0200	28.30
508.10.42	Sacramento R/Keswick	RBT	F	12/22/99	0.060	<0.0020	NA	NA	NA	0.045	0.0230	0.306	NA	NA
508.10.42	Sacramento R/Keswick	RBT	L	12/22/99	NA	NA	0.222	176.0000	0.0180	NA	NA	NA	0.2170	21.80
511.10.08	Putah Creek/South Fork	LMB	F	09/30/99	NA	NA	NA	NA	NA	0.478	NA	NA	NA	NA
511.10.08	Putah Creek/South Fork	SKR	F	09/30/99	NA	NA	NA	NA	NA	0.185	NA	NA	NA	NA
531.11.03	Cosumnes R/Cosumnes R Preserve	LMB	F	10/20/99	NA	NA	NA	NA	NA	1.260	NA	NA	NA	NA
531.30.02	Smith Canal/Yosemite Park	LMB	F	09/22/99	NA	NA	NA	NA	NA	0.334	NA	0.430	NA	NA
531.30.91	Stockton Deep Water Ch	LMB	F	09/22/99	NA	NA	NA	NA	NA	0.493	NA	0.440	NA	NA
541.10.90	San Joaquin R/Vernalis	LMB	F	11/01/99	NA	NA	NA	NA	NA	0.763	NA	0.610	NA	NA
541.10.94	San Joaquin R/Pear Slough	LMB	F	10/25/99	NA	NA	NA	NA	NA	0.784	NA	0.660	NA	NA
541.20.94	San Joaquin R/Landers Avenue	LMB	F	10/18/99	NA	NA	NA	NA	NA	0.671	NA	0.830	NA	NA
544.00.01	San Joaquin R/Potato Slough	LMB	F	09/21/99	NA	NA	NA	NA	NA	0.323	NA	0.380	NA	NA
544.00.02	Mokelumne R/d/s Cosumnes River	LMB	F	09/20/99	NA	NA	NA	NA	NA	0.948	NA	NA	NA	NA
544.00.06	Mokelumne R/d/s Beaver Slough	LMB	F	11/03/99	NA	NA	NA	NA	NA	0.532	NA	NA	NA	NA
544.00.09	White Slough/Lodi	LMB	F	09/21/99	NA	NA	NA	NA	NA	0.335	NA	0.210	NA	NA
544.00.10	San Joaquin R/Turner Cut	LMB	F	09/23/99	NA	NA	NA	NA	NA	0.373	NA	0.360	NA	NA
544.00.12	Middle River/Bullfrog	LMB	F	10/13/99	NA	NA	NA	NA	NA	0.227	NA	0.490	NA	NA
544.00.18	San Joaquin R/HWY 4	LMB	F	09/23/99	NA	NA	NA	NA	NA	0.772	NA	0.460	NA	NA
544.00.32	Paradise Cut/Tracy	LMB	F	10/17/99	NA	NA	NA	NA	NA	0.680	NA	0.530	NA	NA
544.00.93	San Joaquin R/d/s Bowman Rd	LMB	F	09/22/99	NA	NA	NA	NA	NA	0.960	NA	0.430	NA	NA
551.20.00	Mendota Pool	LMB	F	05/27/00	NA	NA	NA	NA	NA	0.206	NA	0.761	NA	NA

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Preliminary Summary of 1999 Data: Trace Elements in Fish and Clams (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
111.63.##	Lk Pillsbury/Horsepasture Gulch	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.370	NA	NA	NA	NA
111.63.##	Lk Pillsbury/Horsepasture Gulch	LMB	F	06/15/99	0.063	<0.0020	NA	NA	NA	1.160	0.0150	0.359	NA	NA
111.63.##	Lk Pillsbury/Horsepasture Gulch	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.180	NA	NA	NA	NA
111.63.##	Lk Pillsbury/Horsepasture Gulch	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.460	NA	NA	NA	NA
111.63.##	Lk Pillsbury/Horsepasture Gulch	LMB	L	06/15/99	NA	NA	0.090	21.6000	0.0170	NA	NA	NA	0.0450	29.70
111.63.#A	Lake Pillsbury/Dam	RBT	F	05/16/00	0.217	<0.0020	NA	NA	NA	0.048	0.0130	0.273	NA	NA
111.63.#A	Lake Pillsbury/Dam	RBT	L	05/16/00	NA	NA	0.215	43.5000	0.0030	NA	NA	NA	0.0310	18.30
111.63.13	Lake Pillsbury/Eel River Arm	LMB	F	05/15/99	NA	NA	NA	NA	NA	1.360	NA	NA	NA	NA
111.63.13	Lake Pillsbury/Eel River Arm	BG	F	06/15/99	NA	NA	NA	NA	NA	0.847	NA	NA	NA	NA
111.63.13	Lake Pillsbury/Eel River Arm	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.600	NA	NA	NA	NA
111.63.13	Lake Pillsbury/Eel River Arm	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.530	NA	NA	NA	NA
111.63.13	Lake Pillsbury/Eel River Arm	LMB	F	06/15/99	0.041	<0.0020	NA	NA	NA	1.550	0.0150	0.339	NA	NA
111.63.13	Lake Pillsbury/Eel River Arm	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.370	NA	NA	NA	NA
111.63.13	Lake Pillsbury/Eel River Arm	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.480	NA	NA	NA	NA
111.63.13	Lake Pillsbury/Eel River Arm	LMB	L	06/15/99	NA	NA	0.063	5.2900	0.0290	NA	NA	NA	0.0280	18.80
111.63.14	Lake Pillsbury	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.480	NA	NA	NA	NA
111.63.14	Lake Pillsbury	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.650	NA	NA	NA	NA
111.63.14	Lake Pillsbury	LMB	F	06/15/99	0.065	<0.0020	NA	NA	NA	1.830	0.0370	0.369	NA	NA
111.63.14	Lake Pillsbury	LMB	F	06/15/99	NA	NA	NA	NA	NA	1.430	NA	NA	NA	NA
111.63.14	Lake Pillsbury	LMB	F	06/15/99	NA	NA	NA	NA	NA	2.730	NA	NA	NA	NA
111.63.14	Lake Pillsbury	LMB	L	06/15/99	NA	NA	0.102	29.9000	0.0070	NA	NA	NA	0.0500	31.30
111.63.14	Lake Pillsbury	SPM	F	06/15/99	NA	NA	NA	NA	NA	2.370	NA	NA	NA	NA
111.63.14	Lake Pillsbury	RBT	F	06/15/00	0.138	<0.0020	NA	NA	NA	0.207	0.0160	0.345	NA	NA
111.63.14	Lake Pillsbury	RBT	F	06/15/00	0.043	<0.0020	NA	NA	NA	0.327	0.0190	0.301	NA	NA
111.63.14	Lake Pillsbury	RBT	L	06/15/00	NA	NA	0.189	68.2000	0.0060	NA	NA	NA	0.2690	25.10
111.63.14	Lake Pillsbury	RBT	L	06/15/00	NA	NA	0.112	24.5000	<0.0020	NA	NA	NA	0.0960	8.40
114.21.10	Laguna de Santa Rosa/Stony Pt	GSF	F	11/05/99	0.041	<0.0020	NA	NA	NA	0.357	0.0190	0.234	NA	NA
114.21.10	Laguna de Santa Rosa/Stony Pt	GSF	L	11/05/99	NA	NA	0.122	1.6200	<0.0020	NA	NA	NA	<0.0020	15.40
114.23.00	Mark West Creek	SPM	W	11/05/99	0.047	0.0070	0.126	1.3900	0.0090	0.218	0.2150	0.282	0.0040	30.10
114.24.##	Lake Sonoma/Dry Creek Arm	LMB	F	05/17/00	0.136	<0.0020	NA	NA	NA	0.595	0.0100	0.346	NA	NA

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Preliminary Summary of 1999 Data: Trace Elements in Fish and Clams (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
114.24.##	Lake Sonoma/Dry Creek Arm	LMB	F	05/17/00	0.099	<0.0020	NA	NA	NA	0.501	0.0120	0.322	NA	NA
114.24.##	Lake Sonoma/Dry Creek Arm	LMB	F	05/17/00	0.150	<0.0020	NA	NA	NA	0.513	0.3140	0.364	NA	NA
114.24.##	Lake Sonoma/Dry Creek Arm	LMB	L	05/17/00	NA	NA	0.188	23.5000	<0.0020	NA	NA	NA	0.1580	24.20
114.24.##	Lake Sonoma/Dry Creek Arm	LMB	L	05/17/00	NA	NA	0.199	10.5000	<0.0020	NA	NA	NA	0.0240	22.30
114.24.##	Lake Sonoma/Dry Creek Arm	LMB	L	05/17/00	NA	NA	0.228	10.2000	<0.0020	NA	NA	NA	0.0480	21.10
114.24.12	Lake Sonoma	LMB	F	05/18/00	0.125	<0.0020	NA	NA	NA	0.461	0.0140	0.304	NA	NA
114.24.12	Lake Sonoma	LMB	F	05/18/00	0.171	<0.0020	NA	NA	NA	0.559	0.0070	0.389	NA	NA
114.24.12	Lake Sonoma	LMB	F	05/18/00	0.185	<0.0020	NA	NA	NA	0.840	0.0100	0.359	NA	NA
114.24.12	Lake Sonoma	LMB	L	05/18/00	NA	NA	0.161	8.6500	<0.0020	NA	NA	NA	0.0430	18.80
114.24.12	Lake Sonoma	LMB	L	05/18/00	NA	NA	0.132	30.6000	0.0140	NA	NA	NA	0.2100	30.40
114.24.12	Lake Sonoma	LMB	L	05/18/00	NA	NA	0.138	7.4500	<0.0020	NA	NA	NA	0.0230	20.80
114.32.##	Lake Mendocino/across	LMB	F	05/17/00	0.036	<0.0020	NA	NA	NA	0.651	0.0110	0.199	NA	NA
114.32.##	Lake Mendocino/across	LMB	F	05/17/00	0.068	<0.0020	NA	NA	NA	0.346	0.0120	0.250	NA	NA
114.32.##	Lake Mendocino/across	LMB	F	05/17/00	0.095	<0.0020	NA	NA	NA	0.517	0.0190	0.277	NA	NA
114.32.##	Lake Mendocino/across	LMB	L	05/17/00	NA	NA	0.097	11.4000	<0.0020	NA	NA	NA	0.0520	19.50
114.32.##	Lake Mendocino/across	LMB	L	05/17/00	NA	NA	0.120	19.7000	<0.0020	NA	NA	NA	0.0830	23.60
114.32.##	Lake Mendocino/across	LMB	L	05/17/00	NA	NA	0.085	13.5000	0.0100	NA	NA	NA	0.0450	24.20
201.12.##	Soulajule	LMB	F	05/02/00	NA	NA	NA	NA	NA	1.030	NA	NA	NA	NA
201.12.##	Soulajule	LMB	F	05/02/00	NA	NA	NA	NA	NA	0.812	NA	NA	NA	NA
201.12.##	Soulajule	LMB	F	05/02/00	NA	NA	NA	NA	NA	0.405	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	BCR	F	04/17/00	NA	NA	NA	NA	NA	0.146	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	BCR	F	04/17/00	NA	NA	NA	NA	NA	0.129	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	BCR	F	04/17/00	NA	NA	NA	NA	NA	0.152	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	CP	F	04/17/00	NA	NA	NA	NA	NA	0.197	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	CP	F	04/17/00	NA	NA	NA	NA	NA	0.185	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	CP	F	04/17/00	NA	NA	NA	NA	NA	0.182	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	CCF	F	04/17/00	NA	NA	NA	NA	NA	0.131	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	CCF	F	04/17/00	NA	NA	NA	NA	NA	0.114	NA	NA	NA	NA
206.60.##	San Pablo Reservoir	CCF	F	04/17/00	NA	NA	NA	NA	NA	0.062	NA	NA	NA	NA
3##.##.#D	Gabilan Creek	TFC	W	04/29/99	1.670	0.5600	4.330	13.3000	0.0650	<0.015	0.5160	0.592	0.0190	13.00

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Species codes are listed in Table 3.

October 19, 2001

To: Timothy Stevens
Environmental Specialist
Division of Water Quality
1001 I Street
Sacramento, CA 95814

From: Nadim Zeywar
R7

Ref. R7 303(d) List Board Meeting Transcripts

Tim:

Please see the attachments that contain copies of all transcripts from our Board Meeting on October 10, 2001 on the 303(d) List. Those documents became available to me just yesterday October 18, 2001.

Thanks

Nadim Zeywar
ES III
CRBRWQCB
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

COLORADO RIVER BASIN REGION

AGENDA ITEM 4

PUBLIC HEARING ON UPDATING THE 303(d) LIST FOR IMPAIRED WATERBODIES

City Council Chambers
City of La Quinta
78-945 Calle Tampico
La Quinta, California
Wednesday, October 10, 2001

(Reporter's Transcript of Proceedings)

ITEM 4: PUBLIC HEARING ON UPDATING THE 303(d) LIST FOR IMPAIRED WATERBODIES: The Regional Board will consider adopting Resolution No. 01-205, which updates the 303(d) list of impaired water bodies for the Colorado River Basin Region, pursuant to the Federal Clean Water Act.

REPORTED BY:
WANDA J. HARRISON, RPR
CSR NO. 10489

PARK AVENUE
DEPOSITION SERVICE
(800) 447-3376

REGIONAL WATER QUALITY CONTROL BOARD

COLORADO RIVER BASIN REGION

73-320 Fred Waring Drive, Suite 100

Palm Desert, California 92260

(760) 346-7491

APPEARANCES

BOARD MEMBERS:
MICHAEL SMITH, Chairman
GARY JOHNSON, Vice Chairman
DR. DAN BAXLEY
LEON LESICKA
BRENDA SOULLIERE
NANCY S. WRIGHT

EXECUTIVE STAFF:

PHIL GRUENBERG, Executive Officer
ROBERT PERDUE, Assistant Executive Officer/Ombudsman
JOSE ANGEL, Supervising Water Resources Control Engineer
CHRIS IGBINEDION, Section Chief
DOUG WYLIE, Section Chief

STATE BOARD STAFF COUNSEL:
LORI OKUN

I N D E X

LA QUINTA, CALIFORNIA; WEDNESDAY, OCTOBER 10, 2001

ITEM 4

CHAIRMAN SMITH: Move on to Item 4. Public hearing on updating 303(d) list for impaired water bodies. And I have another big statement to read.

This is the time and place for a public hearing by the California Regional Water Quality Board Colorado River Basin Region, pursuant to Section 303(d) of the Federal Clean Water Act regarding updating the Region's 303(d) list.

The purpose of this hearing is to take evidence and testimony concerning a proposed updated 303(d) list for the Region, and consider adopting Resolution No. 01-205, which adopts the updated 2001 303(d) list for the Colorado River Basin Region and directs the executive officer to forward copies of the approved 2001 303(d) list for the Colorado River Basin Region, its supporting documentation, and this resolution to the State Board.

The order of presentation will be as follows: The regional board staff testimony, testimony by other parties, executive officer recommendation. The Board, its executive officer and staff and counsel may ask questions to clarify the testimony of any witness at any time. The hearing on the matter will not be conducted according to the rules of evidence. The Board will accept any evidence or testimony

which is reasonably relevant to updating the 303(d) list and the proposed resolution.

People who have similar comments or viewpoints on the matter should select or appoint a spokesperson to express them. Persons wishing to be recognized by the chair must fill out a card indicating so. At his discretion the Board chair will curtail evidence that is repetitive or irrelevant to the matter at hand.

Okay. All persons testifying or expecting to testify at the hearing, please stand, raise your right hand, take the following oath.

Do you solemnly swear or affirm that the testimony which you will give in this matter is the truth? If so, answer, "I do."

PHIL GRUENBERG: I do.

DOUG WYLIE: I do.

CHAIRMAN SMITH: Okay. When called upon to testify, identify yourself, who you represent and your address and state whether you have taken the oath.

I'll open this. Regional Board staff testimony, please.

DOUG WYLIE: Good morning. I am Doug Wylie. I'm a senior water resources control engineer with the Regional Board here in Palm Desert. I'm in charge of the non-point source and TMDL implementation unit. I'm here today to

present the staff report on the 303(d) list, which we have updated.

The Regional Board is responsible for implementing provisions and pollution control requirements that the Federal Clean Water Act specifies for surface waters of the nation. Section 303(d) of the Clean Water Act requires the state, each state in the nation, to identify those surface water bodies that do not meet water quality standards after implementation of two things. The first one is best available technology for control of point sources of pollution. And the second one is for -- after Best Management Practices or BMPs for control of non-point sources of pollution.

The Basin Plan, which we have here for the Colorado River Basin Region identifies all the waters in the region and establishes water quality standards for those waters. Following the -- well, excuse me, following the identification of impaired water bodies, the State is also required to establish a priority list of these water bodies, identify the pollutants that cause the impairments and in partnership with the USEPA, we are supposed to develop pertinent TMDLs, like the one we just -- that you just adopted.

So surface water bodies within the Colorado River Basin that are impaired have been placed on our 303(d) list.

The proposed list that we are going to be discussing today is updated typically every three years and it is subject to approval of the State Board and then to be followed by the USEPA's approval. Our list was last updated in 1998. So now we are three years later and all the regions are now working on their updated 303(d) list.

The currently impaired waters in this region -- there are six of them -- are the New River and the Alamo River and the Imperial Valley Drains. Those are the top three. Those all flow into the Salton Sea, which is our fourth water body that's impaired. The fifth one is the Palo Verde Outfall Drains, which are over on -- off the Colorado River on the eastern boundary of this region. And our last impaired water body is the Coachella Valley Storm Water Channel which flows southward into the Salton Sea. So those are the six bodies that we have previously identified on our 303(d) list.

Today we are proposing that the Regional Board update the 1998 303(d) list based on data and comments received from stakeholders and based on data that we have collected ourselves. Staff is also recommending that the Regional Board submit the updated 303(d) list to the State Board for its approval. The State Board will then review the updated 303(d) list from each of the regions, from all the Regional Boards. They'll hold a public hearing and

consider public comments and then they'll finalize the 303(d) list and then transmit it to the USEPA for its final approval, which probably will take place next year in 2002.

Last February we solicited information from the public through newspaper notices and other -- a mass mailing for information requiring -- for information pertinent to our current 303(d) list. Attachment 3 in the staff report that you have shows the proposed updated 303(d) list for the region.

The proposed 2001 303(d) list contains the six same water bodies that I mentioned just a minute ago and we have some updates to this list which I consider relatively minor. We reviewed the data and comments submitted by our stakeholders. We also reviewed existing and readily available water quality related data previously submitted to this Regional Board from the State Board, from the IID, and from the Salton Sea Authority.

Based on that data, the staff is recommending that the Regional Board update its 303(d) list. Let me just show you this up here. This was our 1998 list and it's in your staff report. That's Attachment 1, the 1998 one. It has the six water bodies there.

And this is the Attachment 3, which shows our updated list and I will now explain the changes we have made. Basically there's six categories of changes.

The updated list identifies for the New River seven specific volatile organic compounds or VOCs as impairing the New River. These VOCs are attributable to discharges of industrial waste from Mexico. The identified VOCs are solvents and petroleum hydrocarbon compounds and they're associated with untreated discharges of waste in Mexico and they violate the Basin Plan's quantitative and qualitative standards for the New River at the international boundary as provided in Minute No. 264 of the Mexican-American treaty. This provision of the treaty prohibits the discharge of untreated industrial waste into the New River.

The second category of changes is that we have removed the pollutant nutrients as impairing the New River because the staff has no documentation that there is an impairment from nutrients. Nutrients were listed in the New River in 1998 three years ago because the river does carry some nitrogen and phosphates that originate from Mexico and from the Imperial Valley.

So we know that there are some but they do not -- we don't have any data that shows there's an impairment as a result of that. We do know that in the Salton Sea, which is downstream of the New River, that there is a problem and it is associated with the nutrients, but we are dealing with that with a separate TMDL which we have just -- which we are just now beginning.

Okay. The third category of changes is that we have added a new pollutant to the New River for the category known as trash. This is just the type of things that you can visualize such as plastic containers, wood, dead animals, anything that -- we just see tons of this stuff floating across the international boundary into the United States.

Imperial County estimates that they pull out, at the border or just downstream of that, 200 cubic yards of trash every quarter. So that's a large accumulation of trash that adversely impacts the beneficial uses of the water including Freshwater Habitat, Wildlife Habitat, Water Contact Recreation, and Non-Contact Water Recreation.

The fourth category of changes is that, for the New River also, we have added another pollutant, dissolved oxygen or the lack of dissolved oxygen. This impairs the water -- we collect data at the New River on -- at least on a monthly basis and our samples shows that a hundred percent of the samples violate the Basin Plan's 5 milligrams per liter minimum dissolved oxygen water quality objective for the New River.

Untreated and improperly treated discharges of waste from Mexico into the New River are responsible for these violations. The low dissolved oxygen impairs the Warm Freshwater Habitat designated beneficial use of the New

River.

Okay. My fifth category of changes that we are proposing on to our list is that we are changing the word -- the pollutant "bacteria" to "pathogens." Just as in the TMDL that you just adopted, we have already changed the title. When we first listed it, we had it listed for bacteria. Bacteria includes a wide range of, you know, good bacteria and bad bacteria. By changing bacteria to pathogens, we are recognizing that only pathogenic microorganisms are of concern here. Pathogens obviously violate the Water Contact Recreation and Non-Contact Water Recreation beneficial uses of the New River.

Our final change to conclude this is that we are updating the TMDL schedules. And that's shown on the chart that I won't get into all of, you know, we are working on about six of them right now. So we have target dates. We have changed all the dates, and you should consider these tentative. The completion of all these TMDLs does depend on funding and staffing that we receive from the State Board, so depending on the availability of resources, we have set up these tentative schedules.

The status of TMDLs also depends on further evaluation of the need for and feasibility of TMDLs. That basically wraps up my presentation on the staff report. Do you have any questions?

CHAIRMAN SMITH: Any questions of staff? Gary?

GARY JOHNSON: Under the TMDL priority, they're all listed as high with the exception of the Palo Verde and the Coachella Valley Stormwater drains, one of which is listed as medium and one is listed as low. Can you explain -- well, also the Salton Sea selenium is listed as medium. Why are those medium or low and not high?

DOUG WYLIE: Most of these, the priorities were set at least by 1998 and even previously. We made very few changes in those priorities, and so they have been established by previous boards and just recognizing the various pollutants in these water bodies.

PHIL GRUENBERG: I guess I should respond to this question. The Sea was listed as medium based on the listing of salinity. And I think that was in recognition that a TMDL was not going to address the Sea's salinity problem, that it would take an engineering project to do that which was outside of the Regional Board's bounds.

GARY JOHNSON: Phil, I think it's listed as high.

PHIL GRUENBERG: Is it high?

GARY JOHNSON: That's selenium.

PHIL GRUENBERG: Selenium was one that was listed as --

CHAIRMAN SMITH: Imperial Valley drain selenium is high.

PHIL GRUENBERG: I'm looking at the wrong table.

LORI OKUN: Page 4-11.

CHAIRMAN SMITH: Selenium, yeah, go back to the last page 4-16. Go one more page. It's up at the top where it looks like -- I was reading it as part of Palo Verde drain, but it's not.

PHIL GRUENBERG: Okay. The selenium was ranked as medium, I think mainly because we were looking towards, at that time what the potential was for correction of the problem amongst other things. Is a TMDL going to correct this? Is it appropriate? But we decided that the technology isn't there and we had other priorities that were higher, because they were more easily addressed including sediment and pathogens and nutrients and that we should move those ahead of selenium as far as implementation.

So I think that was the thinking behind the medium ranking there. It's -- selenium is going to be very costly and difficult to address, where some of those other pollutants are going to be easier to address and then, taking it a step further, let's see, Palo Verde Outfall Drain got a medium and Coachella Valley Stormwater Channel got a low.

Again, well, the medium on the Palo Verde Outfall Drain is just based on the fact that the bacterial pathogen levels are not nearly as high as they are in the New River,

so we don't have the magnitude of the problem.

On the Coachella Valley Stormwater Channel, the same would be true, but also on top of that we haven't determined the source. We think we know the source for the outfall drain in Palo Verde Valley. It appears to be -- we are guessing it's septic tanks in the community of Palo Verde. But in -- for the Coachella Valley Stormwater Channel, we don't know what the source is. Again, that's going to be a difficult thing to address when you don't know what the source is.

CHAIRMAN SMITH: On that Coachella Valley Storm Channel, I see you have 20 miles. Is that just basically from the Indio Sewage Treatment Plant to the Salton Sea then?

DOUG WYLIE: Yes.

CHAIRMAN SMITH: Upstream of that, I believe it's dry all the time unless it rains.

PHIL GRUENBERG: Yeah. That just addresses the portion of the channel that's got a perennial flow.

CHAIRMAN SMITH: Right. Okay. Any other questions of staff?

GARY JOHNSON: Phil, on the Salton Sea, we are starting the nutrient TMDL process this year or scheduled to start this year. How does that process tie into the Salton Sea Authority's environmental review and what they may be

undertaking.

PHIL GRUENBERG: I think it will tie in quite well, because they recognize that, in addition to salinity being a major problem that nutrification and nutrients is another significant problem which needs to be addressed, even to the extent that they have been doing some testing using alum for phosphate removal.

So I think that we are moving in reasonable coordination with their efforts with what we are doing. I know that they were looking favorably at our sediment TMDL, because some of the phosphate in those tributaries is attached to the sediments. So there would be some removal of phosphate with implementation of that TMDL.

Also they've found that, with this experiment using the alum, that the sediment is an impediment towards getting effective removal. If you have reduced sediment loading, they could get more effective removal of phosphate using alum in a lower dosage.

So I think that the Salton Sea authority is supportive of what we are doing and is anticipating that we are going to be successful in our endeavors in this regard. But I grant that it may not be enough to correct the Sea's nutrification problem to everybody's satisfaction. So I think that's why they're doing -- they're looking at some of these other steps as more potential things that could be

done to address that problem.

GARY JOHNSON: And if there was a water transfer that eventually took place, what impact would that have on our process?

PHIL GRUENBERG: I don't think the water transfer is going to have much impact on our process unless there was a decision made as part of that that the Salton Sea was not going to be restored because that would make the nutrification problem of a lesser nature. I do not think that that's going to be what happens, but if that is what happened, it could be then that our TMDL, if the Board adopts a TMDL on nutrients, may be misguided. But at this point, I look towards the Sea positively as a situation that is going to be restored and that we have a commitment there, water quality wise, to assist in that restoration.

Did you want to add anything to this, Jose?

You need to swear Mr. Angel in. He's got something to say, go ahead and swear him in.

JOSE ANGEL: I'm not sure that I need to, but go ahead.

CHAIRMAN SMITH: I forgot the whole thing. How about I do like in court. Do you swear to tell the truth, the whole truth and nothing but the truth?

JOSE ANGEL: That's it, I do.

CHAIRMAN SMITH: He does. Thank you.

JOSE ANGEL: Just real quick, in response to the other observation by Mr. Johnson, we already started also the pathogen TMDL for the Palo Verde. And my observation is not mine, so I'm not going to take credit for it. It's Chris, so I'll let him make the point on one of the changes that we are proposing that you take.

PHIL GRUENBERG: He has to be sworn in too.

CHAIRMAN SMITH: Do you solemnly swear or affirm that the testimony which you will give in the matter will be the truth? If so, answer by saying, "I do."

CHRIS IGBINEDION: I do.

CHAIRMAN SMITH: Okay.

CHRIS IGBINEDION: Thank you. I just observed that it was not clear that we referred to dissolved oxygen as a pollutant and we would probably, staff would like to change that to dissolved organic matter.

GARY JOHNSON: Can you explain?

CHRIS IGBINEDION: Because dissolved oxygen is not a pollutant. The pollutant that is coming from Mexico we are interested in is dissolved organic matter, and which is indicated by BOD.

CHAIRMAN SMITH: The dissolved oxygen is a result not a problem.

CHRIS IGBINEDION: We want dissolved oxygen. Thank you.

CHAIRMAN SMITH: Any testimony from affected parties or interested parties? Seeing none, we will go to the executive officer recommendation.

PHIL GRUENBERG: I simply recommend adoption of Resolution No. 01-205.

CHAIRMAN SMITH: That's your whole statement?

PHIL GRUENBERG: That's my whole statement.

CHAIRMAN SMITH: Okay.

LORI OKUN: I have a question. Actually, are we changing DO to dissolved biological or dissolved organics now or is that something that's going to happen later?

PHIL GRUENBERG: I would also recommend that that change be included at this time.

CHAIRMAN SMITH: Okay. We will include that in a motion then, that the dissolved oxygen --

DR. DAN BAXLEY: The word "dissolved oxygen" if it's referenced anywhere become --

LORI OKUN: Dissolved organic matter?

CHAIRMAN SMITH: Dissolved organic matter. Who wants to try that motion?

NANCY WRIGHT: I'll so move.

CHAIRMAN SMITH: Do I have a second?

GARY JOHNSON: I'll second.

CHAIRMAN SMITH: Any discussion by the Board? I'll go to a role call.

KRISTIE GARCIA: Nancy Wright?

NANCY WRIGHT: Yes.

KRISTIE GARCIA: Dr. Dan Baxley?

DR. DAN BAXLEY: Yes.

KRISTIE GARCIA: Gary Johnson?

GARY JOHNSON: Yes.

KRISTIE GARCIA: Michael Smith?

CHAIRMAN SMITH: Aye.

KRISTIE GARCIA: Leon Lesicka?

LEON LESICKA: Yes.

KRISTIE GARCIA: Brenda Soulliere?

BRENDA SOULLIERE: Yes.

KRISTIE GARCIA: Motion carries.

CHAIRMAN SMITH: Thank you.

(Public hearing concluded.)

REPORTER'S CERTIFICATE

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN BERNARDINO)

I, WANDA J. HARRISON, a Certified Shorthand Reporter within and for the County of San Bernardino, State of California, do hereby certify:

That the foregoing proceedings were taken down by me in shorthand at the time and place therein stated and was thereafter reduced to print by Computer-Aided Transcription under my direction;

I further certify that I am not of counsel or attorney for any of the parties hereto or in any way interested in the event of this cause and that I am not related to any of the parties thereto.

Dated this 16th day of October, 2001.

Wanda J. Harrison
WANDA J. HARRISON

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

MEMORANDUM

TO: Celeste Cantu, Executive Director
State Water Resources Control Board

FROM: Phil A. Gruenberg, Executive Officer

DATE: October 11, 2001

SUBJECT: Recommended Update for Region's 303(d) List of Impaired Surface Waters

On October 10, 2001, after a public hearing on the matter, the Regional Board adopted Resolution No. 01-205, which contains recommended changes that the State Board should make to the Region's List of impaired surface waters (303(d) List).

The most significant recommendations are a revised time schedule for TMDL development for all listed waters in the Region and the additional listing of several pollutants in the New River. Regarding the latter, staff noted during the hearing that instead of listing dissolved oxygen (DO) as a pollutant impairing the New River, it should be organic matter, with DO being the stressor-indicator parameter. The Regional Board agreed and adopted Resolution No. 01-205, with the noted change.

Enclosed are copies of Resolution No. 01-205 and the staff report, which reflect the recommended changes. Attachment Three of the staff report is the recommended 2001 303(d) List for the Region.

Please call me at (760) 776-8925 if you have any questions.

Enclosures:

1. Regional Board Resolution No. 01-205
2. Staff Report on 303(d) List (w/ its 5 attachments)

File: BP-303(d) List

JLA:pg

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

RESOLUTION NO. 01-205

A RESOLUTION APPROVING THE 2001 303(D) LIST OF IMPAIRED WATER BODIES
FOR THE
COLORADO RIVER BASIN REGION

WHEREAS, the California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter Regional Board), finds that:

1. Section 303(d) of the Clean Water Act requires each state to develop a 303(d) List, which identifies and prioritizes water bodies that do not attain water quality standards after implementation of point source best available technology (BAT) controls and best management practices (BMPs).

2. The 303(d) List is reviewed and updated by the Regional Board as necessary (typically every three years), subject to the approval of the State Board and the United States Environmental Protection Agency (USEPA).

3. On January 8, 1998, the Colorado River Basin Regional Board approved the 303(d) List. The 1998 303(d) List was also approved by the Stat Board and the USEPA the same year.

4. On February 28, 2001, Regional Board staff solicited information from the public for updating its 303(d) List.

5. On August 16, 2001, Regional Board staff distributed the draft updated 303(d) List by mail to interested parties.

6. On August 20, 2001, Regional Board staff mailed a Notice of Public Hearing to be published in six local newspapers.

7. On August 21, 2001; Regional Board staff requested the Postmaster to post the Notice of Public Hearing in six post offices of interested cities and communities.

8. Regional Board staff has reviewed data and comments from affected stakeholders, data collected by staff and other agencies, and applicable water quality standards in developing a proposed updated 303(d) List.

9. The 2001 303(d) List of impaired water bodies for the Colorado River Basin Region contains the same six water bodies previously listed in the 1998 303(d) List with some changes, so that the updated list:

   a. Identifies specific volatile organic compounds (VOCs) as impairing the New River. The VOCs are attributable to discharges of wastes from Mexico;

   b. Removes the pollutant "nutrients" as impairing the New River;

   c. Adds trash from Mexico as a pollutant impairing the New River;

d. Adds dissolved oxygen as another pollutant impairing the New River;

e. Changes "bacteria" to "pathogens" as a pollutant impairing the Palo Verde Outfall Drain, the New River, and the Coachella Valley Stormwater Channel; and

f. Modifies the time schedule for TMDL development.

10. A public hearing was conducted on October 10, 2001 for the purpose of approving the updated 2001 303(d) List.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Regional Board herewith approves the updated 2001 303(d) List for the Colorado River Basin Region as shown in Attachment "Three" of the "Staff Report on the Proposed Update of Clean Water Act 303(d) List of Impaired Water Bodies Within the Colorado River Basin Region", and as required by the Federal Clean Water Act.

2. The Executive Officer is directed to forward copies of the approved 2001 303(d) List for the Colorado River Basin Region, its supporting documentation, and this Resolution to the State Board.

I, Phil Gruenberg, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on October 10, 2001.

PHIL GRUENBERG
Executive Officer

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

STAFF REPORT ON THE PROPOSED UPDATE OF CLEAN WATER ACT 303(d) LIST OF IMPAIRED WATER BODIES WITHIN THE COLORADO RIVER BASIN REGION

INTRODUCTION

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Board) is charged by the Porter-Cologne Water Quality Control Act with the protection of water quality for waters within the Region. The Regional Board is also responsible for implementing provisions and pollution control requirements that the Federal Clean Water Act (CWA) specifies for surface waters of the United States. CWA Section 303(d) requires the State to identify those surface water bodies that do not meet water quality standards after implementation of technology-based and best management practices (BMPs). The Regional Board's Water Quality Control Plan for the Colorado River Basin (Basin Plan) identifies all waters in the Region and establishes water quality standards for those waters. Water quality standards consist of limits or levels of water quality constituents or characteristics that are established for the reasonable protection of the beneficial uses of a water body.

Following the identification of impaired water bodies, the State is also required to establish a priority list of these water bodies, identify the pollutants that cause the impairments, and in partnership with the United States Environmental Protection Agency (USEPA), develop pollutant-loading limits commonly called Total Maximum Daily Loads (TMDLs). Surface water bodies within the Colorado River Basin Region that are impaired (i.e. do not fully achieve their designated beneficial uses and/or are in noncompliance with water quality objectives) have been placed on the Regional Board's Clean Water Act Section 303(d) List (hereafter "303(d) List"). The Regional Board's 303(d) List is reviewed and updated as necessary (typically every 3 years) and is subject to the approval of the State Water Resources Control Board (State Board) and the USEPA.

The Regional Board's 303(d) List was last updated in 1998, approved by the State Board the same year, and approved by the USEPA in 1998. Attachment One shows the 1998 CWA 303(d) List for the Region. The impaired surface waters for the Region are:

1- New River
2- Alamo River
3- Imperial Valley Drains
4- Salton Sea
5- Palo Verde Outfall Drains
6- Coachella Valley Stormwater Channel.

Regional Board staff is proposing that the Regional Board update its 1998 303(d) List based on data and comments received from stakeholders and based on data collected by the staff. Staff is also recommending that the Regional Board submit the updated 303(d) List to the State Board for approval. The State Board will be reviewing updated 303(d) Lists from all the Regional Boards, hold a public hearing and consider public comments, finalize the 303(d) List, and transmit the List to the USEPA for final approval. In developing the 303(d) List, Regional Board staff considered federal regulations under the Clean Water Act (see, e.g., 40 C.F.R. Parts 25 and 130). Staff then solicited public input and provided public notice regarding the 303(d) Listing and TMDL processes. Staff considered various factors, including non-attainment of water quality standards, public health

advisories, previous 303(d) Lists, and bioaccumulation of pollutants in fish tissue at concentrations that exceed applicable fish tissue criteria or guidelines.

PUBLIC INPUT

In a letter dated February 28, 2001, the Regional Board staff solicited information from the public for updating its 303(d) List (see Attachment Two). The following agencies and persons submitted data in response to the letter:

Agency	Information Submitted
U.S. Bureau of Reclamation (USBOR)	Fax and E-mails with water quality data on the Colorado River above Imperial Dam and on the Brawley Wetlands Projects.
US Geological Survey	A Hard copy from the USGS "Water Resources Data, Arizona, Water Year 1999" regarding water quality data on the Colorado River and tributaries to the Colorado River.
California Department of Pesticide Regulation	Letter referring the Regional Board staff to the Department's Internet Databases that include water quality data on the region's surface waters.
US Department of Agriculture, Forest Service	Letter reporting that Department is updating its water quality records
Big Bear Regional Wastewater Agency	Letter reporting water quality data on Big Bear Lake.
Metropolitan Water District of Southern California	Letter reporting water quality data on Lake Havasu.
George Bernath at EarthLink	E-mail reporting water quality data on the Piute Spring.

Copies of all data and information received from the public will be sent to the State Water Resources Control Board in support of the Regional Board's List.

REVIEW OF DATA AND COMMENTS

Regional Board staff has reviewed the data and comments submitted by stakeholders and reviewed existing and readily available water quality-related data. Based on that review, staff is proposing that the Regional Board update its 303(d) List so that the updated List:

1. Identifies specific volatile organic compounds (VOCs) as impairing the New River. The VOCs are attributable to discharges of wastes from Mexico;
2. Removes the pollutant "nutrients" as impairing the New River because there is no documentation that the impairment manifests itself in the river, even though nutrients in the river end up in and are impairing the Salton Sea;
3. Adds trash from Mexico as a pollutant impairing the New River;

4. Adds organic matter as another pollutant impairing the New River. The effect of this pollutant is manifested as chronic low dissolved oxygen in the river;
5. Changes "bacteria" to "pathogens" as a pollutant impairing the Palo Verde Outfall Drain, the New River, and the Coachella Valley Stormwater Channel; and
6. Modifies the time schedule for TMDL development.

Attachment Three shows the proposed updated 303(d) List for the Region. The proposed changes are also based on data previously submitted to Regional Board by State Board, the Imperial Irrigation District, and the Salton Sea Authority. The following section describes the rationale for the changes.

PROPOSED CHANGES TO THE 303(d) LIST

The proposed 2001 303(d) List described in Attachment Three contains the same six water bodies previously listed with some changes. The changes and rationale for the changes follow:

1- Remove the pollutant "nutrients" from the New River. Nutrients were added to the New River in 1998 because the river carries nitrogen and relatively high elevated concentrations of phosphates from Mexico and the Imperial Valley. However, the Regional Board has no data showing that these nutrients are in fact violating water quality standards in the New River, even though the New River is the largest contributor of phosphate in the Salton Sea. Nutrients discharged into the Salton Sea are causing eutrophic conditions, which in turn causes fish die-offs in the Sea.

2- Change the pollutant "bacteria" to "pathogens" for all water bodies listed for bacteria in the previous list. Regional Board staff proposes the change to recognize that only pathogenic microorganisms are of concern here. Pathogens violate the following WQS for these surface waters: Water Contact Recreation (REC I) and Non-contact Water Recreation (REC II). Pathogens in the New River at the International Boundary also violate the qualitative and quantitative water quality standards of the New River as provided in Minute No. 264 of the Mexican-American Water Treaty.

3- List specific volatile organic compounds (VOCs) for the New River based on monitoring data collected by the Regional Board from 1995 to date for the New River at the International Boundary with Mexico. The identified VOCs (e.g., solvents and petroleum hydrocarbon compounds) are associated with untreated and improperly treated discharges of industrial wastes in Mexico, violate the Basin Plan quantitative and qualitative standards for the New River at the International Boundary, as provided for in Minute No. 264 of the Mexican-American Treaty. Minute No. 264 of this treaty prohibits the discharge of untreated industrial wastes in the New River. However, data collected by the USBOR near the New River- Salton Sea Delta didn't detect any major present of VOCs, which indicate that the VOCs impairment may not affect the whole 60-mile stretch of the New River in the USA. Additional data is necessary to characterize the impacted river segment.

4- Add organic matter as another condition impairing the New River. The effect of this pollutant is indicated by the lack of dissolved oxygen in the river. Dissolved oxygen is a stressor indicator parameter for organic load. Regional Board monthly reports on Binational Observation Tours of the New River Watershed in Mexicali document that anywhere from 5 to 20 million gallons per day of raw sewage are discharged into the New River in Mexicali. They also note discharges of untreated and partially treated industrial discharges. One of the water quality impacts of these discharges is manifested in chronic dissolved oxygen conditions in the New River in the USA. Conditions at the worst within 20 miles downstream of the International Boundary. Monthly data collected by Regional Board staff on the New River at the International Boundary between January 1996 through July 2001 showed that

100% of DO samples violated the Basin Plan's 5 mg/L minimum dissolved oxygen water quality objective for the New River. Untreated and improperly treated discharges of wastes from Mexico into the New River are responsible for the violations. The low DO impairs the Warm Freshwater Habitat (WARM) designated beneficial uses of the New River. It also results in unaesthetic conditions in the river that prevent attainment of the designated recreational uses of the river.

5- Add "trash" as a pollutant impairing the New River. During monthly 8-hour and quarterly 24-hour sampling events of the New River at the International Boundary, Regional Board staff has routinely observed trash floating in the New River. Also, Imperial County estimates that the County removes about 200 cubic yards of accumulated trash from the river a few miles north of the International Boundary every six months. The trash adversely impacts the following beneficial uses of the New River: Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Water Contact Recreation (REC I) and Non-Contact Water Recreation (REC II). Trash also violates Minute No. 264 of the Mexican-American Water Treaty that requires the water of the New River to be free from trash, oil, scum, or other floating materials resulting from human activity in amounts sufficient to be injurious, unsightly, or to cause adverse effects on human life, fish, and wildlife.

6- Modify the proposed time schedule for TMDL development as shown in Attachment Three. The proposed time schedule is predicated on Regional Board prioritization. Target dates for TMDL development in the list should be considered tentative. Completion of TMDLs will depend mainly on the availability of resources in terms of staff and funds. They will also depend upon further evaluation of the need for and feasibility of TMDLs.

ATTACHMENTS

1. The 1998 303(d) List for the Colorado River Basin Region.
2. February 28, 2001 Public Solicitation Letter.
3. Recommended Colorado River Basin Region 2001 303(d) List.
4. 1996-2001 water quality data for New River downstream of International Boundary.
5. 2000-2001 Monthly reports on Binational Observation Tour of New River in Mexicali.

Attachment One
December 1998 303(d) List
Colorado River Basin Regional Water Quality Control Board
Timeline for Development of Total Maximum Daily Loads (TMDLs)*

WATERBODY	HYDROLOGIC UNIT NO.	SIZE AFECTED	PROBLEM DESCRIPTION	SPECIFIC POLLUTANTS	PROBABLE SOURCE	TMDL PRIORITY	TARGET DATE (S)
New River	723.10	60 miles	Public health hazard, objectives violated, fish kills	Pesticides, silt, Bacteria, nutrients, VOCs	Agricultural return flows and Mexico	High	Silt: Start 1998, complete 2002 Bacteria: Start 1998, completed 2005** Nutrients: Start 2002, complete 2010 Pesticides: Start 2002, complete 2013 VOCs: Start 2007, complete 2013
Alamo River	723.10	52 miles	Elevated fish tissue levels (pesticides and selenium), toxic bioassay results (pesticides), recreational impacts	Pesticides, selenium, silt	Agricultural return flows	High	Silt: Start 1998, completed 2000 Selenium: Start 2000, complete 2010 Pesticides: Start 2002, complete 2011
Imperial Valley Drains	723.10	1,305 miles	Elevated fish tissue levels (pesticides and selenium), toxic bioassay results (pesticides), recreational impacts	Pesticides, selenium, silt	Agricultural return flows	High	Silt: Start 1998, complete 2000 Selenium: Start 2000, complete 2010 Pesticide: Start 2005, complete 2011
Salton Sea	728.00	220,000 acres	Salinity objectives violated, Elevated fish tissue levels (selenium), recreational impacts	Selenium, salts, nutrients	Agricultural return flows	Medium	Salt: Start 1998, complete 2001 Selenium: Start 2002, complete 2007 Nutrients: Start 2002, complete 2010
Palo Verde Outfall Drain	715.40	16 miles	Bacteria objective violated, threat of toxic bioassay results, threat of sedimentation	Bacteria	Unknown	Medium	Bacteria: Start 2005, complete 2011
Coachella Valley Storm water Channel	719.47	20 miles	Bacteria objective violated, threat of toxic bioassay results	Bacteria	Unknown	Low	Bacteria: Start 2004, complete 2009

* This is not a commitment to complete work. The commitments are made in fund source specific workplans.

** Regional Board proposes to establish TMDL in cooperation with USEPA/Mexico.

*** Selenium originates from upper portion of the Colorado River and is delivered to the Imperial Valley via irrigation water.

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Phone (760) 346-7491 · FAX (760) 341-6820

Gray Davis
Governor

Date: February 28, 2001

Attachment Two: PUBLIC SOLICITATION OF WATER QUALITY INFORMATION

The Colorado River Basin Regional Water Quality Control Board (Regional Board) is soliciting the public on behalf of the State Water Resources Control Board (SWRCB) for data and information regarding water quality conditions in surface waters in this Region. The information gathered will be used in various assessments of the State's waters including the development of a submission to US EPA required by the federal Clean Water Act (Section 303(d)). This submission will be developed by the SWRCB and will provide US EPA with a revised list of waters considered by the State to be impaired (not attaining water quality standards) after certain required technology based water quality controls are in place. It is anticipated that this submission will be provided to US EPA by April 2002, as required by federal regulations. The submission will be based on information and data available to the SWRCB and the Regional Water Quality Control Boards. The information gathered in this solicitation will also contribute to the preparation of the 2002 federal Clean Water Act Section 305(b) Report on Water Quality.

Anyone, including but not limited to, private citizens, public agencies, state and federal governmental agencies, non-profit organizations, and businesses, possessing information regarding the quality of the Region's waters may provide information.

We are seeking to obtain all readily available data and assessment information **generated since July 1997. All data and information you wish to provide must be received by the Regional Board by 5:00 p.m. on May 15, 2001.** For purposes of this solicitation, information is any documentation describing the current or anticipated water quality condition of a surface water body. We consider data to be a subset of information that consists of reports of measurements of specific environmental characteristics. The data and information may pertain to physical, chemical, and/or biological conditions of the region's waters or watersheds.

Information provided should conform to the following considerations:

- The name of the entity or person providing the information.
- Mailing address, phone numbers, and email addresses for a contact person that can answer questions about any of the information provided.
- Two hard copies and an electronic copy of all information provided. For reports Microsoft Word is the preferred software. Please specify the software used to format the information and provide definitions for any codes or abbreviations used.
- Bibliographic citations for all information provided.
- If computer model outputs are included in the information, please provide bibliographic citations and specify any calibration and quality assurance information available.

Any data provided should conform to the following considerations:

- Data in electronic form, in a spreadsheet, database or ASCII format. Please specify the format and define any codes or abbreviations used in your database.

- A description of, and reference for your quality assurance procedures.
- Metadata for the field data, i.e., when measurements where taken, locations, number of samples, detection limits, etc.
- If possible, **two** hard copies of the data, so that we can verify that we have accurately transferred the data to our database.
- In addition, for data from citizen volunteer water quality monitoring efforts:

  The name of your group;
  Indication of any training in water quality assessment completed by members of your group;

We would like to receive data and information as soon as possible and no later than **May 15, 2001.** Data or information received after May 15, 2001 will not be considered in developing the April 2002 submission to US EPA required by Clean Water Act Section 303(d).
Please send any information and data you wish to provide to:
Teresa Newkirk
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260
newkt@rb7.swrcb.ca.gov

If you have questions regarding information or data you wish to submit, please contact:
Teresa Newkirk
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260
newkt@rb7.swrcb.ca.gov
(760) 346-7491

The Regional Boards have been requested to provide recommendations to the SWRCB in Fall 2001 on the condition of Regional waters. The SWRCB will consider all Regional Boards' recommendations regarding the conditions of the Region's waters when formulating the 303(d) submission. The State's submission revising the list of impaired waters will be considered by the SWRCB in a public process to be conducted next winter. Opportunities for review of the proposed submission and public comment on the submission will be announced at a later date.

Attachment Three
CRWQCB-CRBR 2001 303(d) List
Timeline for Development of Total Maximum Daily Loads (TMDLs)[1]

WATERBODY	HYDROLOGIC UNIT NO.	SIZE AFFECTED	PROBLEM DESCRIPTION	POLLUTANT/STRESSOR	PROBABLE SOURCE	TMDL PRIORITY	TARGET DATE(S)
New River	723.10	60 miles	Basin Plan Objectives violated, public health hazard	Pathogens	Mexico and Wastewater Treatment Plants in Imperial County	High	Started 1998, completed 2001
			Basin Plan Objectives violated, recreational impacts	Silt	Imperial Valley agricultural return flows	High	Started 1998, complete 2002
			Elevated fish tissue levels, fish kills	Pesticides[4]	Imperial Valley agricultural return flows and Mexico	High	Start 2005, complete 2011
			Basin Plan Objectives violated, fish kills	Organic Matter/Dissolved Oxygen	Mexico	High	Start 2003, complete 2006
			Basin Plan Objectives violated, Public health hazard	Trash	Mexico	High	Start 2004, complete 2007
			Basin Plan Objectives violated[2]	Chloroform	Mexico	High	Start 2007, complete 2011
			Basin Plan Objectives violated[2]	Toluene	Mexico	High	Start 2007, complete 2011
			Basin Plan Objectives violated[2]	p-Cymene	Mexico	High	Start 2006, complete 2009
			Basin Plan Objectives violated[2]	1,2,4-trimethylbenzene	Mexico	High	Start 2006, complete 2009
			Basin Plan Objectives violated[2]	m,p,-Xylene	Mexico	High	Start 2005, complete 2008
			Basin Plan Objectives violated[2]	o-Xylenes	Mexico	High	Start 2005, complete 2008
			Basin Plan Objectives violated[2]	p-DCB	Mexico	High	Start 2006, complete 2010

1. (See footnotes on page 3)

Attachment 3 (cont.)

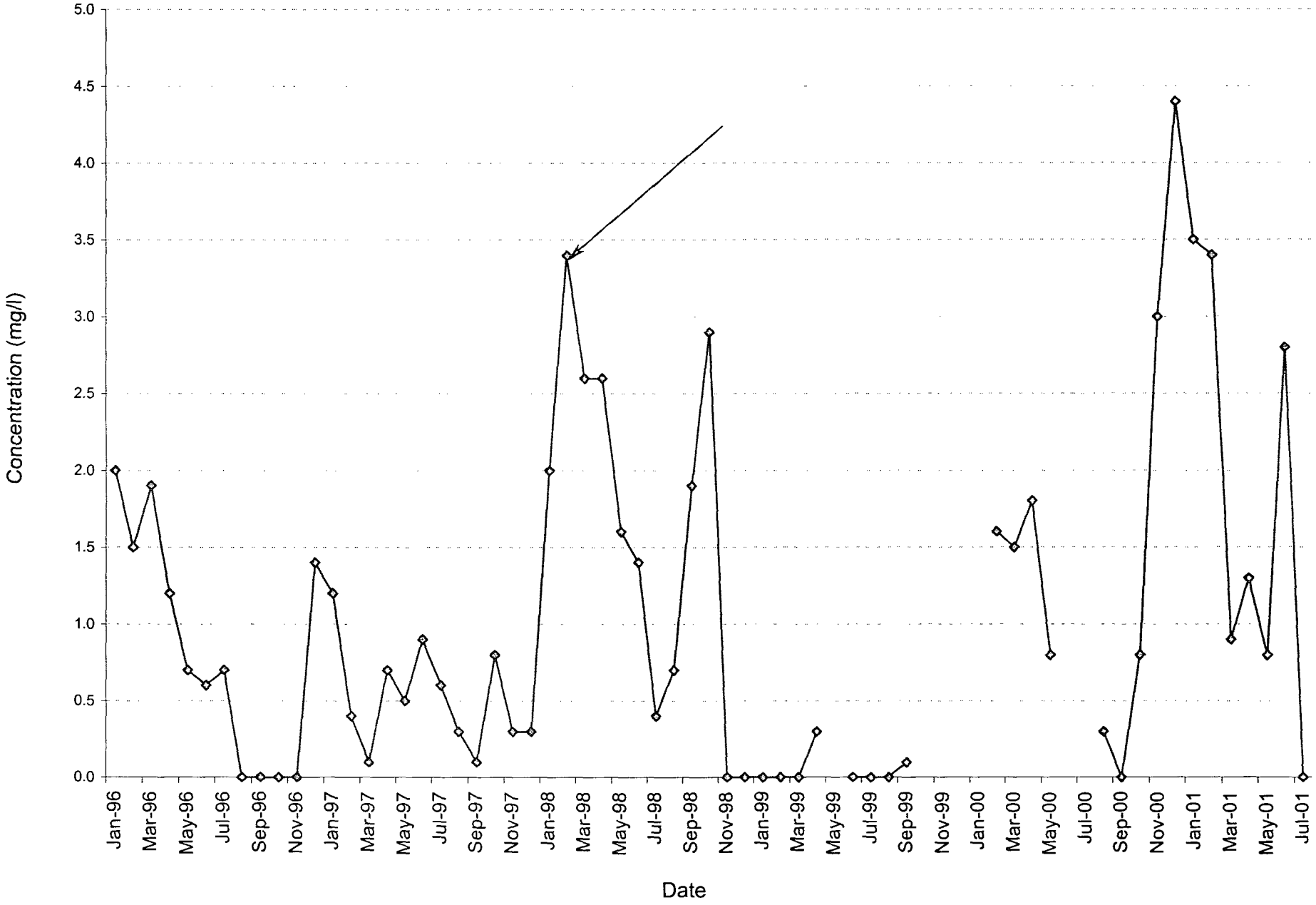
WATERBODY	HYDROLOGIC UNIT NO.	SIZE AFFECTED	PROBLEM DESCRIPTION	POLLUTANT/STRESSOR	PROBABLE SOURCE	TMDL PRIORITY	TARGET DATE(S)
Alamo River	723.10	52 miles	Basin Plan Objectives violated, recreational impacts	Silt	Imperial Valley agricultural return flows	High	Started 1998, completed 2001
			Elevated fish tissue levels, toxic bioassay results	Pesticides[4]	Imperial Valley agricultural return flows	High	Start 2005, complete 2011
			Elevated fish tissue levels	Selenium[3]	Imperial Valley agricultural return flows	High	Start 2005, complete 2010
Imperial Valley Drains	723.10	1,305 miles	Basin Plan Objectives violated, recreational impacts	Silt	Imperial Valley agricultural return flows	High	Start 2001, complete 2004
			Elevated fish tissue levels, toxic bioassay results	Pesticides[4]	Imperial Valley agricultural return flows	High	Start 2005, complete 2011
			Elevated fish tissue levels	Selenium[3]	Imperial Valley agricultural return flows	High	Start 2003, complete 2010
Salton Sea	728.00	220,000 acres	Basin Plan Objectives violated, recreational impacts	Nutrients	Agricultural return flows, NPDES Wastewater Treatment Plants, Mexico	High	Start 2001 complete 2004
			Basin Plan Objectives violated	Salts[5]	Agricultural return flows, NPDES Wastewater Treatment Plants, Mexico	High	
			Elevated fish tissue levels	Selenium[3]	Agricultural return flows	Medium	Start 2005, complete 2010

Attachment 3 (cont.)

WATERBODY	HYDROLOGIC UNIT NO.	SIZE AFFECTED	PROBLEM DESCRIPTION	POLLUTANT/STRESSOR	PROBABLE SOURCE	TMDL PRIORITY	TARGET DATE(S)
Palo Verde Outfall Drain	715.40	16 miles	Basin Plan Objectives violated, public health hazard	Pathogens	Unknown	Medium	Start 2001, complete 2003
Coachella Valley Storm water Channel	719.47	20 miles	Basin Plan Objectives violated, threat of toxic bioassay results	Pathogens	Unknown	Low	Start 2002, complete 2005

1. This is not a commitment to complete work. The commitments are made in fund source specific workplans.
2. Current Regional Board's monitoring data for the New River at the International Boundary shows that VOCs are routinely present in the New River immediately downstream from the International Boundary with Mexico, at concentrations that violate Basin Plan objectives. However, data collected by USBOR near the New River-Salton Sea Delta in 1999 and briefly presented at the January 13-14, 2000 Salton Sea Symposium found that VOCs in the New River not to be of major concern. Therefore, it is believed that the VOC impairment may not affect the 60-mile stretch of the New River in the USA. Additional data is necessary to characterize the impacted river segment.
3. Selenium originates from upper portion of the Colorado River and is delivered to the Imperial Valley via irrigation water; Selenium will likely be addressed via a federal TMDL for the entire Colorado River Watershed.
4. May be effectively addressed by Silt TMDL, thus not requiring new TMDL development.
5. TMDL development will not be effective in addressing this problem, which will require an engineered solution with federal, state, and local cooperation.

DISSOLVED OXYGEN CONCENTRATIONS (1996 – JULY 2001) AT THE NEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXICO



DISSOLVED OXYGEN CONCENTRATIONS (1996 – JULY 2001) AT THE NEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXICO

	1996												1997										
Time	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
7:00	1.6	1.1	1.4	0.5	0.0	0.1	0.2	0.0	0.0	0.0	0.0	1.1	1.1	0.2	0.2	0.7	0.3	0.2	0.0	0.0	0.1	0.8	0.4	2.4
8:00	1.6	1.2	1.6	0.6	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.9	1.1	0.4	0.2	0.7	0.1	0.5	0.0	0.0	0.3	0.8	0.3	2.6
9:00	1.6	1.3	1.8	0.7	0.3	0.4	0.5	0.0	0.0	0.0	0.0	1.4	1.3	0.4	0.1	0.9	0.4	0.6	0.4	0.0	0.2	0.9	0.3	2.5
10:00	1.8	1.4	1.9	0.8	0.4	0.7	0.7	0.0	0.0	0.0	0.0	1.7	1.3	0.5	0.1	1.2	0.4	0.7	0.0	0.1	0.1	1.0	0.2	2.5
11:00	2.0	1.8	2.1	1.3	0.8	0.8	0.7	0.0	0.0	0.0	0.0	1.7	1.2	0.7	0.1	2.0	0.4	1.2	1.0	0.3	0.2	0.7	0.2	2.6
12:00	2.3	2.0	2.1	1.7	1.2	1.0	0.8	0.0	0.0	0.0	0.0	1.7	1.3	0.5	0.0	1.2	0.9	1.6	1.4	0.6	0.2	0.5	0.2	3.1
13:00	2.4	1.7	2.2	2.0	1.3	1.1	0.9	0.0	0.0	0.0	0.0	1.5	1.2	0.7	0.0	1.4	1.4	2.6	0.7	0.7	0.3	0.7	0.6	3.2
14:00	2.5	1.6	2.4	2.1	1.4	0.8	2.0	0.0	0.0	0.0	0.0	1.5	1.1	0.2	0.0	1.6	1.7	3.3	1.0	0.5	0.2	0.9	0.5	3.3
15:00																1.4	0.1	3.1			0.1			3.5
16:00																1.1	0.7	2.9			0.0			3.4
17:00																0.8	1.5	2.2			0.0			3.7
18:00																0.5	1.1	1.5			0.0			3.5
19:00																0.4	0.8	0.0			0.0			
20:00																0.3	0.3	0.1			0.0			
21:00																0.4	0.1	0.1			0.0			
22:00																0.4	0.1	0.0			0.0			
23:00																0.4	0.0	0.0			0.0			3.5
0:00																0.4	0.1	0.0			0.0			3.0
1:00																0.3	0.1	0.0			0.0			3.6
2:00																0.2	0.0	0.1			0.0			3.5
3:00																0.3	0.0	0.0			0.0			4.2
4:00																0.3	0.1	0.0			0.0			4.2
5:00																0.5	0.3	0.0			0.2			4.4
6:00																0.4	0.2	0.1			0.0			4.3
Ave	**2.0**	**1.5**	**1.9**	**1.2**	**0.7**	**0.6**	**0.7**	**0.0**	**0.0**	**0.0**	**0.0**	**1.4**	**1.2**	**0.4**	**0.1**	**0.7**	**0.5**	**0.9**	**0.6**	**0.3**	**0.1**	**0.8**	**0.3**	**3.3**

DISSOLVED OXYGEN CONCENTRATIONS (1996 – JULY 2001) AT THE NEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXICO

	2000									2001						
Time	Feb	Mar	Apr	May	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
7:00	1.0	1.5	1.1	0.7	0.1	0.2	1.0	2.5	3.6	4.5	2.9	0.6		0.8	2.1	0.0
8:00	1.3	1.6	1.2	0.9	0.4	0.1	0.9	2.6	4.2	4.0	3.0	0.7		0.5	4.1	0.0
9:00	1.6	2.1	1.4	0.7		0.2	0.9	2.7	**5.9**	3.9	3.5	0.8	1.5	0.6	3.0	0.0
10:00	1.8	2.8	1.5	0.5		0.0	1.0	3.3	3.9	3.8	3.8	0.9	1.1	0.5	2.2	0.0
11:00	1.8	2.9	2.3	0.5		0.0	0.9	3.5	4.2	3.6	3.1	1.1	1.3	1.0	2.6	0.0
12:00	1.9	2.9	2.3	1.0		0.0	0.8	3.3	4.1	3.5	4.0	1.4	2.6	1.1		0.0
13:00	1.7	3.2	2.4	1.1		0.0	0.8	3.1	4.8	3.2	3.7	0.9	2.4	1.1		0.0
14:00	1.4	3.0	2.3	1.4		0.0	0.3	3.0	4.2	3.4	3.3	1.1	1.8	1.0		0.0
15:00		2.6				0.0				3.2			1.7			0.0
16:00		2.1				0.0				3.0			1.6			0.0
17:00		1.5				0.0				2.7			1.1			0.0
18:00		1.2				0.0				2.7			1.2			0.0
19:00		0.8				0.0				2.6			1.0			0.0
20:00		0.6				0.0				2.7			0.6			0.0
21:00		0.4				0.0				2.2			0.4			0.0
22:00		0.4				0.0				2.9			0.6			0.2
23:00		0.7				0.0				3.0			0.8			0.0
0:00		0.9				0.0				3.1			1.4			0.0
1:00		0.7				0.0				3.7			1.0			0.0
2:00		0.5				0.1				3.5			0.9			0.0
3:00		0.5				0.0				3.8			1.1			0.0
4:00		1.0				0.0				4.7			1.2			0.0
5:00		1.1				0.0				**5.4**			1.2			0.0
6:00		1.4				0.0				4.3			1.2			0.0
Ave	1.6	1.5	1.8	0.8	0.3	0.0	0.8	3.0	4.4	3.5	3.4	0.9	1.3	0.8	2.8	0.0

DISSOLVED OXYGEN CONCENTRATIONS (1996 – JULY 2001) AT THE NEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXICO

	1998												1999							
Time	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Jun	Jul	Aug	Sep
7:00	1.4	2.1	2.5	0.6	0.3	0.6	0.1	0.0	0.9	-	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.8
8:00	1.6	2.5	2.6	0.7	0.5	0.7	0.0	0.0	1.7	2.3	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.6
9:00	1.8	3.0	2.8	1.8	0.9	0.7	0.0	0.1	1.1	2.2	0.0	0.0	0.0	0.0	0.0	0.7	0.0		0.0	0.1
10:00	1.7	3.5	3.2	2.8	0.6	1.6	0.3	0.4	2.8	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
11:00	2.2	3.6	3.5	2.9	1.8	2.0	0.4	0.7	4.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12:00	2.2	3.8	3.7	3.6	2.1	3.0	0.4	1.2	3.1	3.2	0.0	0.0	0.0	0.0	0.0	0.5	0.0		0.0	0.1
13:00	2.6	4.1	4.0	4.3	3.2	3.4	0.9	1.7	3.5	3.6	0.0	0.0	0.0	0.0	0.0	1.3	0.0		0.0	0.0
14:00	2.6	4.4	3.9	3.9	3.4	3.8	0.9	1.9	3.9	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
15:00			3.6			3.7			3.9			0.0			0.0		0.0			0.0
16:00			3.4			3.3			3.8			0.0			0.0		0.0			0.0
17:00			3.4			3.3			2.8			0.0			0.0		0.0			0.0
18:00			3.0			2.6			2.0			0.0			0.0		0.0			0.0
19:00			2.4			1.3			1.4			0.0			0.0		0.0			0.0
20:00			2.4			0.8			1.3			0.0			0.0		0.0			0.0
21:00			1.8			0.6			1.4			0.0			0.0		0.0			0.0
22:00			1.8			0.5			1.2			0.0			0.0		0.0			0.0
23:00			1.6			0.7			1.1			0.0			0.0		0.0			0.0
0:00			2.2			0.4			1.3			0.0			0.0		0.0			0.0
1:00			2.6			0.4			1.2			0.0			0.0		0.0			0.1
2:00			1.2			0.2			1.1			0.0			0.0		0.0			0.1
3:00			1.5			0.0			0.9			0.0			0.0		0.0			0.1
4:00			1.8			0.0			0.7			0.0			0.0		0.0			0.1
5:00			2.0			0.3			0.9			0.0			0.0		0.0			0.1
6:00			2.4			0.3			0.0			0.0			0.0		0.0			0.1
Ave	2.0	3.4	2.6	2.6	1.6	1.4	0.4	0.7	1.9	2.9	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.1

DISSOLVED OXYGEN CONCENTRATIONS (1996 – JULY 2001) AT THE NEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXICO

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

CHLOROFORM

	1996			1997						1998						
Time	Aug	Sep	Nov	Feb	Mar	April	May	Jul	Sep	Dec	Jan	Mar	June	Jul	Sep	Dec
9:00		0.52	0.54		0.67				0.61		0.64			0.51	0.85	
12:00	0.59	0.5	0.77	0.63	0.83				0.79		0.72					
15:00							0.79	0.58	0.73							0.86
18:00								0.87	0.88	0.57		0.56				0.77
21:00									0.78	0.53						0.8
0:00									0.7	0.89		0.64			0.75	0.65
3:00						0.53			0.8							
6:00									0.54				0.56		0.51	1.2
Max	0.59	0.52	0.77	0.63	0.83	0.53	0.79	0.87	0.88	0.89	0.72	0.64	0.56	0.51	0.85	1.2
Ave	0.59	0.51	0.66	0.63	0.75	0.53	0.79	0.73	0.73	0.66	0.68	0.60	0.56	0.51	0.70	0.86
Min	0.59	0.5	0.54	0.63	0.67	0.53	0.79	0.58	0.54	0.53	0.64	0.56	0.56	0.51	0.51	0.65

		1999					2000						2001			
Time	Mar	Jun	Sep	Feb	Mar	July	Aug	Sep	Oct	Nov	Jan	Feb	Mar	Apr	May	May
9:00				0.56	0.63		0.5	0.64	0.65	0.61	0.59	0.50	0.54	1.00	0.55	0.67
12:00						0.71	0.66	0.87	0.86	0.63	0.57	0.60	0.73	1.00	0.58	
15:00			0.64					0.88			1.60				1.00	
18:00	0.61	0.57	0.8		0.98			0.85			1.30				0.97	
21:00	0.57	0.59	0.9		1.3			0.88			1.30				1.30	
0:00	0.53		0.83		1.2			0.88			1.00				1.10	
3:00	0.69		1.3		1.3			1.10			0.82				0.81	
6:00			0.74		0.77			0.82			0.67				0.68	
Max	0.69	0.59	1.3	0.56	1.3	0.71	0.66	1.1	0.86	0.63	1.6	0.6	0.73	1	1.3	0.67
Ave	0.60	0.58	0.87	0.56	1.03	0.71	0.58	0.87	0.76	0.62	0.98	0.55	0.64	1.00	0.87	0.67
Min	0.53	0.57	0.64	0.56	0.63	0.71	0.5	0.64	0.65	0.61	0.57	0.5	0.54	1	0.55	0.67

VOCS DETECTED AT THENEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXIC0 (AUG 1995 – MAY 2001)

1, 2-DICHLOROBENZENE (O-DCB)

	1996			1997			1999		2000	2001
Time	Feb	Sep	Oct	Jan	April	Dec	Feb	March	Sep	Jan
9:00	0.6	1.6	0.8	0.51			1			
12:00		1.4								
15:00									2.10	0.61
18:00										
21:00						1.3		1.1		1.00
0:00						0.65				0.51
3:00					0.78					
Max	0.6	1.6	0.8	0.51	0.78	1.3	1	1.1	2.1	1
Ave	0.60	1.50	0.80	0.51	0.78	0.98	1.00	1.10	2.10	0.71
Min	0.6	1.4	0.8	0.51	0.78	0.65	1	1.1	2.1	0.51

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

1,4-DICHLOROBENZENE (P-DCB)

	1995					1996								1997			
Time	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March	April
9:00	0.53	0.84	0.71	0.76	0.50	0.67	0.51	0.53	0.90	1.80		1.30	0.85	1.00	0.97	0.97	
12:00	0.63	1.00	1.20	1.20	0.50	0.65	0.68	0.51	1.00	1.50	0.93	1.70	0.77	0.81	1.30	1.30	
15:00																	
18:00																	
21:00																	0.51
0:00																	0.57
3:00																	0.90
6:00																	
Max	0.63	1.00	1.20	1.20	0.50	0.67	0.68	0.53	1.00	1.80	0.93	1.70	0.85	1.00	1.30	1.30	0.90
Ave	0.58	0.92	0.96	0.98	0.50	0.66	0.60	0.52	0.95	1.65	0.93	1.50	0.81	0.91	1.14	1.14	0.66
Min	0.53	0.84	0.71	0.76	0.50	0.65	0.51	0.51	0.90	1.50	0.93	1.30	0.77	0.81	0.97	0.97	0.51

	1997								1998									
Time	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	April	May	June	Jul	Aug	Sep	Oct	Nov	Dec
9:00	0.51	0.55	0.89	0.62	0.65	0.64	0.83	0.59	0.72	0.62	0.95	0.57	1.10	0.53	0.68	0.56	0.67	0.57
12:00			0.63	0.67	0.59	0.80	0.88	0.71	0.90	0.54	0.83	0.50	1.10		0.59	0.64	0.59	0.60
15:00	0.62		0.87		0.71			0.72				0.51						0.69
18:00		0.57	0.83		0.68			0.83				0.57			0.62			0.89
21:00		0.58			0.73			0.79				0.64			0.61			1.20
0:00		0.70			0.68			0.78				0.60			0.69			1.00
3:00	0.68	0.81			0.67			0.53				0.92			0.64			0.75
6:00								0.51				0.94			0.68			0.72
Max	0.68	0.81	0.89	0.67	0.73	0.80	0.88	0.83	0.90	0.62	0.95	0.94	1.10	0.53	0.69	0.64	0.67	1.20
Ave	0.60	0.64	0.81	0.65	0.67	0.72	0.86	0.68	0.81	0.58	0.89	0.66	1.10	0.53	0.64	0.60	0.63	0.80
Min	0.51	0.55	0.63	0.62	0.59	0.64	0.83	0.51	0.72	0.54	0.83	0.50	1.10	0.53	0.59	0.56	0.59	0.57

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

1,4-DICHLOROBENZENE (P-DCB) *(CONT)*

	1999							2000										2001					
Time	Jan	Feb	Mar	Jun	Jul	Aug	Sep	Feb	Mar	April	May	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Mar	Apr	May
9:00	0.65	0.75	0.52	0.86	0.63	0.79	0.69	1.10		0.56	0.63	0.85	0.87	0.91	1.00	0.96	0.90	1.10	0.76	0.74	1.10	0.74	0.89
12:00	0.60	0.52	0.50	1.20	0.69	0.91	0.82	0.79	0.54	0.66	0.84	0.96	0.91	1.00	1.30	0.94	1.20	0.76	0.84	0.93	1.10	0.62	0.66
15:00			0.60	1.10			1.00		0.69					3.60				1.40				1.30	
18:00			0.87	1.50			1.10		0.83					1.70				1.60				1.10	
21:00			1.00	1.40			0.89		1.00					1.20				1.70				1.70	
0:00			0.77	0.99			1.10		0.76					1.20				1.30				0.94	
3:00			0.62	0.90			1.10		0.77					1.10				1.10				0.95	
6:00			0.54	0.72			0.75		0.52					0.92				0.84				0.83	
Max	0.65	0.75	1.00	1.50	0.69	0.91	1.10	1.10	1.00	0.66	0.84	0.96	0.91	3.60	1.30	0.96	1.20	1.70	0.84	0.93	1.10	1.70	0.89
Ave	0.63	0.64	0.68	1.08	0.66	0.85	0.93	0.95	0.73	0.61	0.74	0.91	0.89	1.45	1.15	0.95	1.05	1.23	0.80	0.84	1.10	1.02	0.78
Min	0.60	0.52	0.50	0.72	0.63	0.79	0.69	0.79	0.52	0.56	0.63	0.85	0.87	0.91	1.00	0.94	0.90	0.76	0.76	0.74	1.10	0.62	0.66

BENZENE

	1997						1998	
Time	Feb	March	April	May	Jul	Dec	Jan	June
12:00	0.52	0.76					0.88	
15:00					0.61			
18:00						0.51		
21:00			0.51					
3:00			0.66	0.61				0.55
Max	0.52	0.76	0.66	0.61	0.61	0.51	0.88	0.55
Ave	0.52	0.76	0.59	0.61	0.61	0.51	0.88	0.55
Min	0.52	0.76	0.51	0.61	0.61	0.51	0.88	0.55

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

TOLUENE

Time	1995				1996								1997		
	Aug	Sep	Nov	Dec	Jan	Feb	June	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March
9:00		0.94	0.60		1.70	2.30	0.72	0.68	1.20	0.72	2.30	4.40	1.10	1.70	1.90
12:00	0.72	0.71	2.80	0.81	1.40	2.20		0.71	1.90	0.93	2.70	2.90	1.50	2.80	3.90
15:00															
18:00															
21:00															
0:00															
3:00															
6:00															
Max	0.72	0.94	2.80	0.81	1.70	2.30	0.72	0.71	1.90	0.93	2.70	4.40	1.50	2.80	3.90
Ave	0.72	0.83	1.70	0.81	1.55	2.25	0.72	0.70	1.55	0.83	2.50	3.65	1.30	2.25	2.90
Min	0.72	0.71	0.60	0.81	1.40	2.20	0.72	0.68	1.20	0.72	2.30	2.90	1.10	1.70	1.90

Time	1997									1998					
	April	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March	April	May	June
9:00		1.20	1.50	1.10	1.30	1.70		2.30		1.00		0.74	0.54	3.30	1.20
12:00	1.50				1.20	0.81	2.20	2.10		4.10	1.10	0.80			1.50
15:00	1.90	2.30		2.10		1.60			3.00			1.20			1.10
18:00	1.40			1.60		1.50			2.80						1.50
21:00	2.40	1.00				1.70			2.50			1.20			1.10
0:00	2.00	0.72	1.80			1.10			2.50			0.89			1.80
3:00	2.70	4.10	1.60			1.90						2.30			3.90
6:00	1.30					1.50			0.63			0.62			3.00
Max	2.70	4.10	1.80	2.10	1.30	1.90	2.20	2.30	3.00	4.10	1.10	2.30	0.54	3.30	3.90
Ave	1.89	1.86	1.63	1.60	1.25	1.48	2.20	2.20	2.29	2.55	1.10	1.11	0.54	3.30	1.89
Min	1.30	0.72	1.50	1.10	1.20	0.81	2.20	2.10	0.63	1.00	1.10	0.62	0.54	3.30	1.10

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

TOLUENE (*CONT)*

	1998				1999						2000				
Time	Jul	Aug	Sep	Dec	Jan	Feb	March	Jun	Aug	Sep	Feb	March	April	May	July
9:00	1.90	0.54	0.58	0.62	1.30	0.76		1.20	0.93	0.66	1.60		0.95	0.88	0.96
12:00	1.10			0.65	1.40	0.65		1.10	1.10	0.63	1.10		0.68	0.91	0.98
15:00				1.70			0.70	2.00		0.78					
18:00				2.60			1.90	4.70		1.20					
21:00			0.73	1.80			1.40	3.20		1.20		1.30			
0:00				1.50			0.82	1.40		1.60		0.62			
3:00				1.60			0.66	1.30		2.00		0.86			
6:00			0.84	0.93				0.93		1.90					
Max	1.90	0.54	0.84	2.60	1.40	0.76	1.90	4.70	1.10	2.00	1.60	1.30	0.95	0.91	0.98
Ave	1.50	0.54	0.72	1.43	1.35	0.71	1.10	1.98	1.02	1.25	1.35	0.93	0.82	0.90	0.97
Min	1.10	0.54	0.58	0.62	1.30	0.65	0.66	0.93	0.93	0.63	1.10	0.62	0.68	0.88	0.96

	2000				2001					
Time	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Mar	Apr	May
9:00	0.78	1.10	1.10	0.90	1.50	1.10	1.40	2.60	0.53	0.82
12:00	0.71	1.80	1.10	3.30	1.10	1.10	3.00	2.20	2.40	
15:00	2.00				3.20				7.80	
18:00	1.20				3.20				4.90	
21:00	3.40				8.90				25.00	
0:00	1.90				2.60				3.10	
3:00	1.00				2.20				2.50	
6:00	1.80				1.40				2.10	
Max	3.40	1.80	1.10	3.30	8.90	1.10	3.00	2.60	25.00	0.82
Ave	1.60	1.45	1.10	2.10	3.01	1.10	2.20	2.40	6.04	0.82
Min	0.71	1.10	1.10	0.90	1.10	1.10	1.40	2.20	0.53	0.82

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

M,P-XYLENES

Time	1995		1996						1997							
	Sep	Nov	Jan	Feb	Sep	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Jul	Aug
9:00	0.74		1.00	2.00	0.76	0.51	1.50	1.10	0.70	1.20	1.30	0.98	1.00	0.90	0.53	0.78
12:00	0.54	0.75	0.74	2.00	1.50	0.64	2.30	0.88	1.30	2.00	2.60	1.10				0.86
15:00												1.50	2.10		1.40	
18:00												0.97			1.10	
21:00												1.60				
0:00												1.30		1.40		
3:00												1.90	1.80	1.70		
6:00												0.77				
Max	0.74	0.75	1.00	2.00	1.50	0.64	2.30	1.10	1.30	2.00	2.60	1.90	2.10	1.70	1.40	0.86
Ave	0.64	0.75	0.87	2.00	1.13	0.58	1.90	0.99	1.00	1.60	1.95	1.27	1.63	1.33	1.01	0.82
Min	0.54	0.75	0.74	2.00	0.76	0.51	1.50	0.88	0.70	1.20	1.30	0.77	1.00	0.90	0.53	0.78

Time	1997				1998								1999			
	Sep	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Jul	Dec	Jan	March	Jun	Sep
9:00	0.76		1.40		0.91			0.64	0.86		0.79		1.50			
12:00	0.57	1.10	1.60		2.90	0.75					0.62		1.50			
15:00	0.73			1.00								0.62		0.56	0.76	
18:00	0.77			1.50			0.68					0.68		0.62	0.73	0.64
21:00	0.75			0.76			0.54					0.77			1.70	0.67
0:00	0.56			1.20								0.64			0.58	0.60
3:00	0.94						0.93			1.30		0.68			0.54	0.57
6:00	0.55									0.86						
Max	0.94	1.10	1.60	1.50	2.90	0.75	0.93	0.64	0.86	1.30	0.79	0.77	1.50	0.62	1.70	0.67
Ave	0.70	1.10	1.50	1.12	1.91	0.75	0.72	0.64	0.86	1.08	0.71	0.68	1.50	0.59	0.86	0.62
Min	0.55	1.10	1.40	0.76	0.91	0.75	0.54	0.64	0.86	0.86	0.62	0.62	1.50	0.56	0.54	0.57

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

M,P-XYLENES *(CONT)*

	2000						2001				
Time	Feb	July	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Mar	Apr
9:00	0.86	0.61		1.00	0.50		1.40	0.83	0.85	1.30	
12:00		0.77		1.50		0.80	0.87	0.85	1.00	0.96	
15:00							1.80				0.74
18:00							1.10				0.84
21:00			0.72				2.50				1.60
0:00			1.10				1.50				
3:00			0.61				1.40				
6:00							0.86				
Max	0.86	0.77	1.10	1.50	0.50	0.80	2.50	0.85	1.00	1.30	1.60
Ave	0.86	0.69	0.81	1.25	0.50	0.80	1.43	0.84	0.93	1.13	1.06
Min	0.86	0.61	0.61	1.00	0.50	0.80	0.86	0.83	0.85	0.96	0.74

O-XYLENE

	1996					1997										
Time	Jan	Feb	Sep	Nov	Dec	Jan	Feb	March	April	May	June	Jul	Sep	Oct	Nov	Dec
9:00	0.53	1.00		0.74	0.58		0.61	0.69	0.52	0.72	0.56				0.70	
12:00		1.00	0.66	1.10		0.74	1.10	1.40	0.66					0.74	0.87	0.53
15:00									0.91	1.40		0.94				0.53
18:00									0.55			0.76				0.86
21:00									0.90							0.51
0:00									0.77		0.88					0.78
3:00									1.10	1.00	1.00		0.51			
6:00																
Max	0.53	1.00	0.66	1.10	0.58	0.74	1.10	1.40	1.10	1.40	1.00	0.94	0.51	0.74	0.87	0.86
Ave	0.53	1.00	0.66	0.92	0.58	0.74	0.86	1.05	0.77	1.04	0.81	0.85	0.51	0.74	0.79	0.64
Min	0.53	1.00	0.66	0.74	0.58	0.74	0.61	0.69	0.52	0.72	0.56	0.76	0.51	0.74	0.70	0.51

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

O-XYLENE *(CONT)*

	1998						**1999**		2000			2001				
Time	Jan	Feb	March	April	May	June	Jan	Jun	Sep	Oct	Dec	Jan	Feb	Mar	Mar	Apr
9:00	0.58			0.56	0.52		0.82					0.65	0.50	0.50	0.70	
12:00	1.60	0.67					0.78			0.69	1.50			0.59	0.64	
15:00							0.78			0.69	1.50	0.89				
18:00							0.78			0.69	1.50					0.51
21:00								0.90				1.20				0.89
0:00									0.50			0.71				
3:00			0.53			0.78			0.50			0.64				
6:00						0.62										
Max	1.60	0.67	0.53	0.56	0.52	0.78	0.82	0.90	0.50	0.69	1.50	1.20	0.50	0.59	0.70	0.89
Ave	1.09	0.67	0.53	0.56	0.52	0.70	0.79	0.90	0.50	0.69	1.50	0.82	0.50	0.55	0.67	0.70
Min	0.58	0.67	0.53	0.56	0.52	0.62	0.78	0.90	0.50	0.69	1.50	0.64	0.50	0.50	0.64	0.51

1,2,4-TRIMETHYLBENZENE

	1995	1996					**1997**									
Time	Nov	Jan	Feb	Sep	Nov	Dec	Jan	Feb	March	April	May	June	Jul	Sep	Nov	Dec
9:00		0.62	1.00	0.52	0.76	0.69		0.70	0.98	0.54					0.75	
12:00	0.59	0.56	0.94	0.78	1.70	0.56	0.80	1.70	2.00						0.90	
15:00										0.97	0.97		0.78			0.52
18:00										0.54			0.70			0.95
21:00										0.85						0.52
0:00										0.83		0.89				0.72
3;00											1.10	1.00		0.55		
6:00																
Max	0.59	0.62	1.00	0.78	1.70	0.69	0.80	1.70	2.00	0.97	1.10	1.00	0.78	0.55	0.90	0.95
Ave	0.59	0.59	0.97	0.65	1.23	0.63	0.80	1.20	1.49	0.75	1.04	0.95	0.74	0.55	0.83	0.68
Min	0.59	0.56	0.94	0.52	0.76	0.56	0.80	0.70	0.98	0.54	0.97	0.89	0.70	0.55	0.75	0.52

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

1,2,4-TRIMETHYLBENZENE *(CONT)*

	1998			**1999**	2000				2001			
Time	Jan	June	Jul	Jun	Feb	March	Sep	Oct	Jan	Feb	Mar	Apr
9:00	0.50		0.63		0.69				0.55	1.20	1.10	
12:00	1.80		0.50					0.70		0.61	0.65	
15:00				0.59					1.50			0.61
18:00				0.55			0.76		1.90			0.68
21:00				1.60		0.54	0.56		1.90			1.20
0:00							0.68		0.94			
3;00		0.85					0.68		0.72			
6:00		1.10										
Max	1.80	1.10	0.63	1.60	0.69	0.54	0.76	0.70	1.90	1.20	1.10	1.20
Ave	1.15	0.98	0.57	0.91	0.69	0.54	0.67	0.70	1.25	0.91	0.88	0.83
Min	0.50	0.85	0.50	0.55	0.69	0.54	0.56	0.70	0.55	0.61	0.65	0.61

P-ISOPROPYLTOLUENE (P-CYMENE)

	1995	1996		1997				**1999**			2000						2001		
Time	Nov	Nov	Dec	Feb	March	Nov	Dec	March	Jun	Sep	Feb	March	July	Sep	Oct	Dec	Jan	Mar	Apr
9:00		0.64	0.72		0.71	1.40					0.59		0.50	1.80	0.75		1.00	0.59	
12:00	0.58	0.98	0.56	0.80	1.10	2.50								0.92	0.87	1.40	0.62		
15:00							1.00		0.59					0.74			1.10		1.00
18:00							0.79	0.52	1.40	0.58				0.77			1.20		0.69
21:00							0.59		0.90	0.63		0.57		0.68			1.80		1.90
0:00							0.70		0.61	0.55				0.92			1.00		0.51
3:00									0.52					0.69			0.71		0.53
6:00														0.73			0.61		
Max	0.58	0.98	0.72	0.80	1.10	2.50	1.00	0.52	1.40	0.63	0.59	0.57	0.50	1.80	0.87	1.40	1.80	0.59	1.90
Ave	0.58	0.81	0.64	0.80	0.91	1.95	0.77	0.52	0.80	0.59	0.59	0.57	0.50	0.91	0.81	1.40	1.01	0.59	0.93
Min	0.58	0.64	0.56	0.80	0.71	1.40	0.59	0.52	0.52	0.55	0.59	0.57	0.50	0.68	0.75	1.40	0.61	0.59	0.51

VOCS DETECTED AT THENEW RIVER
INTERNATIONAL BOUDARY LINE IN CALEXIC0
(AUG 1995 – MAY 2001)

NAPHTHALENE

	1996	1997				1998	2000	2001	
Time	Nov	Feb	Mar	May	June	Jan	Dec	Jan	Feb
9:00									0.94
12:00	0.59	0.72	0.80			0.61	0.60		
15:00								0.54	
18:00								0.75	
21:00								0.71	
3:00				0.54	0.54				
Max	0.59	0.72	0.80	0.54	0.54	0.61	0.60	0.75	0.94
Ave	0.59	0.72	0.80	0.54	0.54	0.61	0.60	0.67	0.94
Min	0.59	0.72	0.80	0.54	0.54	0.61	0.60	0.54	0.94

METHYLENE CHLORIDE (DICHLOROMETHANE)

	1995	1996		1999	2000	2001
Time	Oct	Sep	Nov	Sep	Sep	Apr
9:00	6.00					
12:00	2.30	0.51	0.82			
18:00				0.59		
21:00						0.51
3:00					0.63	
Max	6.00	0.51	0.82	0.59	0.63	0.51
Ave	4.15	0.51	0.82	0.59	0.63	0.51
Min	2.30	0.51	0.82	0.59	0.63	0.51

VOCS DETECTED AT THENEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXIC0 (AUG 1995 – MAY 2001)

METHYL TER-BUTYL ETHER (MTBE)

	1997		1998			**1999**		2000	
Time	Sep	Nov	Jan	Nov	Dec	Feb	Jun	April	Nov
9:00		0.74		0.52		0.58		1.00	0.51
12:00		3.10	0.54						
15:00							0.56		
18:00	0.58								
21:00					0.63				
3:00							0.72		
Max	0.58	3.10	0.54	0.52	0.63	0.58	0.72	1.00	0.51
Ave	0.58	1.92	0.54	0.52	0.63	0.58	0.64	1.00	0.51
Min	0.58	0.74	0.54	0.52	0.63	0.58	0.56	1.00	0.51

ETHYL BENZENE

	1996		1997		1998	2001
Time	Feb	Nov	March	April	Jan	Jan
12:00	0.50	0.50	0.72		0.73	
18:00						0.55
21:00						0.62
3:00				0.53		
Max	0.50	0.50	0.72	0.53	0.73	0.62
Ave	0.50	0.50	0.72	0.53	0.73	0.59
Min	0.50	0.50	0.72	0.53	0.73	0.55

VOCS DETECTED AT THENEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXIC0 (AUG 1995 – MAY 2001)

TETRACHLOROETHYLENE (PCE)

Time	1995	1997	1998	2000
	Nov	March	Nov	Sep
9:00			0.84	
12:00	1.10	0.57		
15:00				2.20
18:00				
Max	1.10	0.57	0.84	2.20
Ave	1.10	0.57	0.84	2.20
Min	1.10	0.57	0.84	2.20

TRICHLOROFLUOROMETHANE (FREON 11)

Time	1996		1997	1998	2000
	Dec	April	June	March	Aug
9:00	18				1.10
12:00	14	0.66	3.2		1.40
15:00					
18:00				1.6	
3:00		1.1			
Max	18	1.1	3.2	1.6	1.4
Ave	16	0.88	3.2	1.6	1.25
Min	14	0.66	3.2	1.6	1.1

VOCS DETECTED AT THENEW RIVER INTERNATIONAL BOUDARY LINE IN CALEXIC0 (AUG 1995 – MAY 2001)

1,3,5-TRIMETHYLBENZENE

	1996	1997		1998	2001
Time	Nov	Feb	March	Jan	Jan
12:00	0.55	0.54	0.61	0.50	
18:00					0.52
21:00					0.53
Max	0.55	0.54	0.61	0.50	0.53
Ave	0.55	0.54	0.61	0.50	0.53
Min	0.55	0.54	0.61	0.50	0.52

Vinyl Chloride (VC) and Methyl Ethyl Ketone were detected at 2.30 ug/l and 2.4 ug/l during the months of January and April 2001, respectively.

Attachment Five

(Binational Observation Tour of New River in Mexicali-Monthly Reports)

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/~rwqcb7
73-720 Fred Waring Drive, Suite 100, Palm Desert, California 92260
Phone (760) 346-7491 · FAX (760) 341-6820

Gray Davis
Governor

SEP 2 8 2001

Celeste Cantu, Executive Director
SWRCB - Executive Office
P.O. Box 100
Sacramento, CA 95814

RE: NEW RIVER MONTHLY OBSERVATION TOUR STAFF REPORTS

Enclosed are the staff reports for the months of January through July 2001. Apparently, these reports were not sent to you earlier. We apologize for the delay.

PHIL GRUENBERG
Executive Officer

DW/kg

Enc.: As stated above

cc: Jose Angel, CRWQCB-7
Doug Wylie, CRWQCB-7
Jose Figueroa-Acevedo, CRWQCB-7

File: IP GC

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

February 6, 2001

To: Jose L. Angel, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

Subject: Binational Observation Tour of the New River in the Mexicali area

On Thursday, January 25, 2001, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. The following is a summary of my observations.

TULA WEST DRAIN (DRAIN)

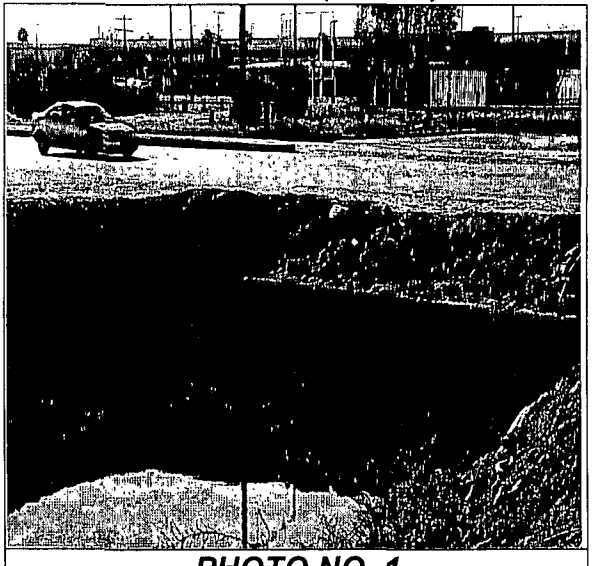


PHOTO NO. 1

PHOTO NO. 2

The Drain's watercolor still varies from a dark green color in the vicinity of the San Luis Hwy to a milky pale color in the northern part of the Drain (Photo No. 1 and 2). Staff from the Commision Nacional del Agua (CNA) reported that the results of a water sample collected during the December's observation tour revealed that vegetal grease is suspected as the cause of the water discoloration in the northern part of the drain. Staff from CNA also stated that BIMBO, a company engaged in the production of different kinds of breads, cakes, cookies, candies, and chocolates, is suspected as the discharge source. A mild acrid odor is prevalent along the entire length of the Drain in this industrial/residential area. The Drain's channel is still overwhelmed with vegetation.

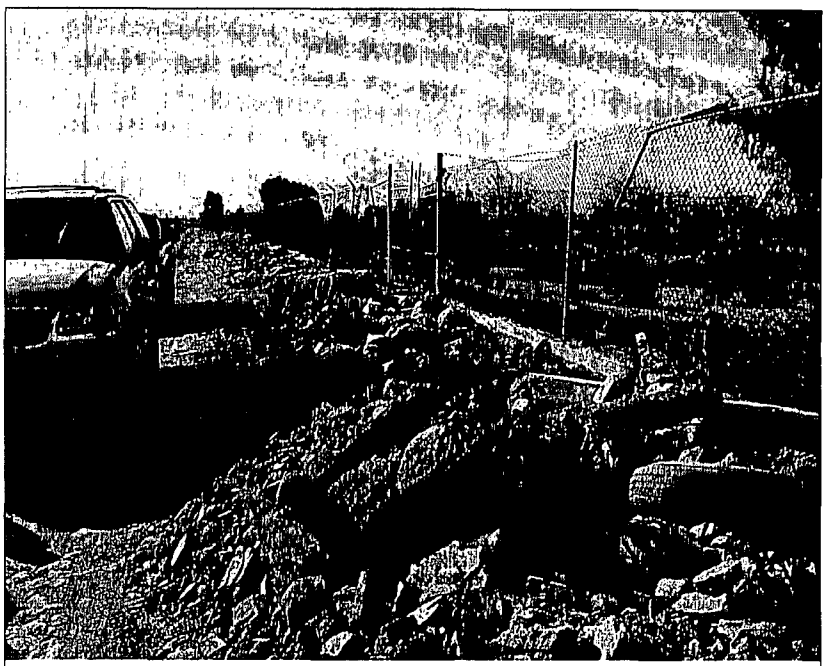


PHOTO NO. 3

The slopes and banks of the Drain are still overwhelmed with huge stockpiles of municipal waste, tires, and dredging spoils previously removed from the Drain (Photo No. 3). Also, the drain bank adjacent to the residential area is used as a local trash dumping spot.

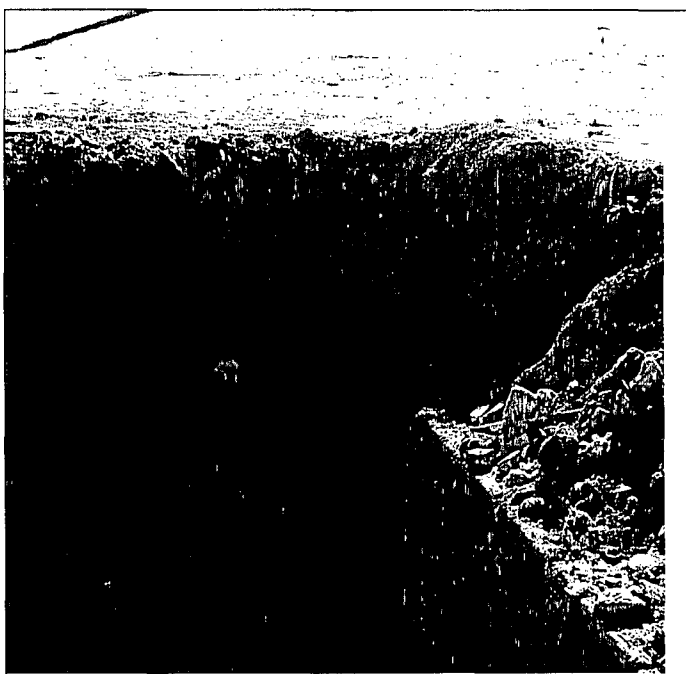


PHOTO NO. 4

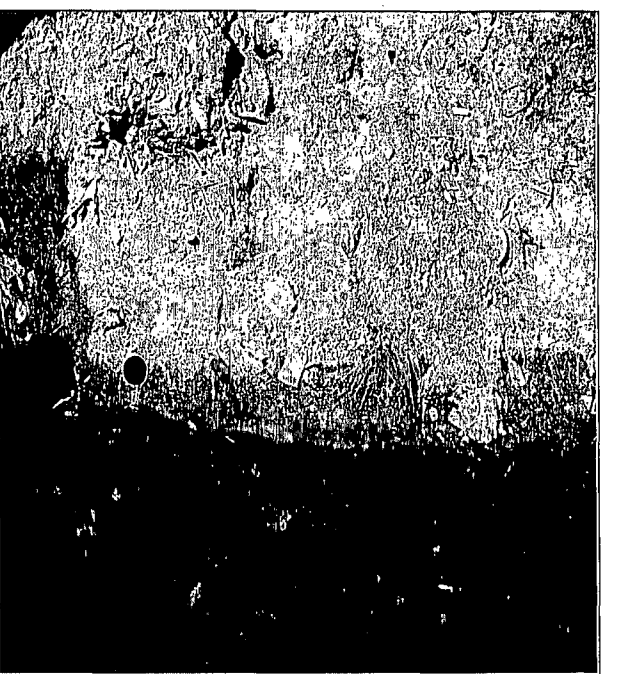


PHOTO NO. 5

Two PVC pipes located few feet north from the San Luis Hwy (opposite from each other one on the right and one on the left side of the Drain) were observed to discharge an estimated 2 liter per-second (l/sec) of clear-foamy wastewater into the Drain (Photos No. 4 and No. 5).

QUIPAC & HYDROGENADORA NACIONAL

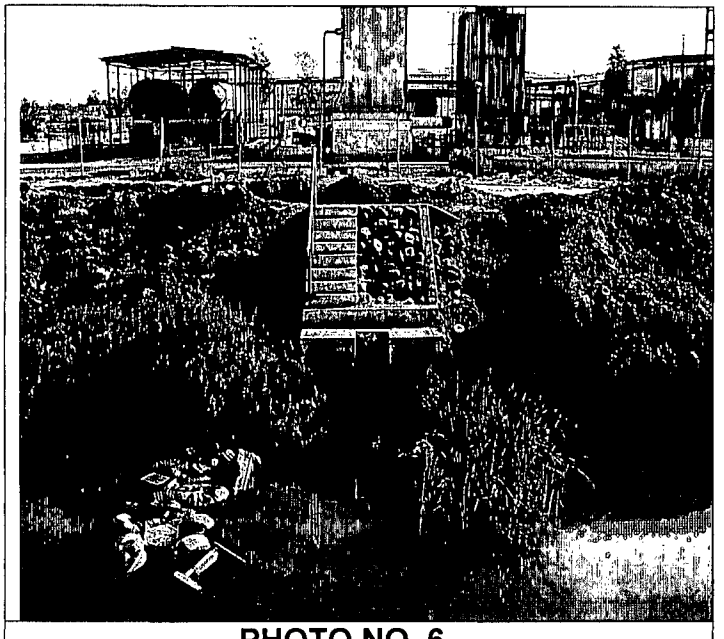


PHOTO NO. 6

No discharges from these locations into the drain were observed. Staff from CNA reported that the facility filled bankruptcy and, at least for the current fiscal year, is officially closed. In addition, Staff from CNA also reported that their wastewater discharge permit expired during the month of October 2000 (Photos No. 6).

VIDRIERA MEXICALI (VITRO-MEX)

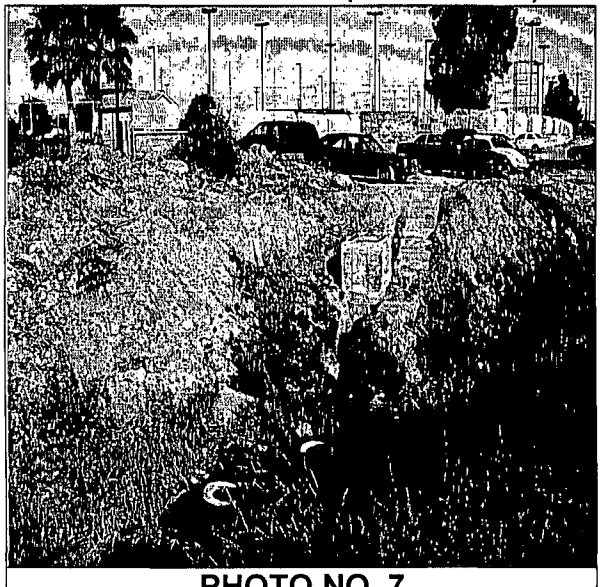


PHOTO NO. 7

PHOTO NO. 8

A trickling discharge of a "black substance" was still observed from one of the plant outfalls into the Drain. In addition, one PVC pipe was discharging an estimated 3 l/sec of clear wastewater into the Drain (Photos No. 7 and No. 8). The drain is still overwhelmed with vegetation.

CUCAPA INDUSTRIAL PARK

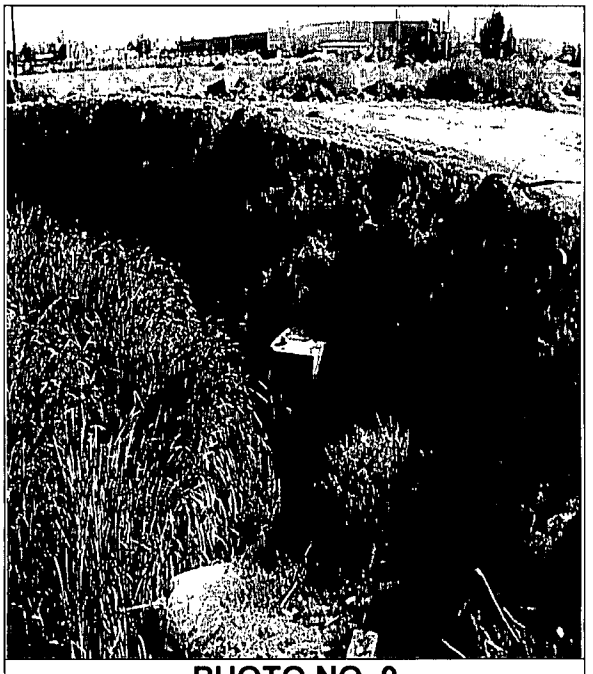


PHOTO NO. 9

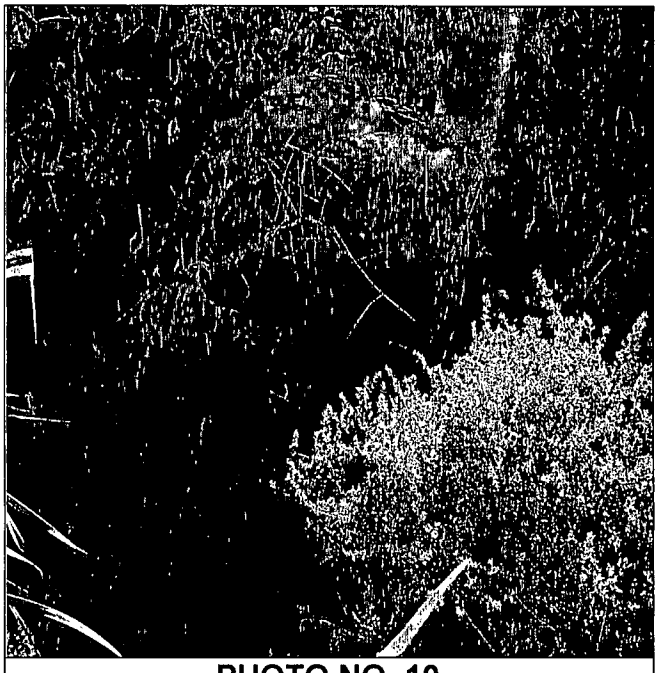


PHOTO NO. 10

No discharge was observed from these industrial park outlets (Photos No. 9 and 10).

PUMP STATIONS:

GONZALEZ - ORTEGA PUMP STATION

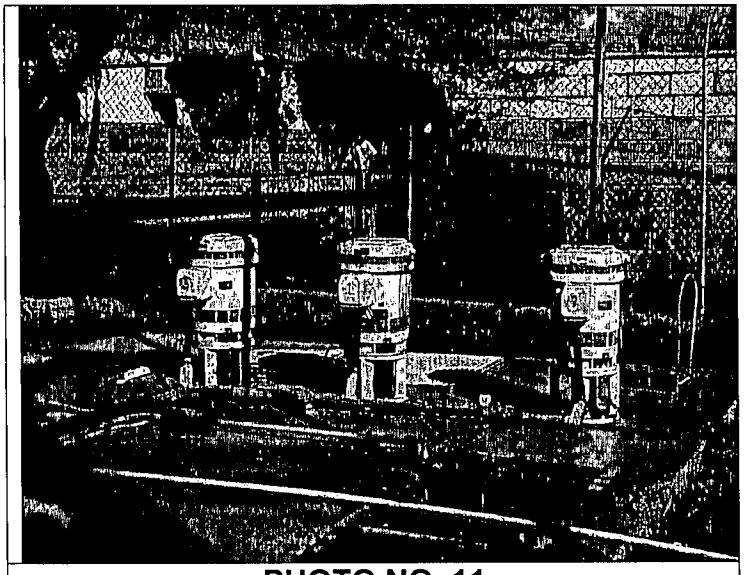


PHOTO NO. 11

The Gonzales-Ortega Pump station is in apparent good condition and fully operational (Photo No. 11). The wastewater flow into this facility is minimal; reportedly, this pumping station is currently used only to lift domestic wastewater generated in the surrounding areas to the pumping station to the Gonzales Ortega lagoons. The rest of the wastewater is apparently diverted into the Mexicali drain.

PUMP STATION NO. 1

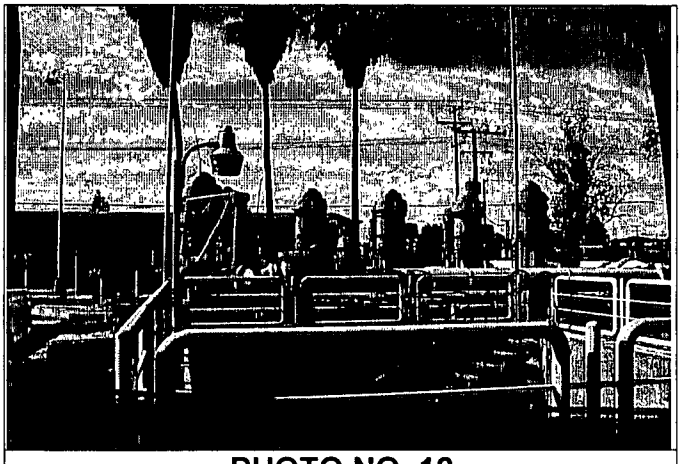


PHOTO NO. 12

Pump station No. 1 looks clean and well maintained. The facility was reported to be fully operational during the observation tour (Photo No. 12).

PUMP STATION NO. 2

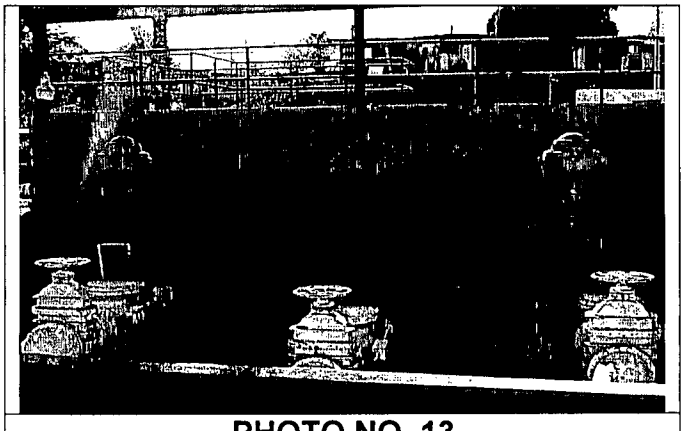


PHOTO NO. 13

Pump station No. 2 look clean and well maintained, however the facility was inoperable during the observation tour and reportedly it would take CESPM a minimum of two weeks to fully operate this facility (Photo No. 13).

PUMP STATION NO. 3

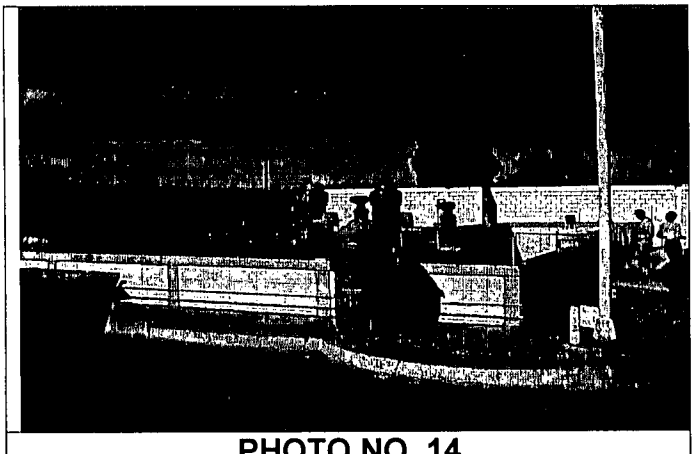


PHOTO NO. 14

Pump station No. 3 is in apparent good condition but partially operational. One of the pumps is being repaired (Photo No. 14). The facilities look clean and well maintained.

PUMP STATION NO. 4

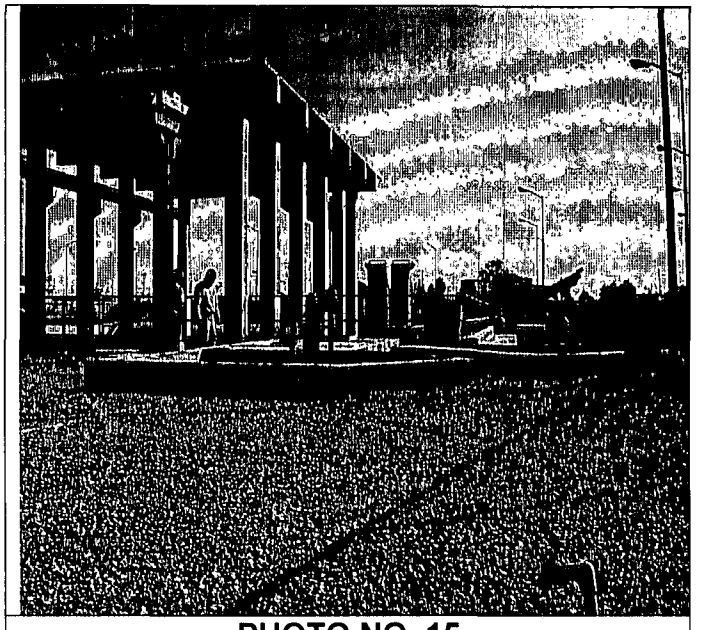


PHOTO NO. 15

The construction of pump station No. 4 is almost complete (Photo No. 15).

PUMP STATION NO. 5

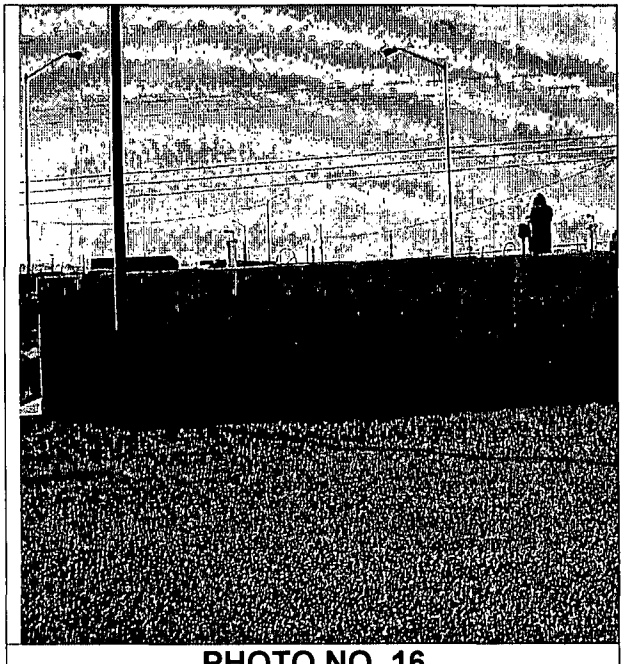


PHOTO NO. 16

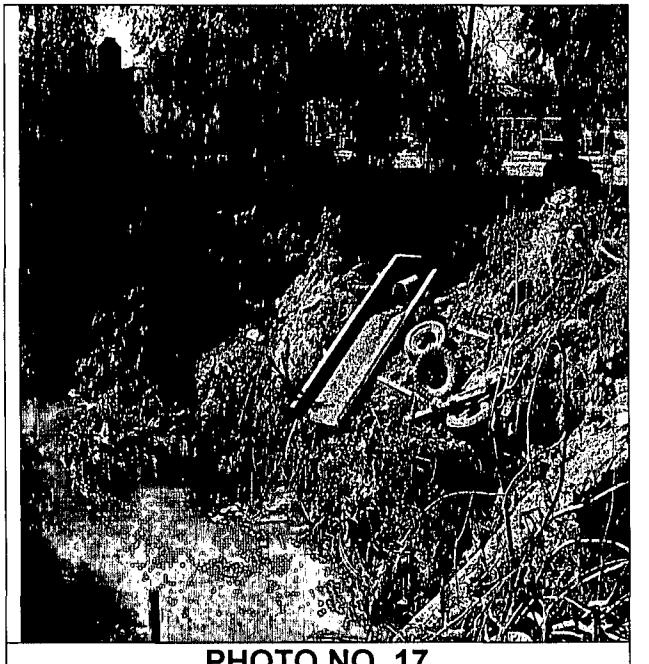


PHOTO NO. 17

Pump station No. 5 looks clean and well maintained. Only one pump was operable during this observation tour. In addition, the plant currently discharges an estimated 15 l/sec into the New River via the Mexicali Drain, at a point just above the

confluence of the Mexicali Drain and New River, east of Lake Xochimilco (Photos No. 16 and 17).

WASTEWATER TREATMENT FACILITIES:

GONZALEZ - ORTEGA LAGOON

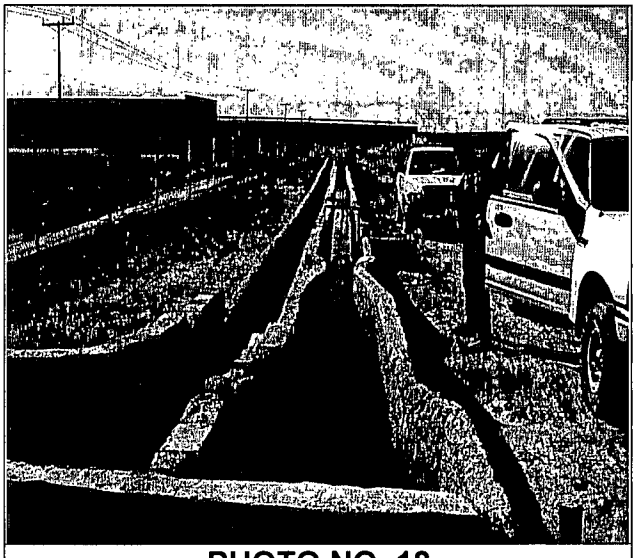


PHOTO NO. 18

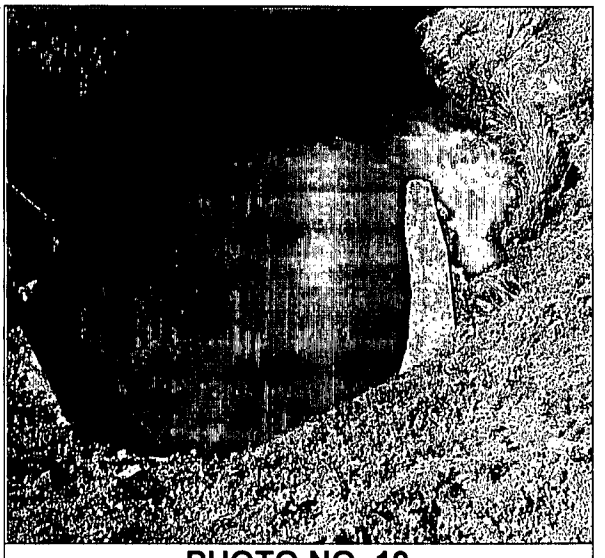


PHOTO NO. 19

The flow into the Gonzales-Ortega lagoons is minimal. Also, the effluent from the lagoons was observed to be significantly different from the effluent normally observed from this facility. The effluent from the lagoons is so insignificant that provides the appearance that the effluent wastewater is stagnated. A mild-strong septic odor is prevalent in this facility. The wastewater color is dark green (Photos No. 18 and No. 19).

ZARAGOZA LAGOONS

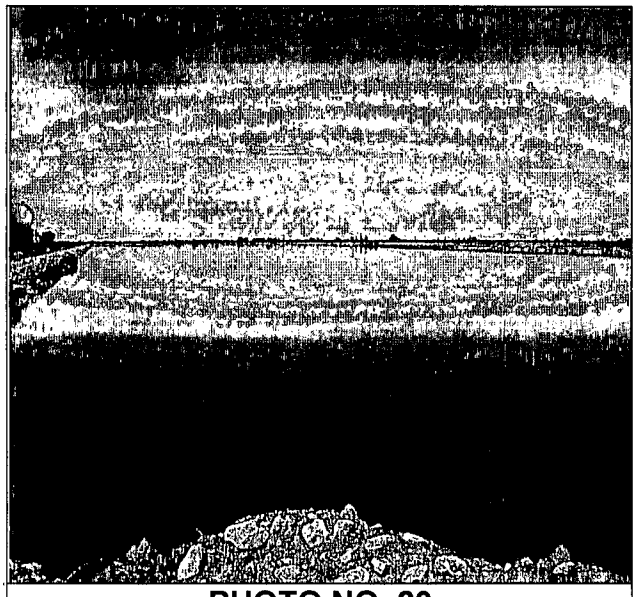


PHOTO NO. 20

PHOTO NO. 21

The watercolor of the primary treatment lagoons varies from dark to a grayish color. Watercolor in the secondary treatment lagoons varies in color from brown greenish to olive green. The lagoons are well maintained and with the exception of one of the primary anaerobic lagoons all others lagoons are in service and fully operational. The effluent from the lagoons is foamy. The wastewater color is olive green (Photos No. 20 and No. 21).

NEW RIVER DISCHARGES

PHOTO NO. 22

KEN/MEX PLANT

A trickle of water flow was being discharged into the drain. The drain is covered with piles of domestic waste (Photo No. 22).

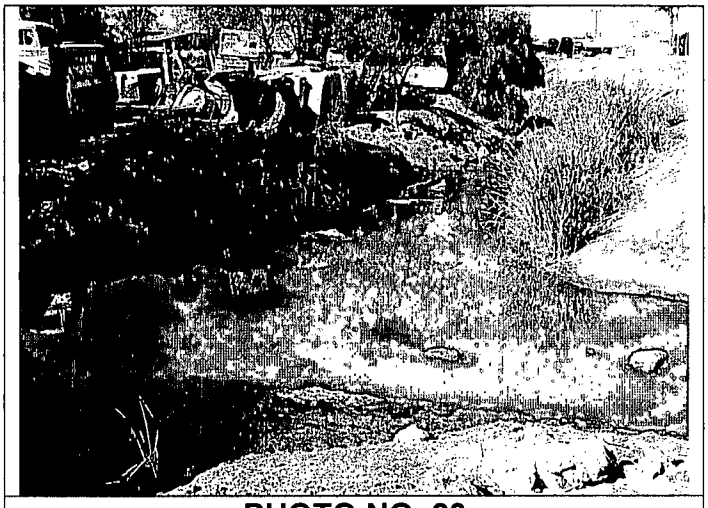


PHOTO NO. 23

NUTRIMEX BYPASS

An estimated flow of 80 l/sec of raw sewage was being discharged from the Nutrimex Collector into the Mexicali Drain. The watercolor in the drain was dark green (Photo No. 23).

PHOTO NO. 24

48-INCH PIPE, PRINCIPAL COLLECTOR

An estimated flow of 80 l/sec of raw sewage was being discharged from the 48-inch principal collector into the Mexicali drain. The watercolor here was dark green (Photo No. 24).

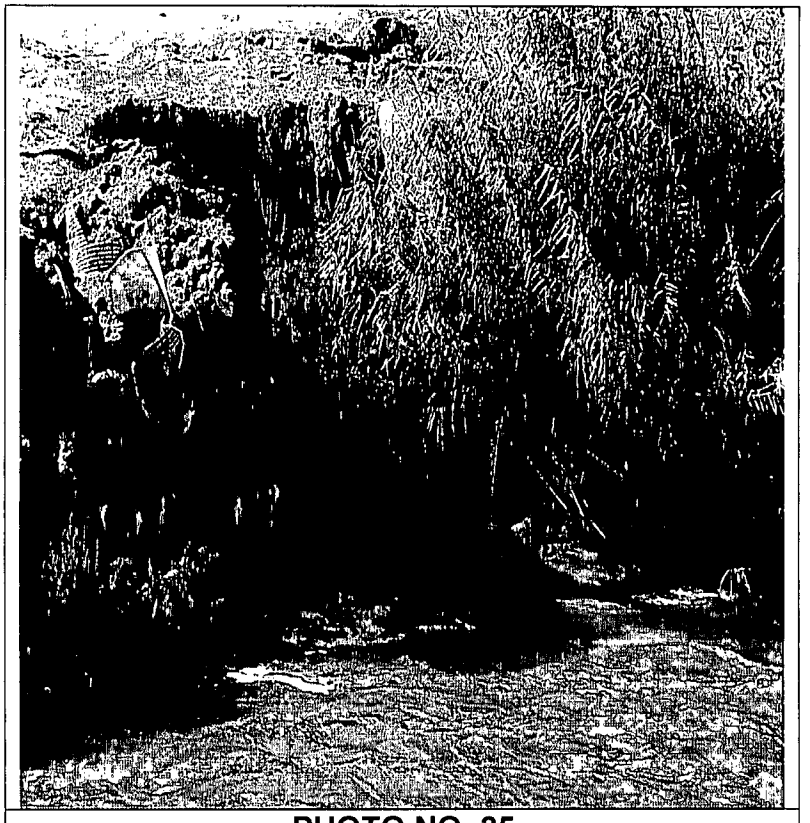


PHOTO NO. 25

LEFT BANK INTERCEPTOR LINE

An estimated flow of 25 l/sec of raw sewage was being discharged from the left bank interceptor line, under the Reforma Bridge, into the New River. The watercolor here was dark green and foamy (Photo No. 25).

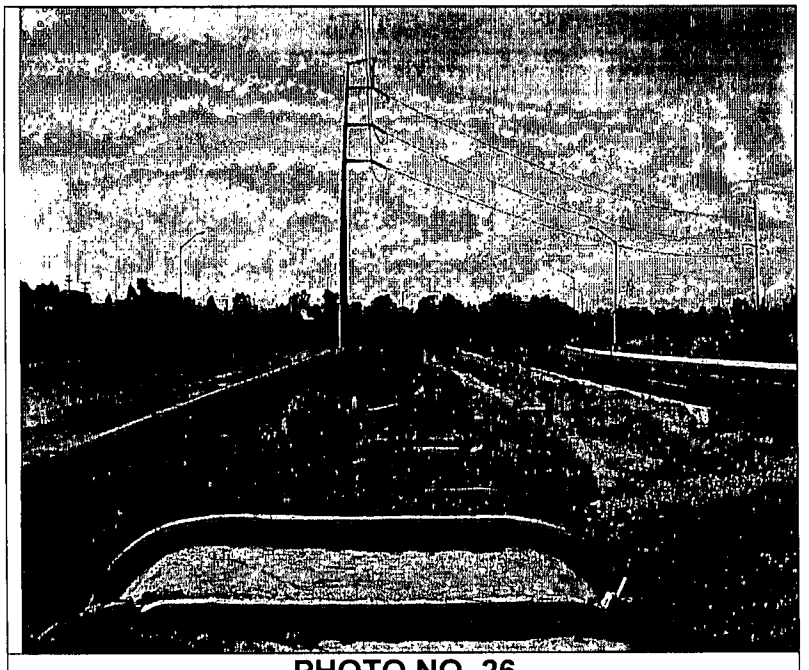


PHOTO NO. 26

DRAIN 134

All of the discharges to Drain 134 are no longer visible as a result of the encasement of the New River and the Drain (Photo No. 26).

RECOMMENDATIONS/COMMENTS

As stated in previous reports:

The encasement of the New River continues towards Lake Xochimilco. It is imperative to implement a water quality monitoring program to monitor illegal discharges and bypasses of sewage into the New River.

A request for local authorities to implement punitive measures to reduce the problem associated with the disposal of solid wastes and potential hazardous materials along the drain's banks and in the closed dumpsites is strongly recommended. This problem should be elevated for discussion and potential solutions to the Binational Technical Committee.

Winston H. Hickox
Secretary for
Environmental
Protection

February 28, 2001

To: Jose L. Angel, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

Subject: Binational Observation Tour of the New River in the Mexicali area

On Thursday, February 22, 2001, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. The following is a summary of my observations.

TULA WEST DRAIN (DRAIN)

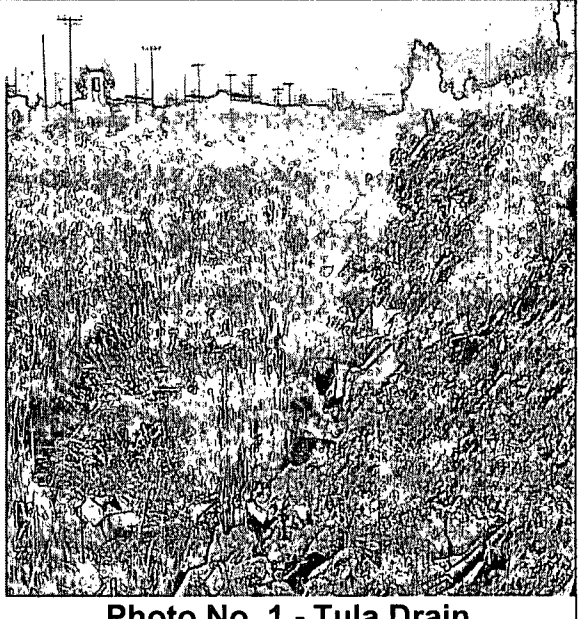


Photo No. 1 - Tula Drain

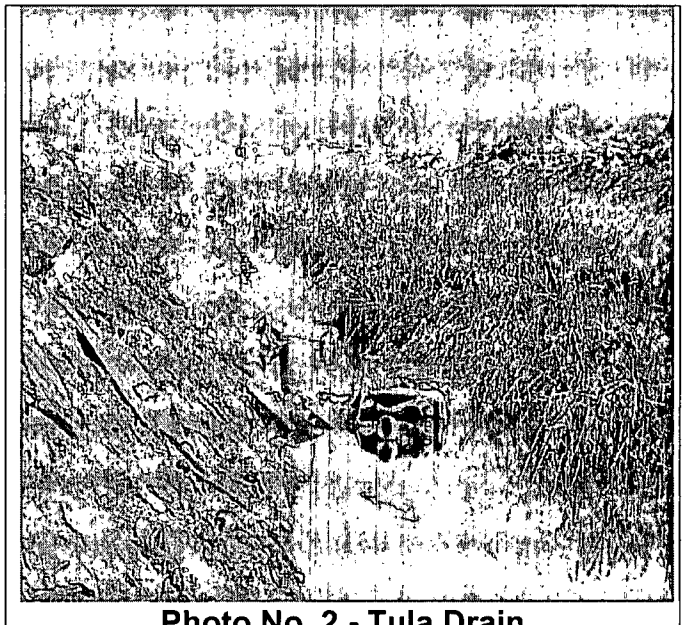


Photo No. 2 - Tula Drain

The Drain's watercolor varied from a dark green color in the vicinity of the San Luis Hwy to a milky pale color in the northern part of the Drain. A mild acrid odor is prevalent along the entire length of the Drain in this industrial/residential area. The Drain's slopes, banks and its channel was observed to be overwhelmed with vegetation and huge stockpiles of municipal waste, tires, and dredging spoils previously removed from the Drain (Photo Nos. 1, 2, 3 and 4).

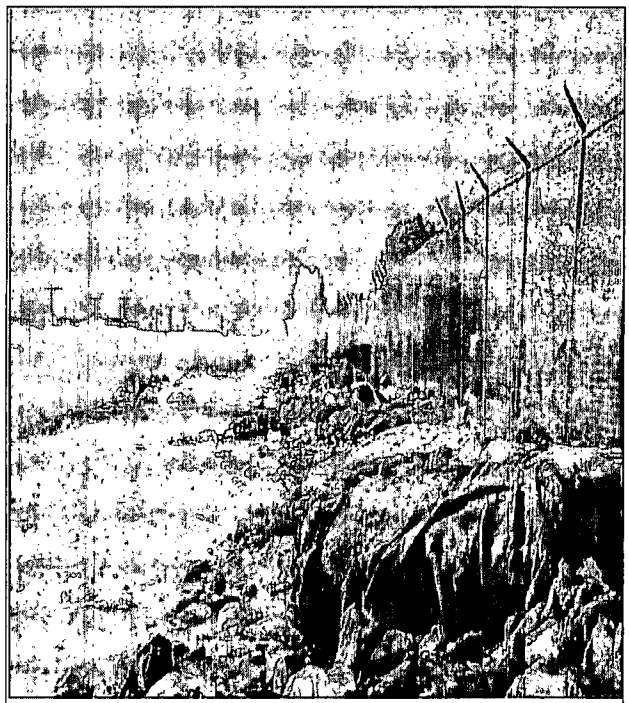


Photo No. 3 - Tula Drain

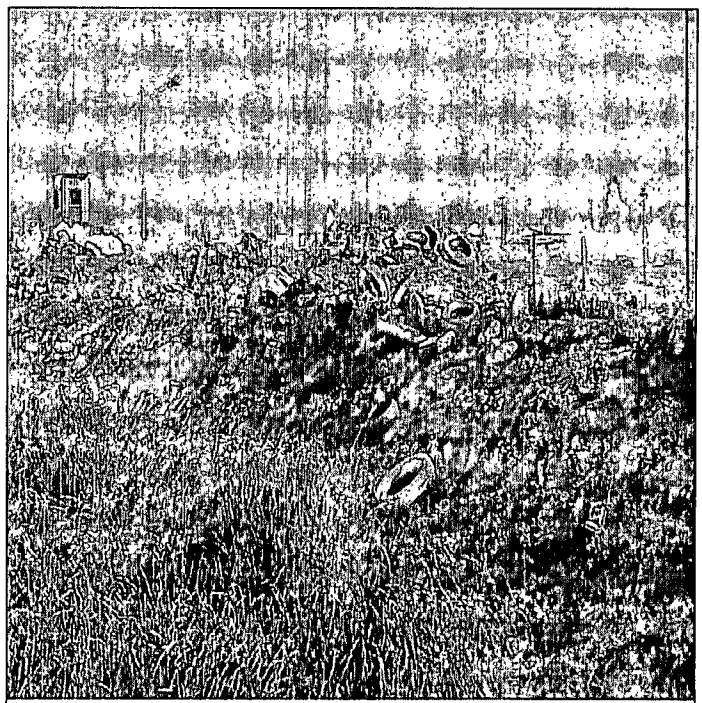


Photo No. 4 - Tula Drain

Two PVC pipes running parallel north from the San Luis Highway (opposite from each other one on the right and one on the left side of the Drain) continue discharging an estimated 2 liter per-second (l/sec) of clear-foamy wastewater into the Drain (Photos No. 5 and No. 6).

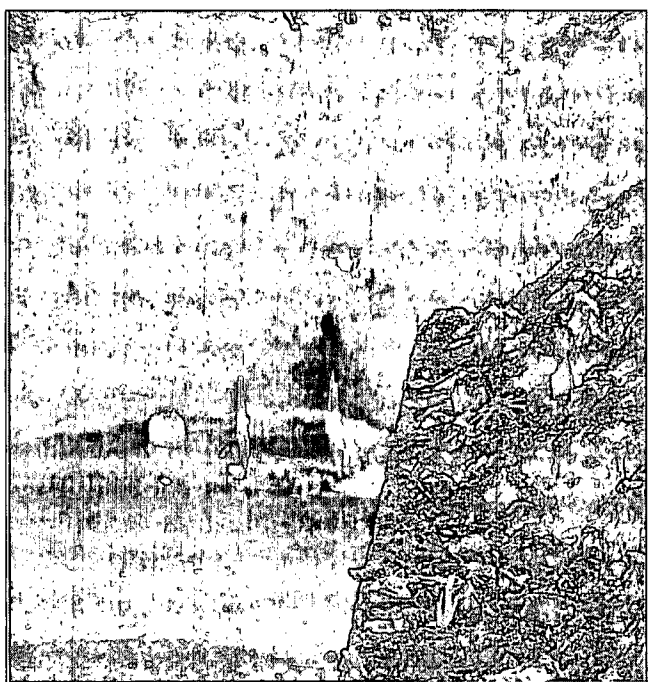


Photo No. 5-Tula Drain - San Luis Hwy

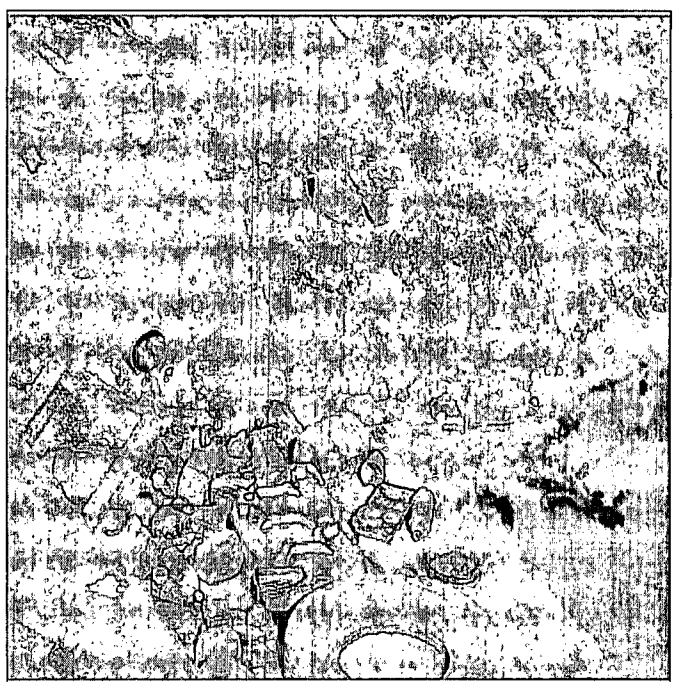


Photo No. 6 -Tula Drain - San Luis Hwy

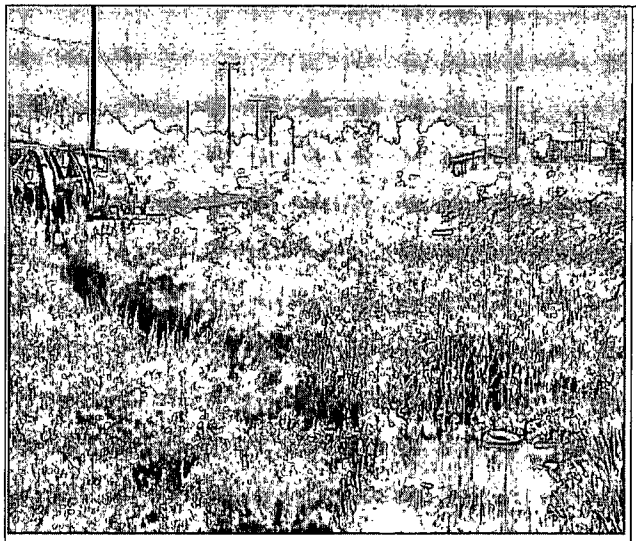


Photo No. 7 -Tula Drain-by Vitro-Mex

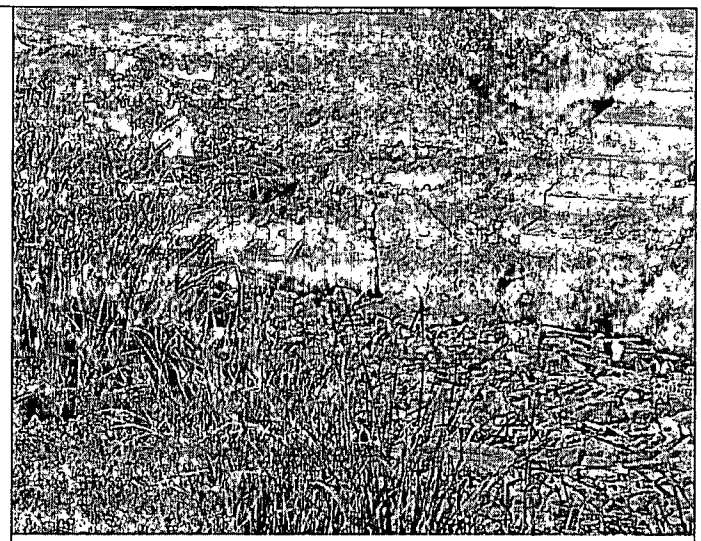


Photo No. 8 -Tula Drain-by Vitro-Mex

A trickle of a "black substance" was observed from one of the Vitro-Mex plant outfalls into the Drain. In addition, the Drain in this location is also overwhelmed with vegetation and municipal waste (Photos No. 7 and No. 8). No other discharges were observed into the Drain during this observation tour.

PUMP STATIONS

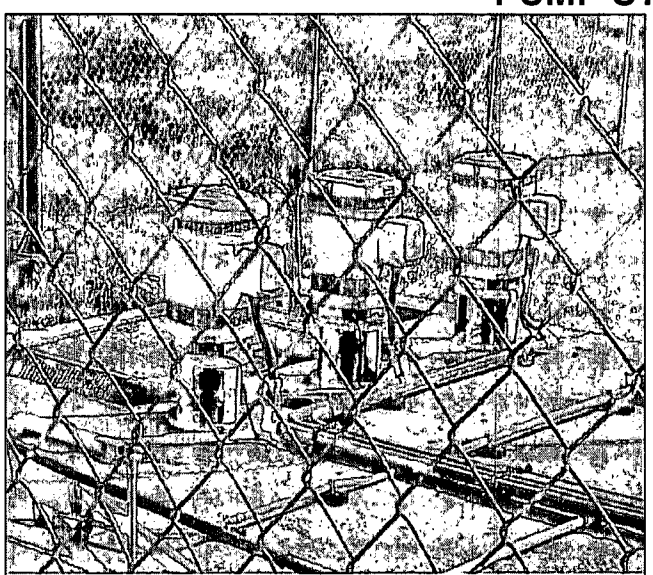


Photo No. 9 –Gonzales Ortega

The Gonzales-Ortega Pump station was idle during this tour observation. Staff from CESPM stated that the wastewater influent to this plant is diverted in to the Mexicali drain.

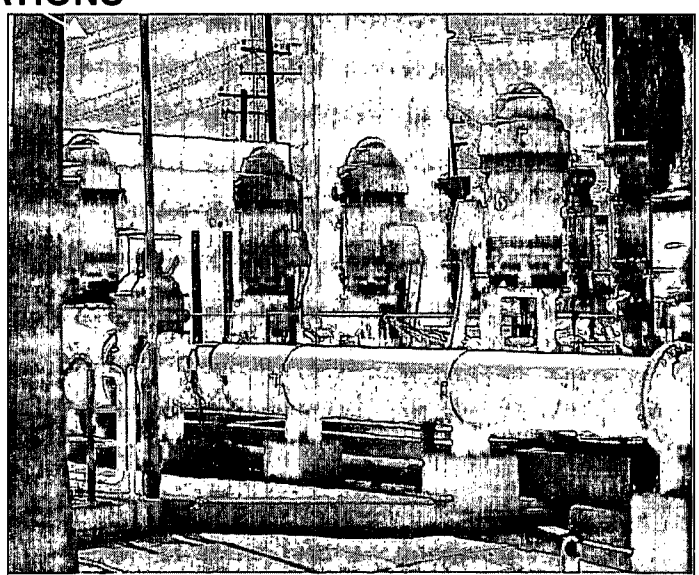


Photo No. 10 – Pump station No. 1

Pump station No. 1 looks clean and well maintained. The facility was reported to be fully operational during the observation tour .

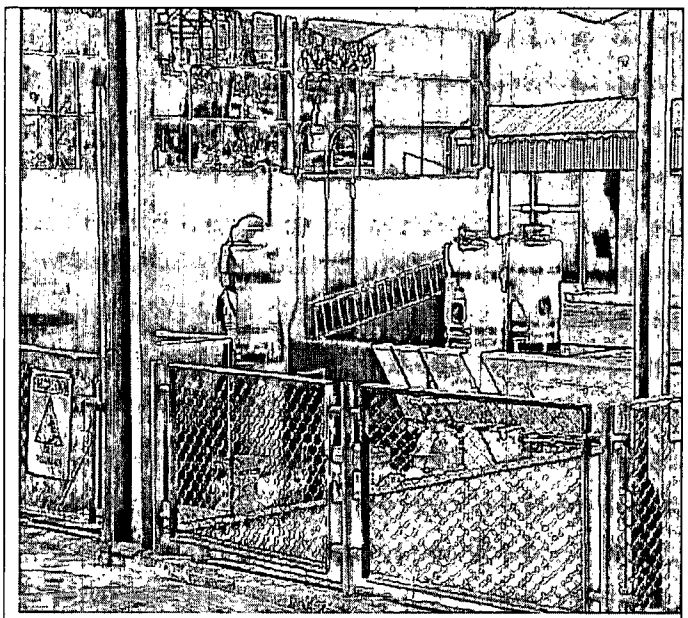


Photo No. 11 – Pump Station No. 2
Pump station No. 2 look clean and well maintained, however the facility was inoperable during this observation tour and reportedly it would take CESPM at least twenty more days to fully operate this facility.

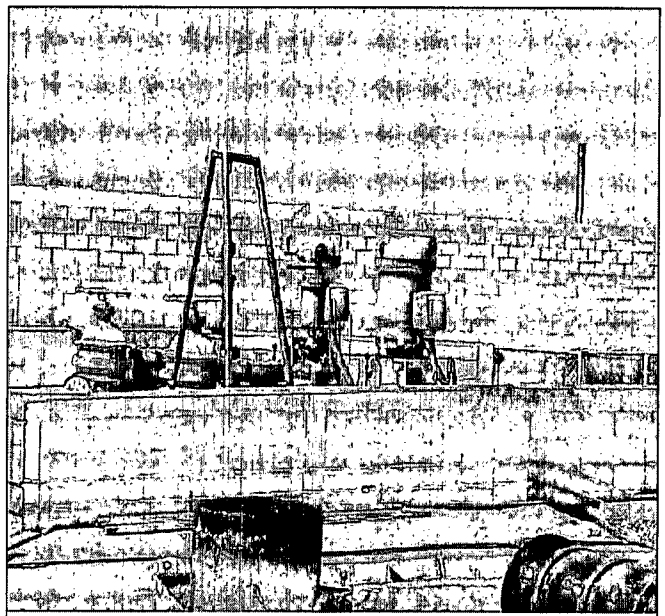


Photo No. 12 – Pump Station No. 3
Pump station No. 3 is in good condition but partially operational; one of the pumps is still being repaired. The facilities look clean and well maintained.

PUMP STATION NO. 4

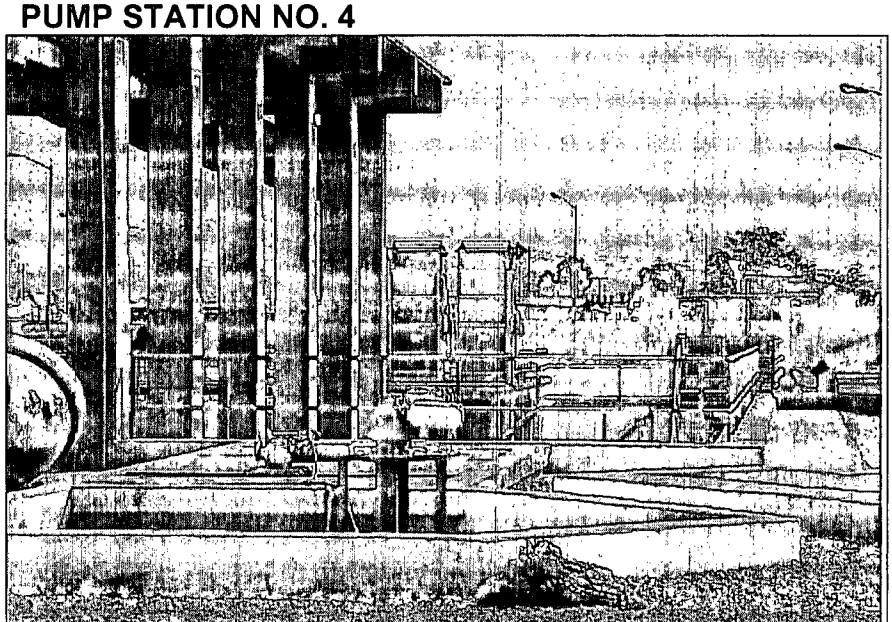


Photo No. 13 – Pump Station No. 4

The construction of pump station No. 4 has been completed. The facility will be idle until the new wastewater treatment plant is on service (Photo No. 13).

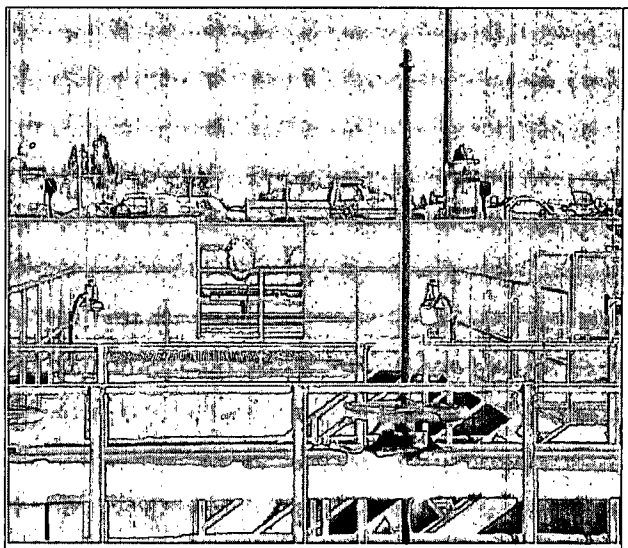


Photo No. 14 – Pump Station No. 5

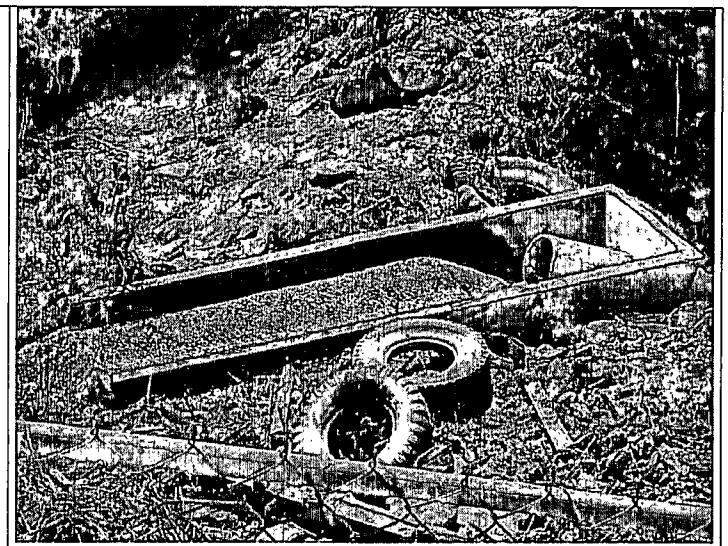


Photo No. 15–Pump Station No. 5 (discharge)

Pump station No. 5 looks clean, well maintained and was fully operational during this observation tour. The plant continues to discharge an estimated 15 l/sec into the New River via the Mexicali Drain (Photos No. 14 and 15).

WASTEWATER TREATMENT FACILITIES:

GONZALEZ - ORTEGA LAGOONS

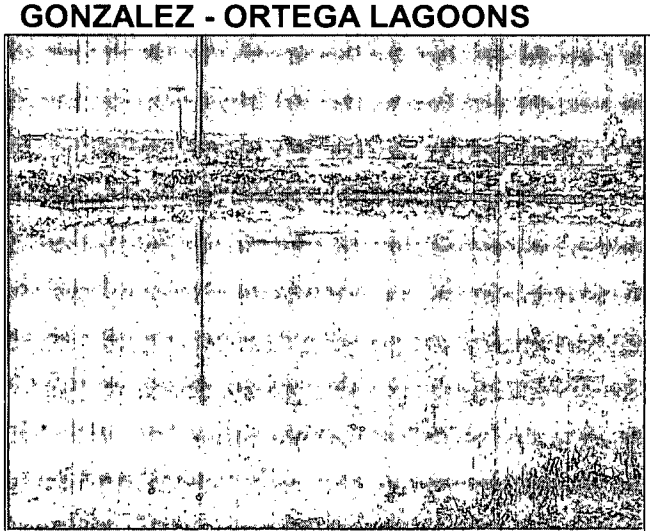


Photo No. 16– Gonzales-Ortega Lagoon

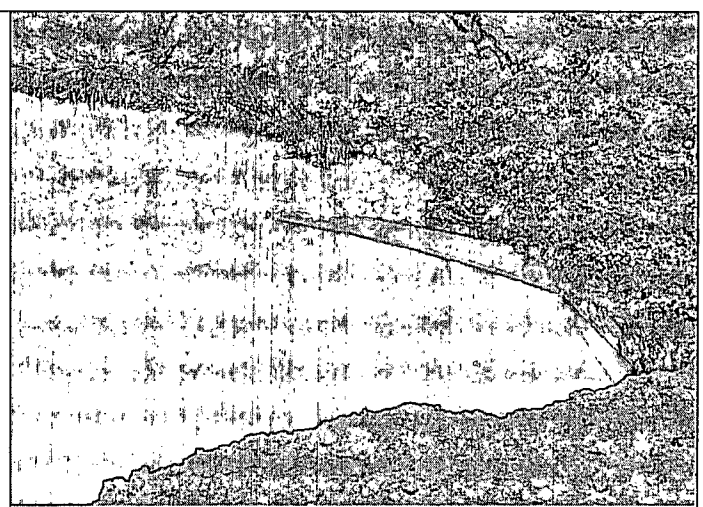


Photo No. 17– Gonzales-Ortega effluent

The flow into the Gonzales-Ortega lagoons is minimal, almost insignificant, based on my observations, I have the impression that CESPM is in the process of abandoning these lagoons; it may be also safe to conclude that the lagoons are in the process of being dried-out. A new industrial park is being developed east from these facilities. A mild-strong septic

odor is prevalent in this facility. The wastewater color in the lagoons varies from grayish to olive green (Photos No. 16 and No. 17).

ZARAGOZA LAGOONS

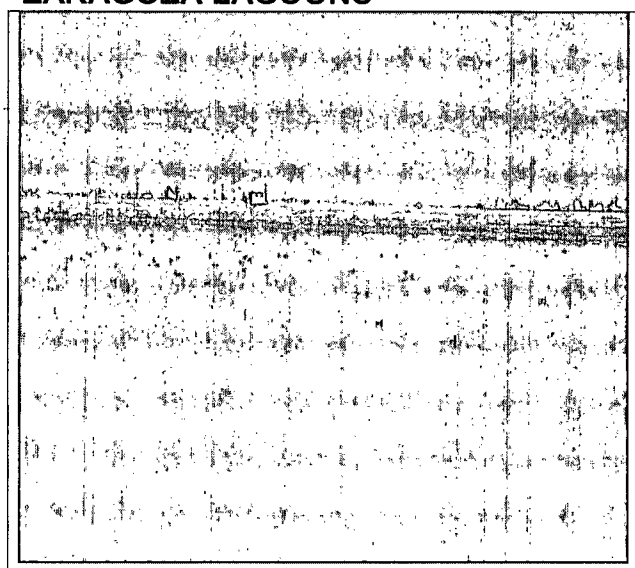


Photo No. 18– Zaragosa Lagoons

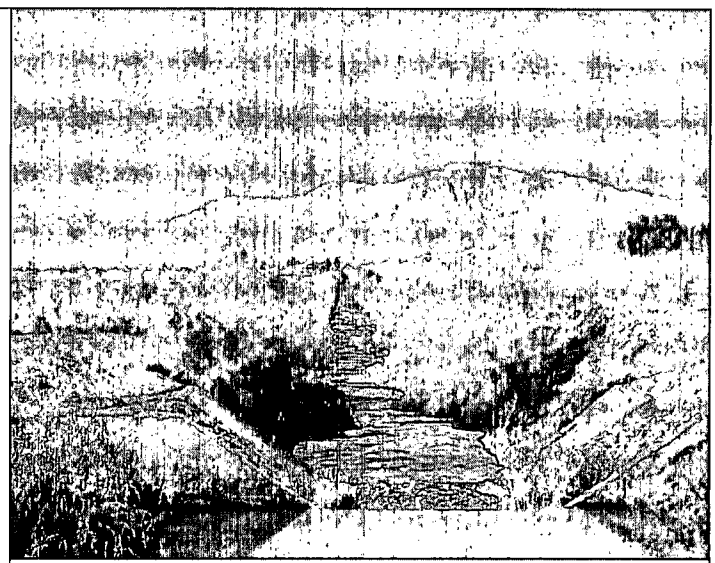


Photo No. 19– Zaragosa Outlet

The watercolor of the Zaragosa primary treatment lagoons varies from grayish to a greenish color. Watercolor in the Zaragosa secondary treatment lagoons varies in color from brown greenish to olive green. The lagoons are well maintained and with the exception of one of the primary anaerobic lagoons all others lagoons are in service and fully operational. The effluent is foamy and olive green colored. Canadian ducks were observed in at least two of the secondary lagoons (Photos No. 18 and No. 19).

NEW RIVER DISCHARGES

Photo No. 20 - KEN/MEX PLANT
A trickle of water flow was being

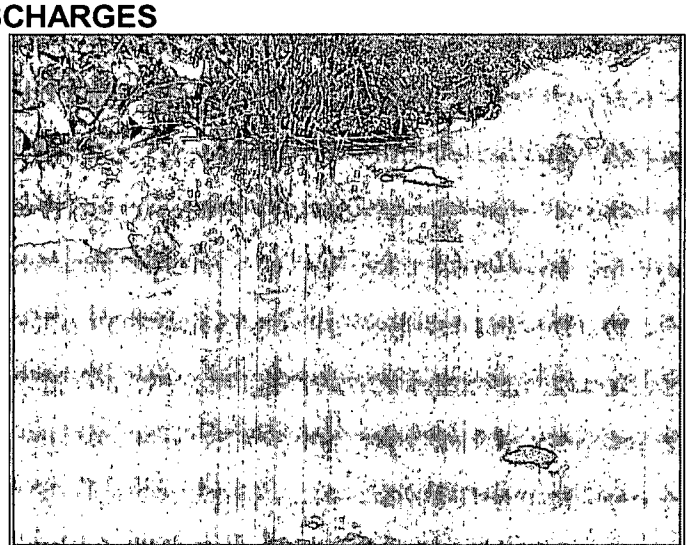


Photo No. 21 -NUTRIMEX BYPASS
An estimated flow of 90 l/sec of raw

discharged into the drain. The drain is still covered with piles of domestic waste.

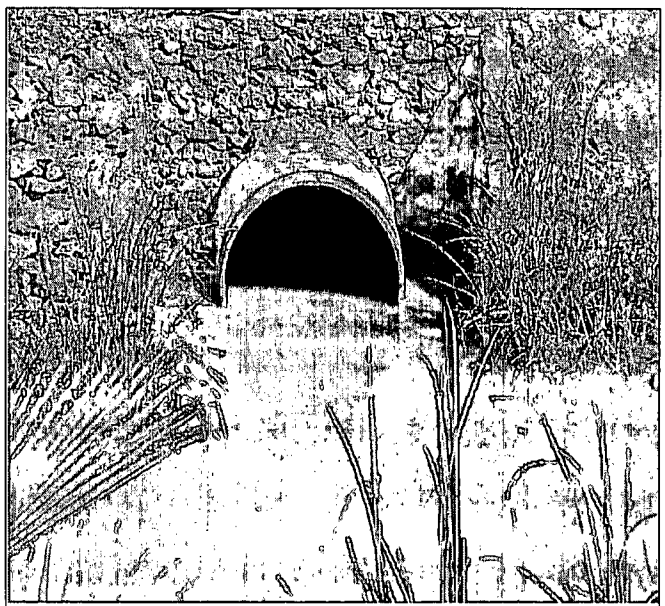


Photo No. 22- PRINCIPAL COLLECTOR
An estimated flow of 100 l/sec of raw sewage was being discharged from the 48-inch principal collector into the Mexicali drain. The watercolor in this location was black.

sewage was discharged from the Nutrimex Collector into the Mexicali Drain.

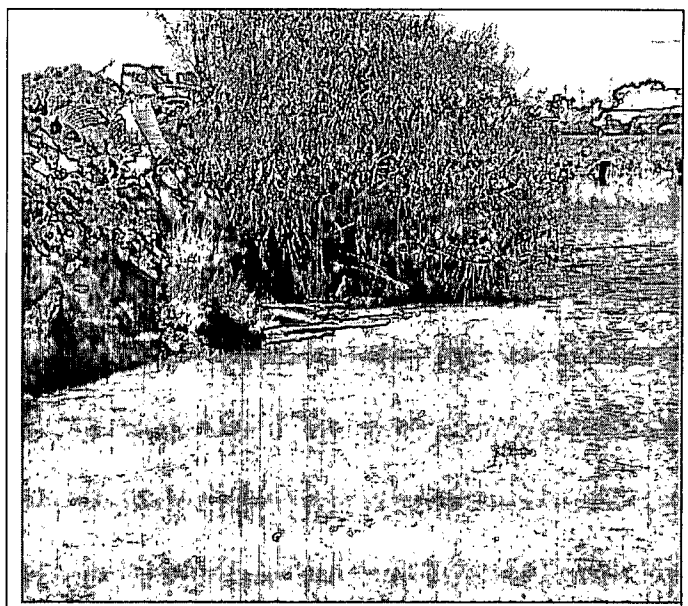
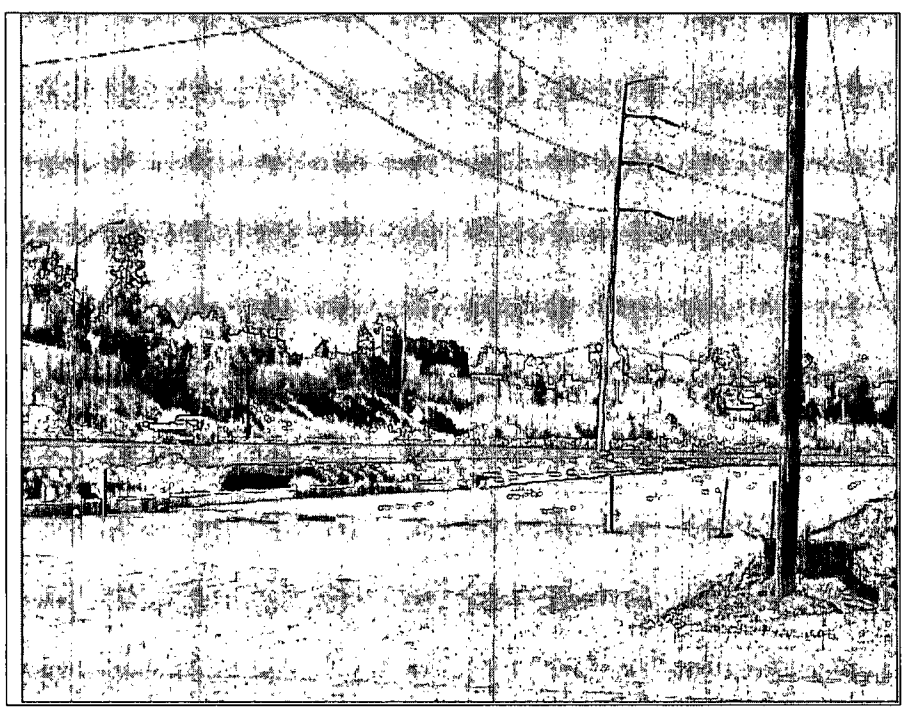


Photo No. 23- BANK INTERCEPTOR LINE
An estimated flow of 25 l/sec of raw sewage was being discharged from the left bank collector, under the Reforma Bridge, into the New River. The watercolor in this location was dark green and foamy.



DRAIN 134

All of the discharges to Drain 134 are no longer visible as a result of the encasement of the New River and the Drain (Photo No. 24).

Photo No. 24- ENCASEMENT OF RIVER

RECOMMENDATIONS/COMMENTS

It is imperative to implement a water quality-monitoring program to monitor illegal discharges and bypasses of sewage into the New River.

CESPM appears to be facing serious problems with the operation and maintenance of their pumping facilities. In addition, the problems associated with the disposal of trash along the Tula drain and in general along the New River need to be addressed during one of the binational technical committee meetings.

Winston H. Hickox
Secretary for Environmental Protection

Governor

March 30, 2001

To: Doug Wylie, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

Subject: Binational Observation Tour of the New River in the Mexicali area

On Thursday, March 29, 2001, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. The following is a summary of my observations.

TULA WEST DRAIN (DRAIN)

Photo No. 1 - Tula Drain

Photo No. 2 - Tula Drain

The Drain's watercolor varies from a dark green color in the vicinity of the San Luis Hwy to a milky pale color in the northern part of the Drain. A mild acrid odor is prevalent along the entire length of the Drain in this industrial/residential area. The vegetation and the piles of municipal wastes have been removed from the Drain's channel. However, abundant waste was already observed in the Drain's channel; also, the dredging spoils removed from the drain were deposited along the Drain's banks. (Photo Nos. 1, and 2).

Two PVC pipes running parallel to the San Luis Highway one on each bank of the drain upstream of the San Luis Hwy culvert of the Drain discharge an estimated 2 liter per-second (l/sec) of clear foamy wastewater into the Drain (Photos No. 3 and No. 4).

Photo No. 3-Tula Drain - San Luis Hwy

Photo No. 4 -Tula Drain - San Luis Hwy

A trickle of a "black substance" still observed from one of the Vitro-Mex plant outfalls into the Drain. In addition, an estimated of 2 l/sec of clear water was being discharged from another of the Vitro-Mex plant outfalls into the Drain. The Drain along this location is overwhelmed with vegetation and municipal waste (Photos No. 5 and No. 6).

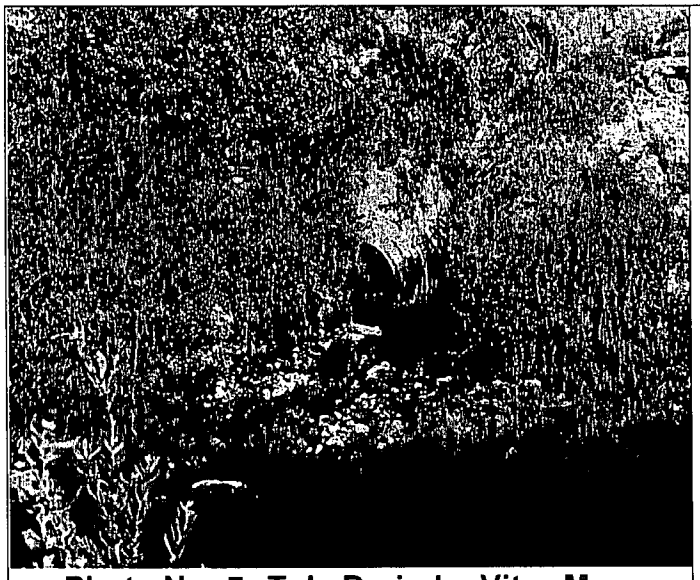


Photo No. 5 -Tula Drain-by Vitro-Mex

Photo No. 6 -Tula Drain-by Vitro-Mex

No other discharges were observed into the Tula Drain during this observation tour.

PUMP STATIONS

Photo No. 7 – Gonzales-Ortega

The Gonzales-Ortega pump station was reported to be in good condition but partially operational during this tour observation. The wastewater influent to this plant is lifted into the Gonzales-Ortega lagoons for treatment.

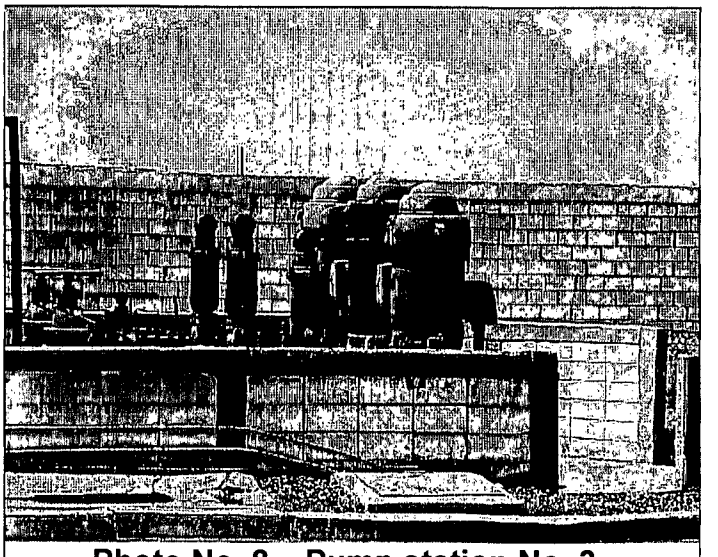


Photo No. 8 – Pump station No. 3

Pump station No. 3 was reported to be in good condition and observed to be fully operational. The wastewater influent to this plant is lifted into the Zaragoza lagoons. The facilities look clean and well maintained.

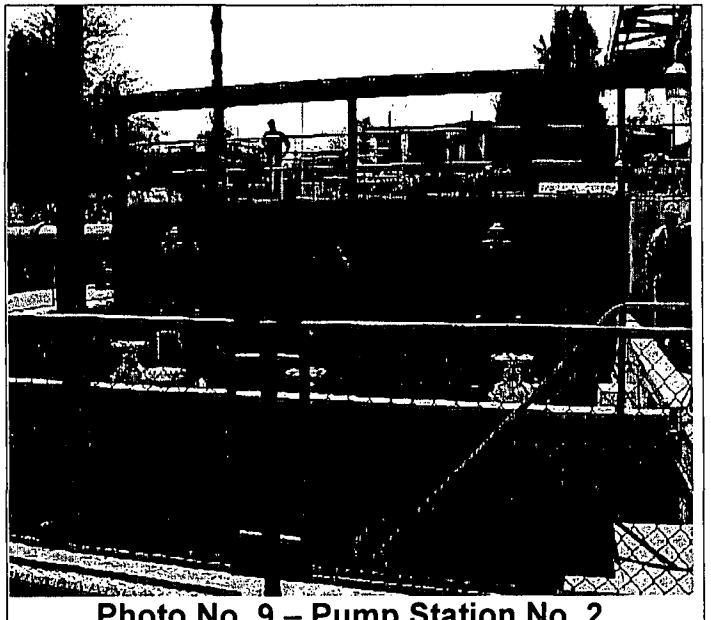


Photo No. 9 – Pump Station No. 2

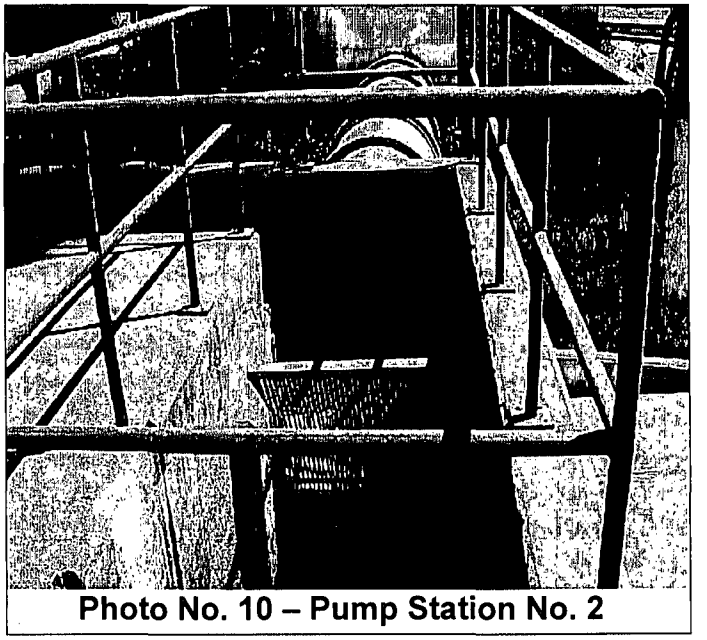


Photo No. 10 – Pump Station No. 2

Pump station No. 2 look clean and well maintained. The facility was reported to be in good condition and observed to be fully operational. However, the inflow to this facility was estimated to be about 10 l/sec. This flow is well below normal; it is suspected that a bypass to the New River was occurring

during this observation tour. Staff from CESPM reported that the Cardenas Collector collapsed and is in the process of being repaired. CESPM also reported that it will take at least ten more days to fully repair the collapsed collector (Photo No. 9 and 10).

Photo No. 11 – Pump Station No. 4
Pump station No. 4 has been completed.

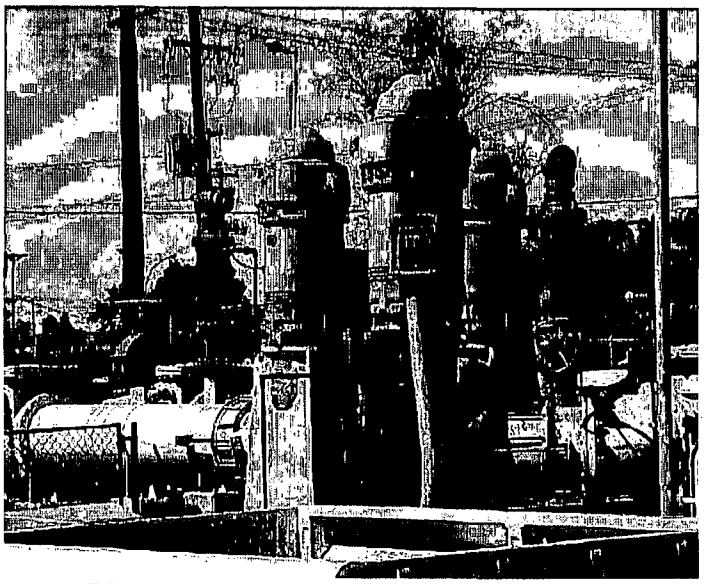


Photo No. 12 – Pump Station No. 1
Pump station No. 1 looks clean and well maintained. This pump station was reported to be in good condition but partially operational during this tour observation.

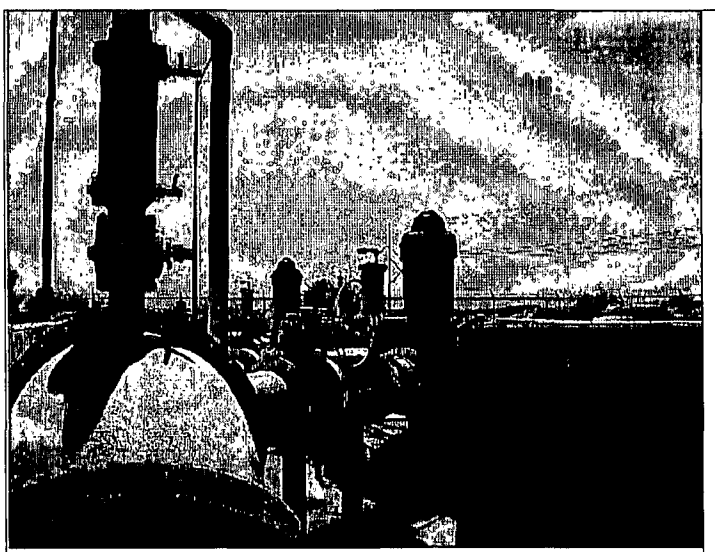


Photo No. 13 – Pump Station No. 5

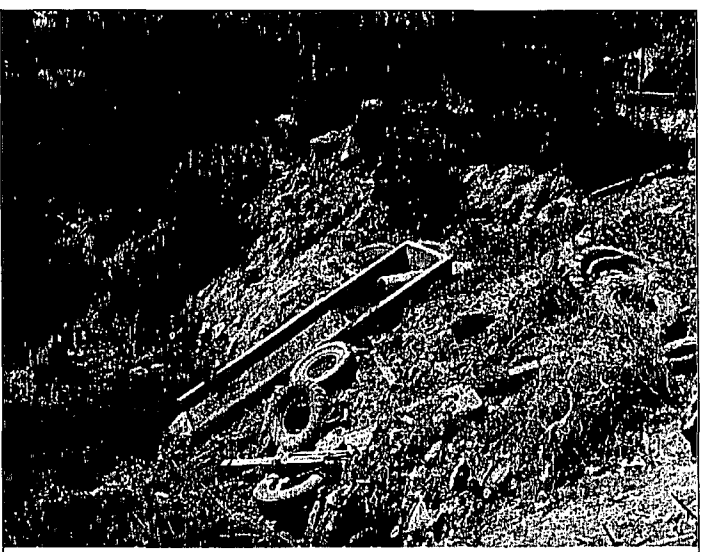


Photo No. 14–Pump Station No. 5 (discharge)

Pump station No. 5 looks clean, well maintained and it was fully operational during this observation tour. The plant continues to discharge an estimated of 15 l/sec into the New River via the Mexicali Drain (Photos No. 13 and 14).

WASTEWATER TREATMENT FACILITIES:

GONZALEZ - ORTEGA LAGOONS

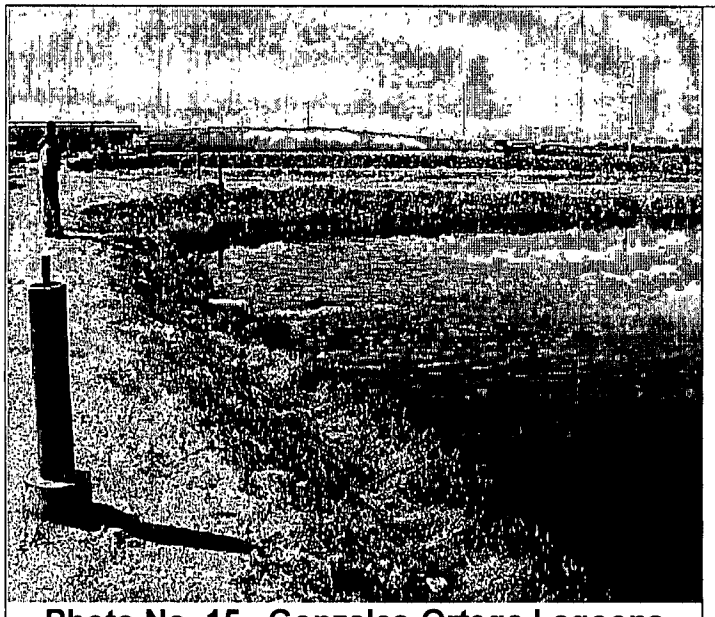


Photo No. 15– Gonzales-Ortega Lagoons

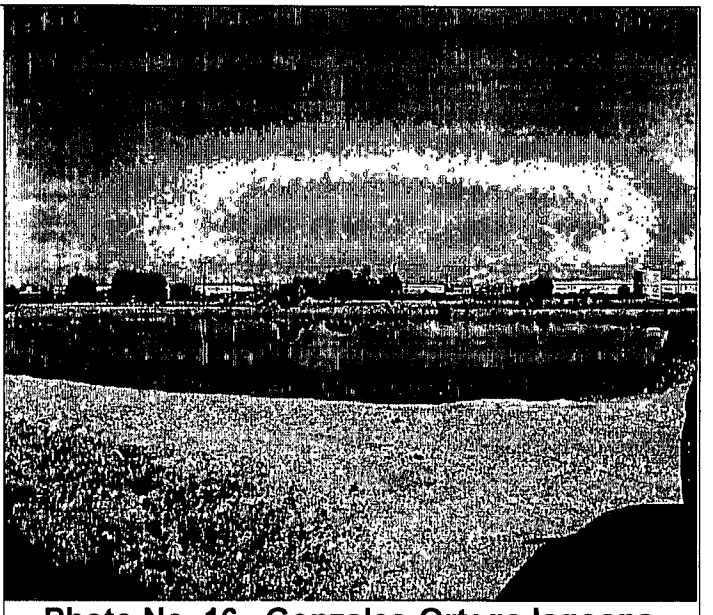


Photo No. 16– Gonzales-Ortega lagoons

The watercolor of the Gonzales-Ortega treatment lagoons varies from grayish to a greenish color. The lagoons appear to be working within its hydraulic loading capacity. All the lagoons are in service and fully operational. The effluent wastewater color is olive green. A new industrial park is being developed east from the facilities. A mild-strong septic odor is prevalent in this facility. The effluent wastewater color in the lagoons varies from grayish to olive green (Photos No. 15 and No. 16). A new industrial park is being developed east from the facilities

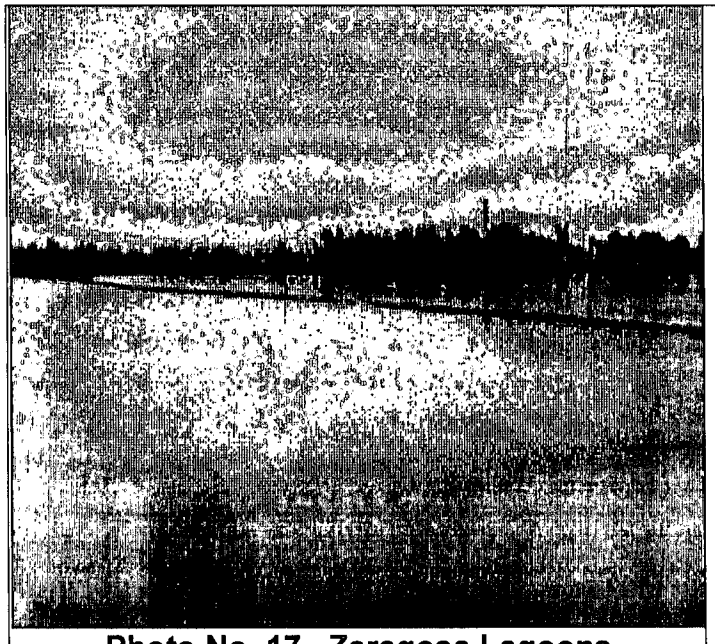


Photo No. 17– Zaragosa Lagoons

Photo No. 18– Zaragosa Outlet

The watercolor of the Zaragosa primary treatment lagoons varies from grayish to a greenish color. Watercolor in the Zaragosa secondary treatment lagoons varies in color from brown greenish to olive green. The lagoons are well maintained and with the exception of one of the primary anaerobic lagoons all others lagoons are in service and fully operational. The effluent from the lagoons is foamy. The effluent wastewater color is olive green. A septic haulers was observed releasing wastes into the head-works of this wastewater treatment plant (Photos No. 17, 18, 19, and 20).

Photo No. 19– Zaragosa anaerobic Lagoon

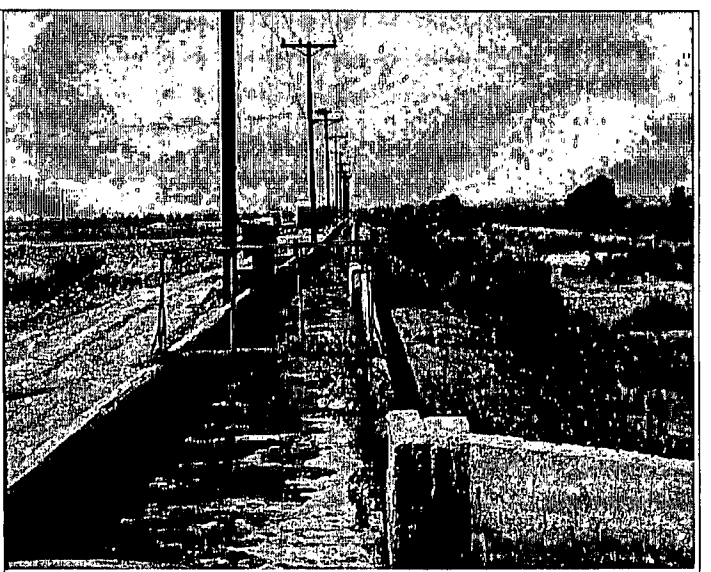


Photo No. 20– Zaragosa Outlet

NEW RIVER DISCHARGES

Photo No. 21 – Mexicali Drain

Fresh trash was observed in the closed dumpsitealong the Mexicali Drain just east of the San Felipe Highway.

Photo No. 22 - Ken/Mex Plant

A trickle of water flow was being discharged into the drain. The drain is covered with piles of domestic waste.

Photo No. 23- Principal Collector
An estimated flow of 80 l/sec of raw sewage was being discharged from the 48-inch principal collector into the Mexicali drain. Th watercolor here was black.

Photo No. 24 -Nutrimex bypass
An estimated flow of 90 l/sec of raw sewage was being discharged from the Nutrimex Collector into the Mexicali Drain 4).

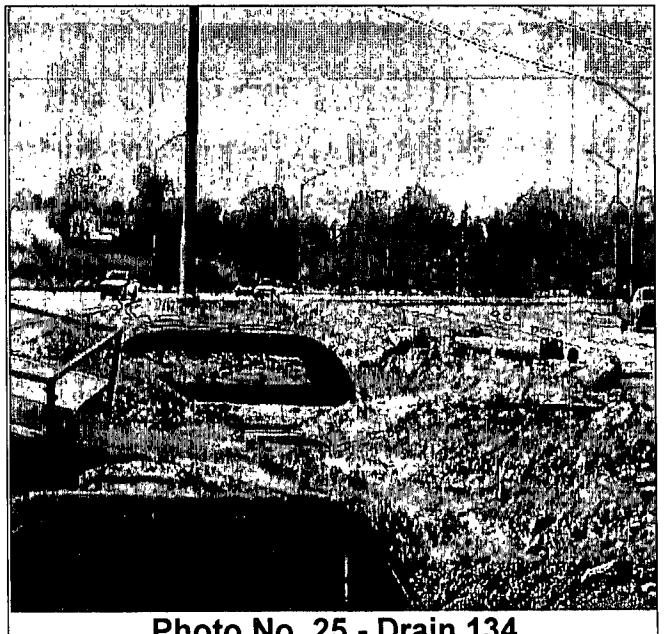


Photo No. 25 - Drain 134
All of the discharges to Drain 134 are no longer visible as a result of the encasement of the New River and the Drain.

Photo No. 26- bank Interceptor line
No flow discharged was observed from the left bank collector, under the Reforma Bridge, into the New River .

Photo No. 27- Encasement of the New River

Photo No. 28- Encasement of the New River

Encasement of the New River continues south towards the boulevard Lazaro Cardenas (Photos No. 27 and 28).

RECOMMENDATIONS/COMMENTS

It is imperative to implement a water quality-monitoring program to continue the monitor illegal discharges and bypasses of sewage into the New River.

May 7, 2001

To: Doug Wylie, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

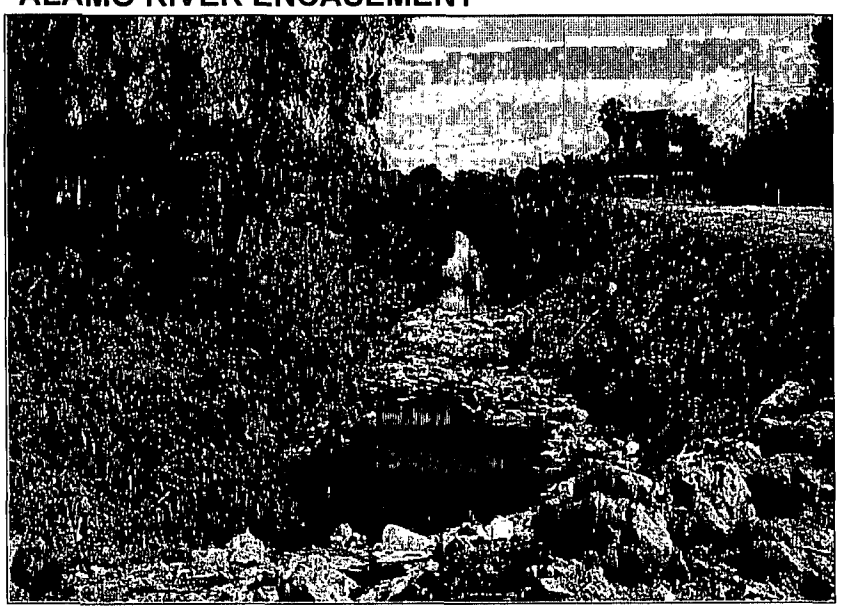
Subject: Special Observation Tour of the New River in the Mexicali area

On Wednesday, May 2, 2001, I participated in the special observation tour of some of the industrial facilities, which have the potential to discharge their waste into the New River drainage in the Mexicali Valley. The following is a summary of my observations.

INDUSTRIAL AREA AT THE NEW PORT OF ENTRY

An observation of the new industrial area located at the new port of entry was conducted during this tour. No wastewater discharges or other sources of possible contamination to the Alamo River or the drains located in the proximity of this area were observed during the time of this observation tour. In addition, staff from the Commision Nacional del Agua (CNA) and Commision Estatal de Servicios Publicos de Mexicali (CESPM) stated that they are confident all the existing industries located in this area are connected to the sewage system. One concern we have is that it is unknown if the wastewater from this new industrial area is currently treated at any of the CESPM's wastewater treatment facilities, or bypassed into the Principal/Nutrimex collectors and subsequently into the New River.

ALAMO RIVER ENCASEMENT



The disposal of municipal waste is evident along the banks and slopes of this drains, however no discharges were observed into any of this tributary drains. No flow from the local drains into the Alamo River was observed during the time of this observation tour (Photo No. 1).

Mexicali' Sanitation Project
Special Tour - May 2001

Photo No. 1 – Mexicali Drain by the Alamo River

GLASS FACTORY LOCATED NEAR THE PROPOSED MEXICALLI II LAGOONS.

An estimated flow of 10 liters per second (l/sec) of raw sewage was being discharged from the factory's outlet into a drain. The watercolor here was milky and had big chunks of blackish sediments. The drain along this location is overwhelmed with vegetation. An excessive growth of algae and a layer of grayish scum were also observed in this location (Photo Nos. 2 & 3).

Photo No. 2 – Glass factory effluent

Photo No. 3 – Glass factory effluent

BACHOCO FEEDLOT

An estimated flow of 5 l/sec of raw sewage was being discharged from this location into a drain. The watercolor here was green. An excessive growth of algae and a fine layer of a grayish scum were observed in this location (Photo Nos. 4 & 5).

Photo No. 4 – Bachoco outlet

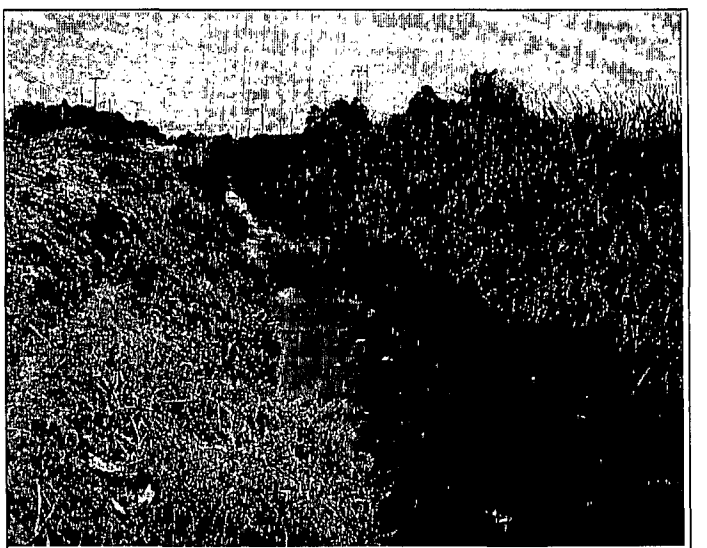


Photo No. 5 – Bachoco outlet

SLAUGHTER HOUSE

A very strong, nauseous odor was persistent along the periphery of the slaughterhouse. An estimated wastewater flow of 25 l/sec was being discharged from this location into a drain located west of the facility. The watercolor here was reddish. Big chunks of animal grease and blood were observed in the discharge. The drain along this location is totally covered with a thick layer of a blackish scum (Photo Nos. 6 & 7).

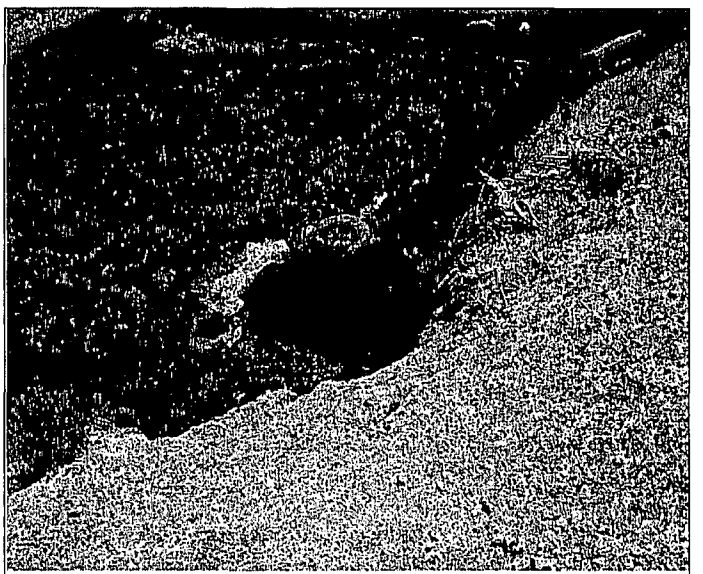


Photo No. 6 – Slaughter House

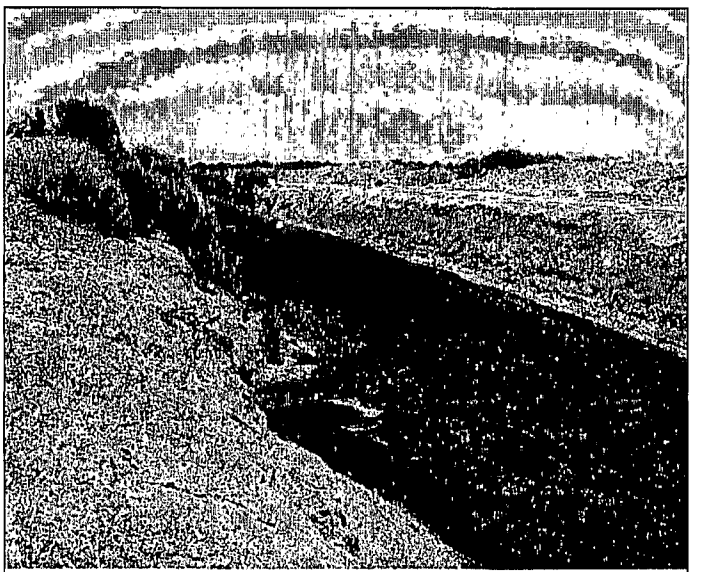
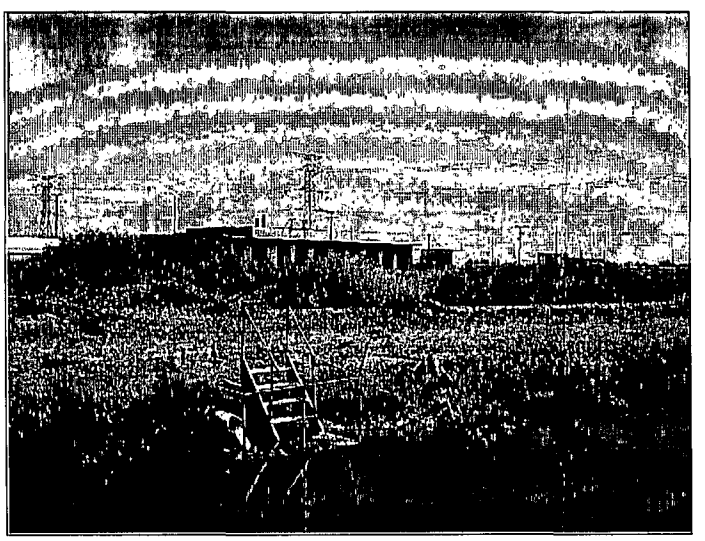


Photo No. 7 - Slaughter House

CERRO PRIETO COMMERCIAL LAUNDRY

An estimated wastewater flow of 1 l/sec was being discharged from this location into a drain. The watercolor here was clear. Toilet paper and small towels were observed in the discharge (Photo Nos. 8 & 9).



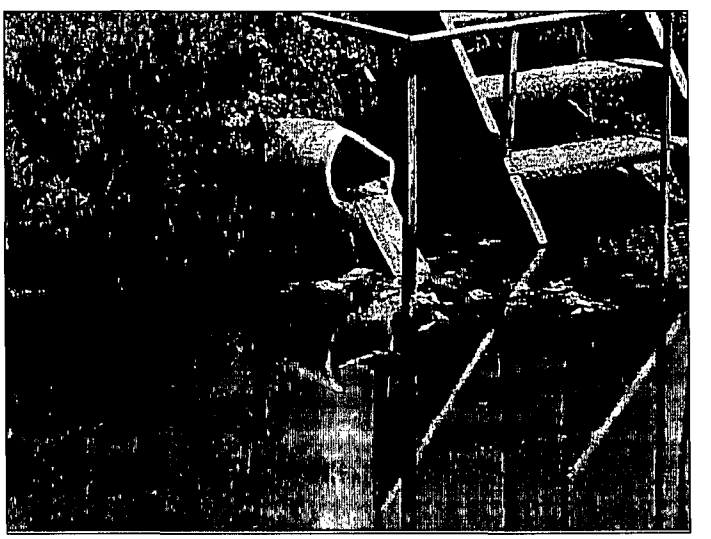


Photo No. 8 – Cerro Prieto Laundry

Photo No. 9 - Cerro Prieto Laundry

CERRO PRIETO GEOTHERMAL PLANT –

An observation of the Cerro Prieto Geothermal Plant was conducted during this tour. The Facility wastewater color in this location was bluish and a persistent odor of hydrogen sulfide (rodent egg) was persistent within the area. No wastewater discharges or other sources of possible contamination to the local drains were observed during the time of this observation tour. The wastewater effluent flows southward where it is pumped into the Cerro Prieto Lagoons. According to a CNA official the lagoons effluent is evaporated, discharged to the Colorado River Delta, or injected back into the aquifer. No discharge was observed to be disposed into the drains during this observation tour (Photo Nos. 10 & 11).

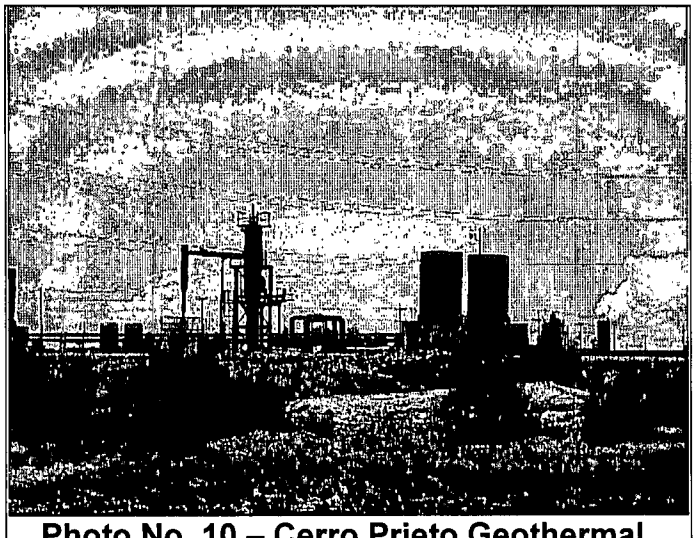


Photo No. 10 – Cerro Prieto Geothermal

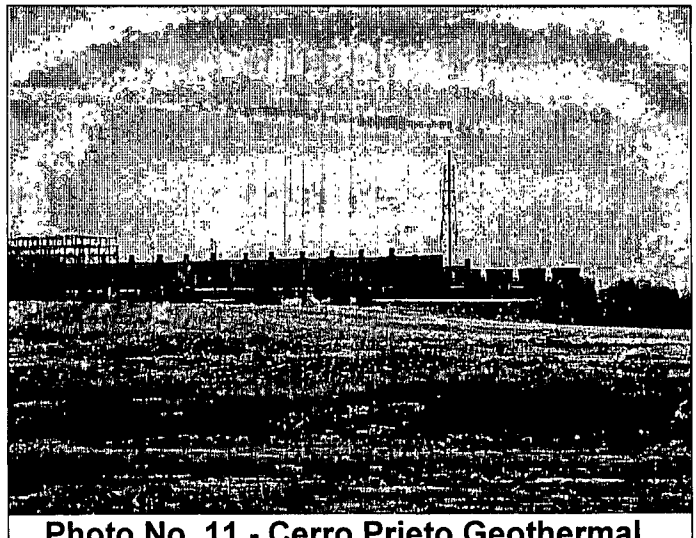


Photo No. 11 - Cerro Prieto Geothermal

STEEL MILL AND PROCESSING PLANT – COMPANIA SIDERURGICA DE CALIFORNIA

No discharge in to the local drains was observed from this facility during this tour. According to a CNA official, discharge from the facility may occur during emergency situations. Historical frequency of these emergency situations is unknown (Photo Nos. 12 & 13).

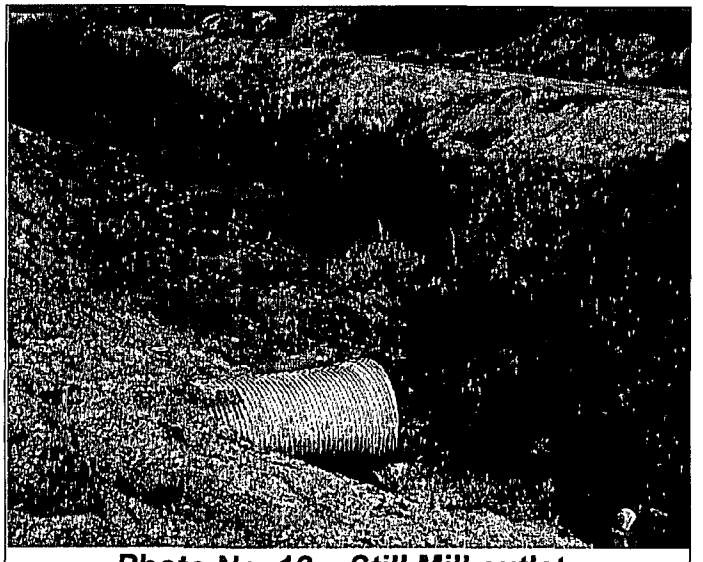


Photo No. 12 – Still Mill outlet

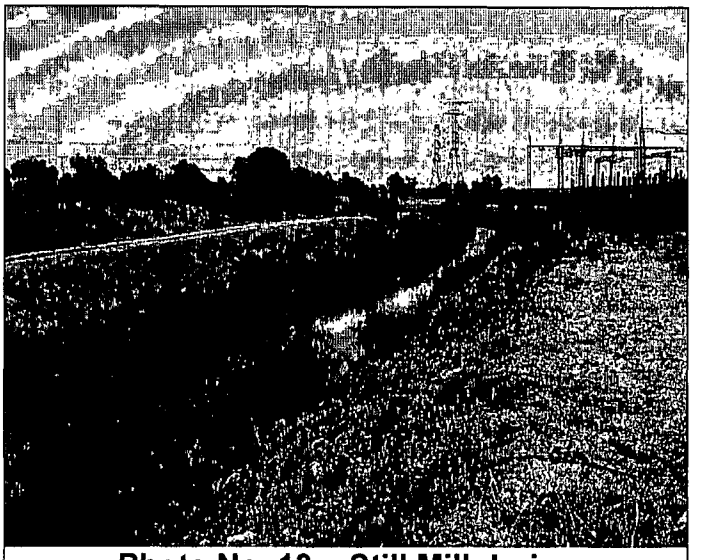


Photo No. 13 – Still Mill drain

MASECA

An observation of the Maseca's wastewater treatment facilities was conducted during this tour. No discharge into the drains was observed from this facility during this observation tour. It is assumed that the wastewater flow from the production facilities is retained in the drying bed area located within the Maseca's premises. It was also assumed that the runoff water and washout wastewater from the storage/distribution facilities is disposed into a drain, which was covered with vegetation. Additional treatment facilities (ponds) were observed south of the plant. These wastewater treatment facilities appeared to be idle during the time of this observation (Photo Nos. 14 & 15).

Photo No. 14 – Maseca Treatment Lagoons

Photo No. 15 – Maseca Dry Bedding Area

SAN FRANCISCO PAPER MILL

A discharge flow of approximately 20 (l/sec) of a foamy yellowish liquid was observed from this facility into a drain. Pretreatment is provided to the wastewater primarily to remove suspended matter. A grayish matter was also observed around the periphery of the discharge outlet and along the drain (Photo Nos. 16 & 17).

Photo No. 16 – San Francisco Paper Mill

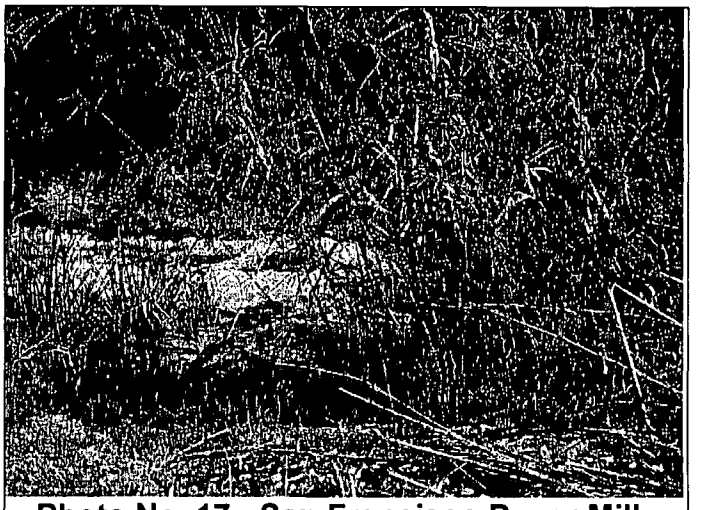


Photo No. 17 - San Francisco Paper Mill

NEW SLAUGHTERHOUSE (TIJUANA HWY)

An observation of the new Slaughterhouse wastewater treatment facilities located outside the Mexicali's western city limits was conducted during this tour. No discharge into the drains was observed from this facility during this tour. It is assumed that the wastewater flow from the production facilities is retained within the slaughterhouse's premises (Photo Nos. 18 -21).

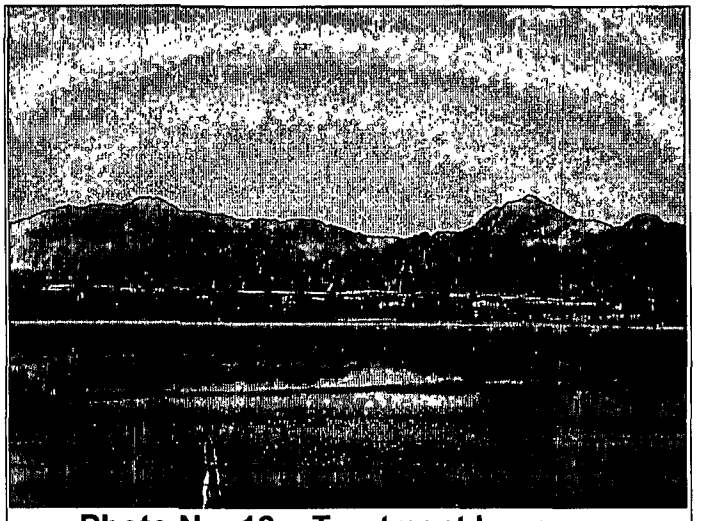


Photo No. 18 – Treatment Lagoons

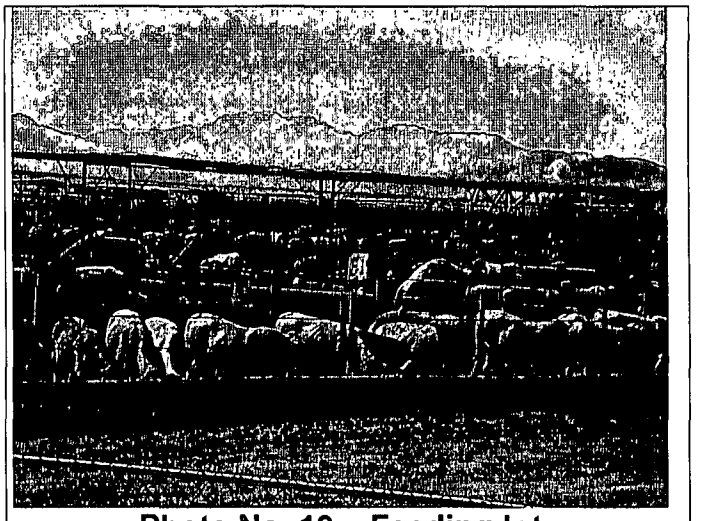


Photo No. 19 – Feeding lot

Photo No. 20 – Treatment Lagoons

Photo No. 21 – Discharge outlet

COMMENTS AND RECOMMENDATIONS

During this tour it was observed that a number of different industrial facilities continue to discharge untreated and inadequately treated wastewater into Mexicali's drainage system. Also, it is suspected that additional facilities may be discharging into the Mexicali's drainage system.

It is imperative that a random observation tour of the Mexicali's valley drainage system be conducted in the future. Permission to monitor the Mexicali's drainage system randomly and access to critical areas needs to be acquired from the appropriate authorities.

Winston H. Hickox
Secretary for Environmental Protection

Governor

May 8, 2001

To: Doug Wylie, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

Subject: Binational Observation Tour of the New River in the Mexicali area

On Thursday, April 26, 2001, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. The following is a summary of my observations.

TULA WEST DRAIN (DRAIN)

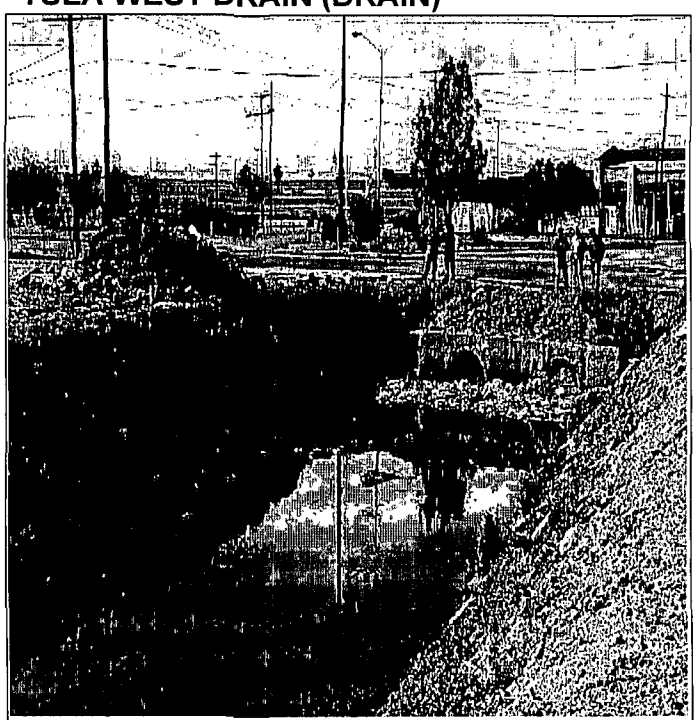


Photo No. 1 - Tula Drain

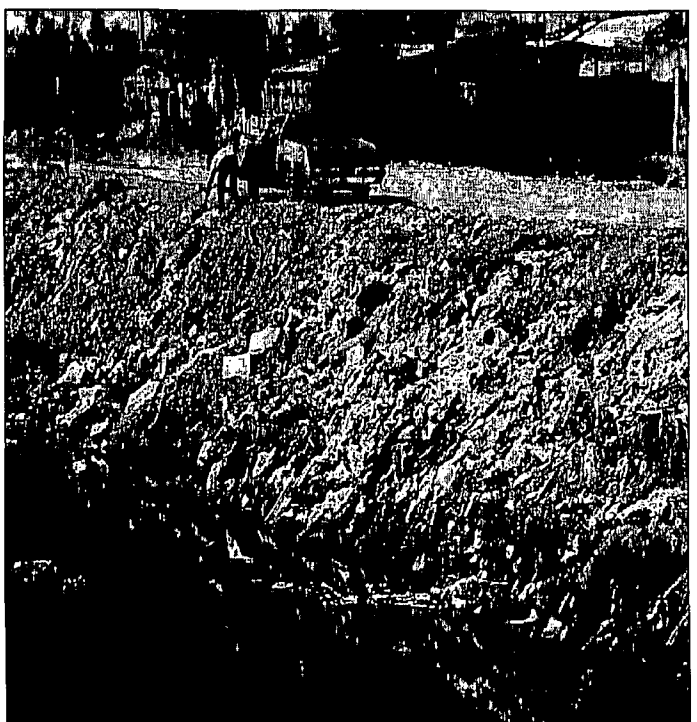


Photo No. 2 - Tula Drain

The Drain's watercolor varies from a dark green color in the vicinity of the San Luis Hwy to a milky pale color in the northern part of the Drain. A mild acrid odor is prevalent along the entire length of the Drain. The right bank, adjacent to the residential area, continues to be used as a local trash dumping spot. Two new discharges were observed in the left side of the Drain by the Hydrogenadora Nacional's northwestern corner lot. It is suspected that these discharges are linked to bypasses occurring due to the installation of a new sewer line in a near-by avenue. (Photo Nos. 1 – 4).

Photo No. 3 -Tula Drain-New Discharge

Photo No. 4 -Tula Drain-New Discharge

Two PVC pipes running parallel to the San Luis Highway one on each bank of the Drain upstream of the San Luis Highway culvert discharge an estimated 2 liter per-second (l/sec) of clear foamy wastewater into the Drain. The pipe located on the left side was covered with mud during this tour (Photos No. 5 and No. 6).

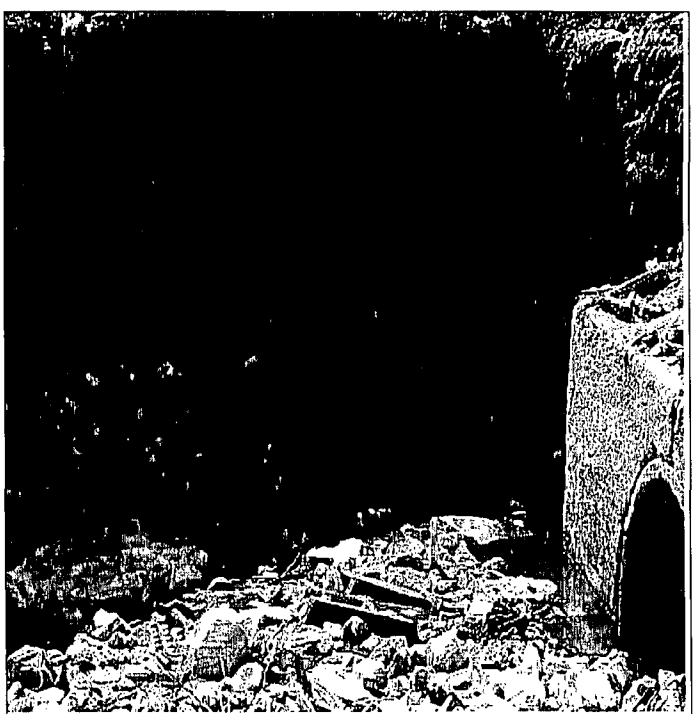


Photo No. 5-Tula Drain - San Luis Hwy

Photo No. 6 -Tula Drain - San Luis Hwy

A trickle of clear foamy water was observed to be discharged from one the Vitro-Mex plant outfalls and the Vigia No. 2 outfall into the Drain. The Drain along this location is overwhelmed with vegetation and municipal waste. No other discharges were observed into the Tula Drain during this observation tour (Photos No. 7 and 8).

Photo No. 7 – Tula Drain - VitroMex

Photo No. 8 – Tula Drain – Vigia No. 2

PUMP STATIONS

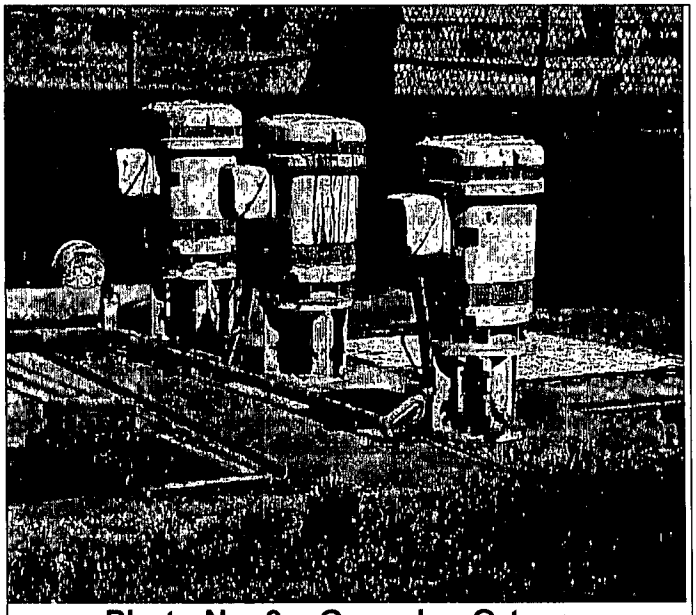


Photo No. 9 – Gonzales-Ortega

The Gonzales-Ortega pump station was reported to be in good condition and fully operational during this tour observation. The wastewater influent to this plant is lifted into the Gonzales-Ortega lagoons for treatment.

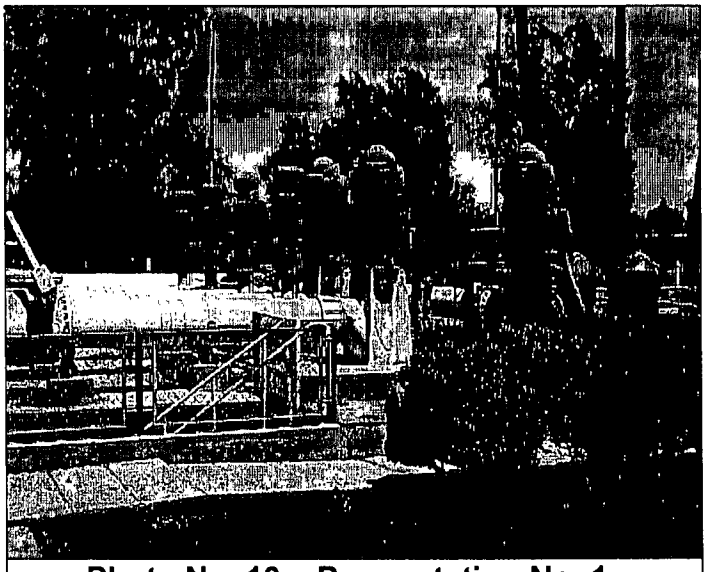


Photo No. 10 – Pump station No. 1

Pump station No. 1 was reported to be in good condition but partially operational, two of the pumps were off for maintenance. The wastewater influent to this plant is lifted into the Zaragoza lagoons for treatment. The facilities look clean and well maintained.

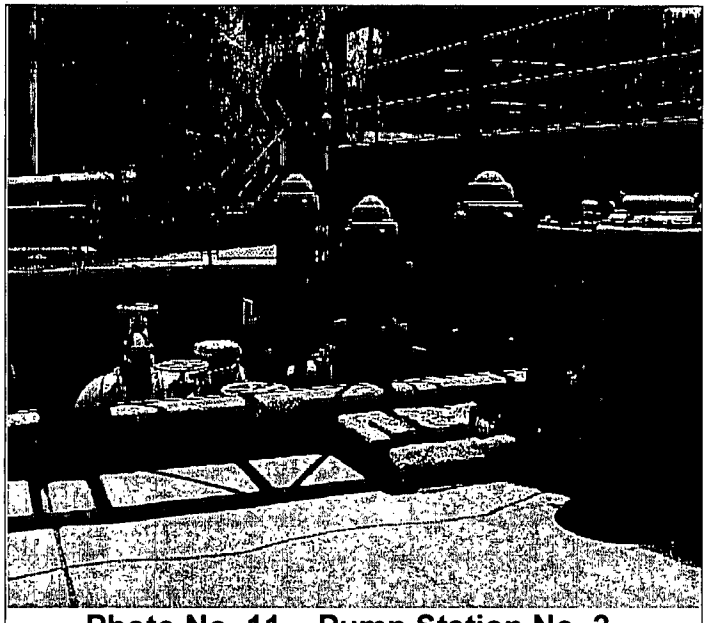


Photo No. 11 – Pump Station No. 2

Pump station No. 2 look clean and well maintained. The facility was reported to be in good condition and observed to be fully operational. However, the inflow to this facility was estimated to be about 20 l/sec, it is suspected that the majority of the inflow to this facility continues to be bypassed to the New River. Staff from CESPM reported that the Cardenas Collector, under repair last month was completed; however CESPM also stated that another collector was under repair this month. CESPM reported that they do not know how long it will take them to repair the newly collapsed collector (Photo No. 11)

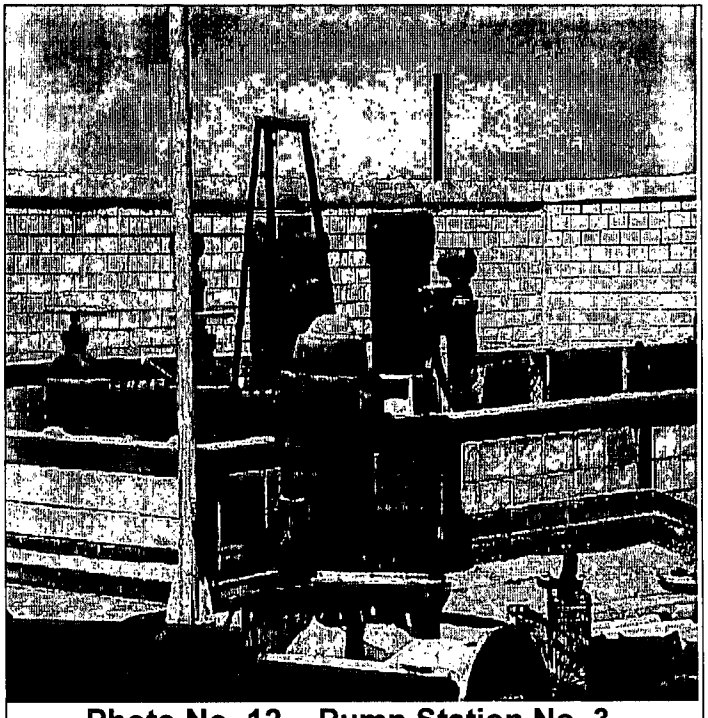


Photo No. 12 – Pump Station No. 3

Pump station No. 3 looks clean and well maintained. This pump station was reported to be in good condition but partially operational during this tour observation. One of the pumps was off for maintenance.

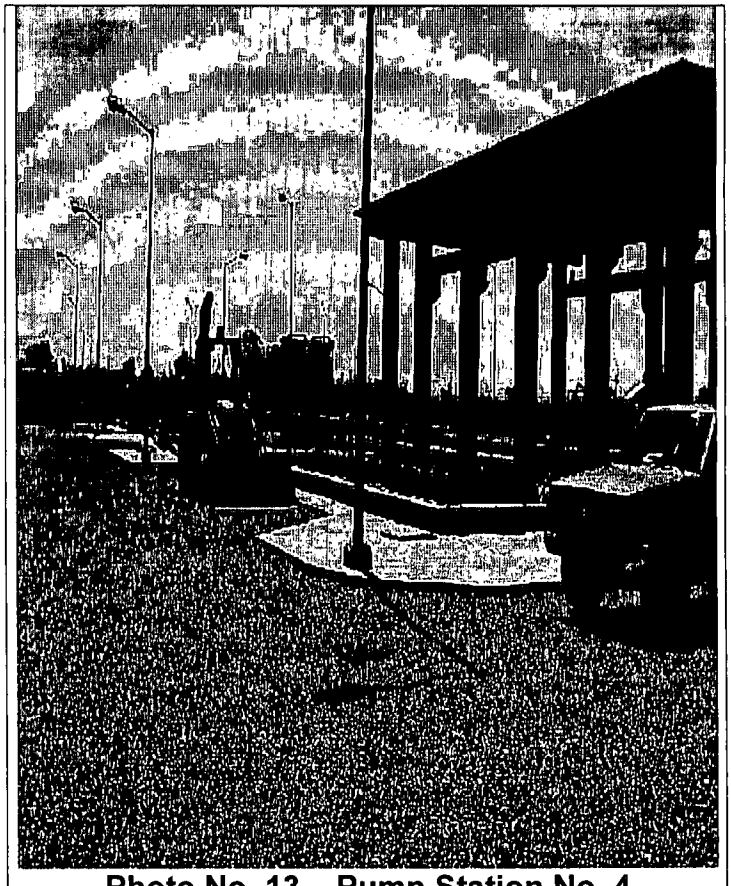


Photo No. 13 – Pump Station No. 4

Pump station No. 4 is 100% completed.

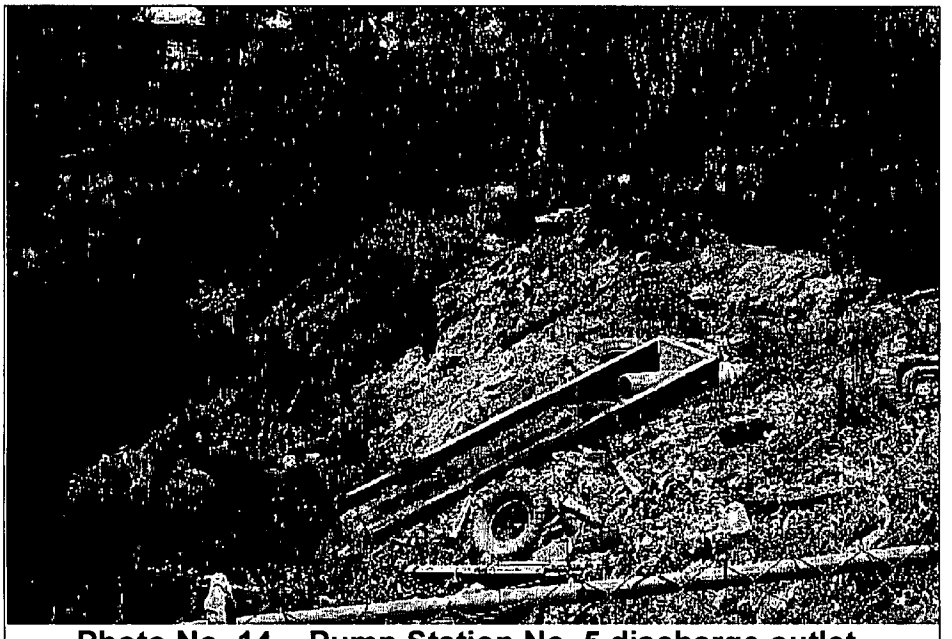


Photo No. 14 – Pump Station No. 5 discharge outlet

Pump station No. 5 appears to be clean, well maintained and it was fully operational during this observation tour. The plant continues to discharge an estimated of 15 l/sec into the New River via the Mexicali Drain (Photos No. 14).

WASTEWATER TREATMENT FACILITIES:

GONZALEZ - ORTEGA LAGOONS

We were unable to observe the Gonzales-Ortega treatment lagoons during this observation tour because the gate was padlocked. It is suspected that the facility is no longer in operation. The effluent wastewater color from the lagoons is olive green. (Photos No. 15 and No. 16).

Photo No. 15– Gonzales Ortega effluent

Photo No. 16– Gonzales Ortega effluent

ZARAGOZA LAGOONS

Photo No. 17– Zaragosa Lagoons

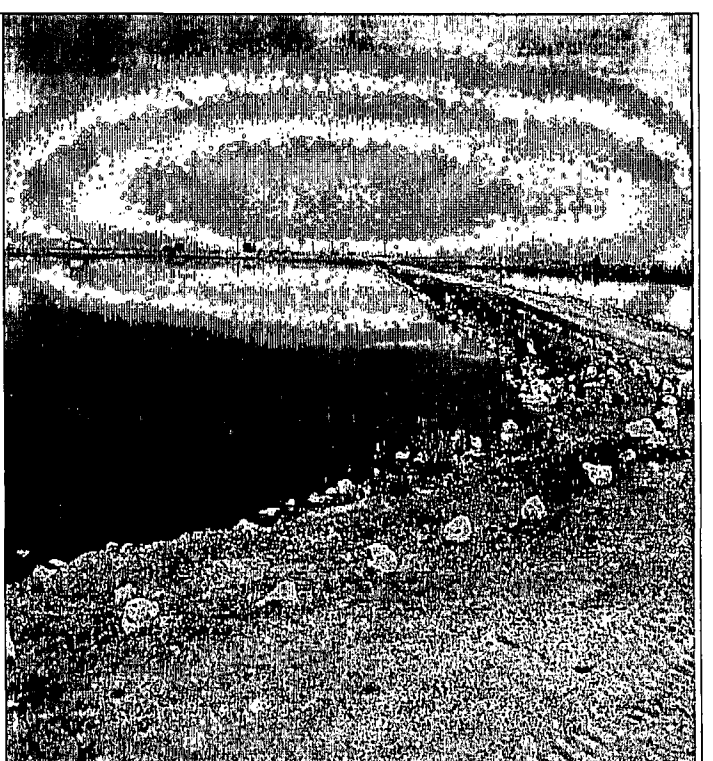


Photo No. 18– Zaragosa lagoons

The watercolor of the Zaragosa primary treatment lagoons varies from grayish to a brownish color. Watercolor in the Zaragosa secondary treatment lagoons varies in color from brownish to olive green. The lagoons are well maintained and with the exception of one of the primary anaerobic lagoons, which has been out of service for the last seven months, all others lagoons are in service and fully operational. The effluent from the lagoons is foamy and the wastewater color is olive green. A mild septic odor can be detected at the effluent channel of this facility. A stronger more persistent odor is detected at the influent head-works of this wastewater treatment plant. Two septic haulers were observed releasing wastes into the head-works of this wastewater treatment plant. We wee told that automatic online flowmeters and chemical analyzers devices would be installed at the inlet and outlet discharge channels of the plant (Photos No. 17 - 22).

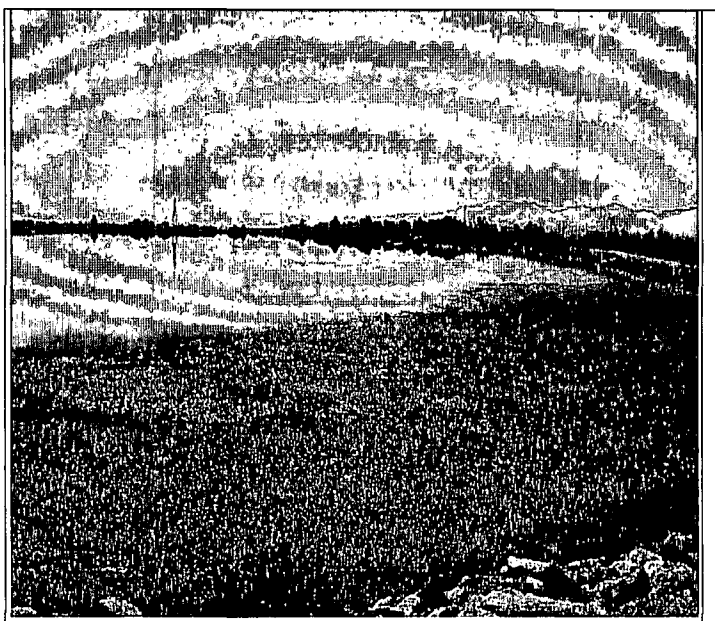


Photo No. 19– Zaragosa Lagoons

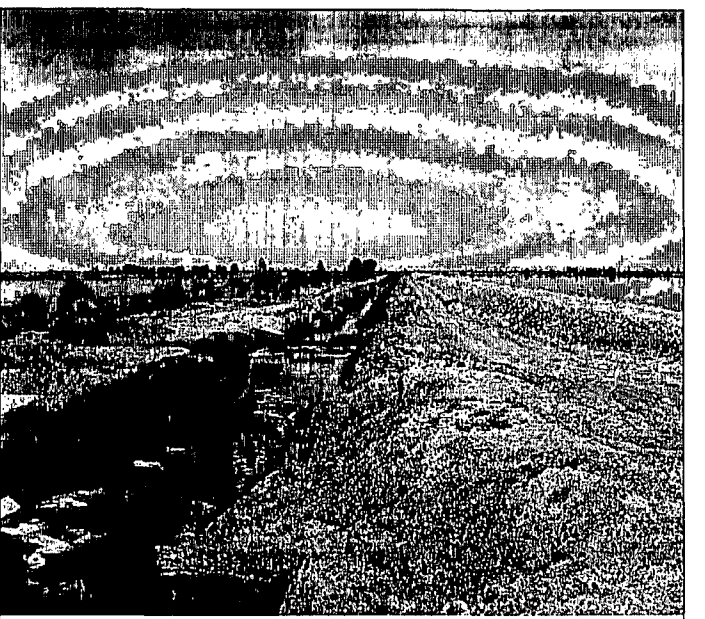


Photo No. 20– Zaragosa Outlet

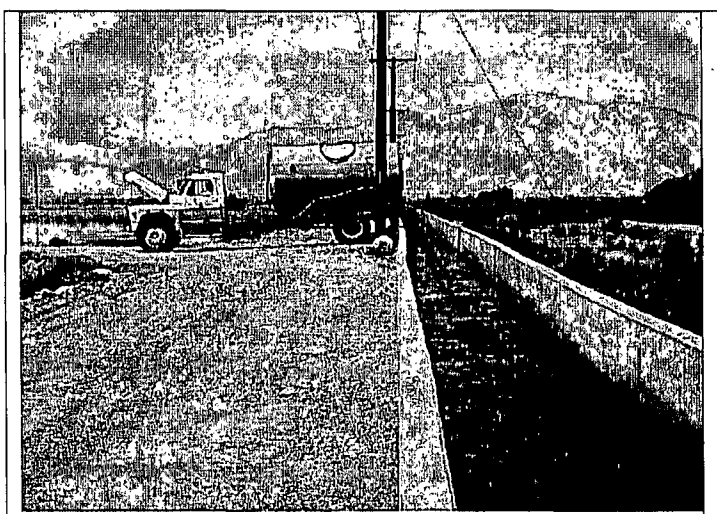


Photo No. 21– Zaragosa Lagoon

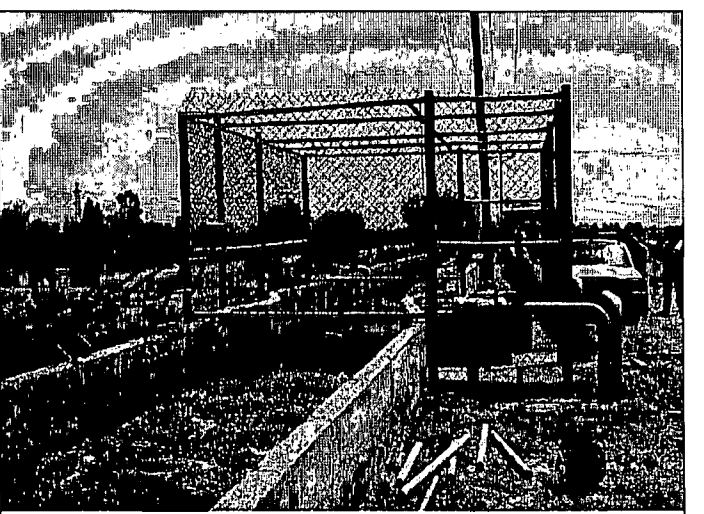


Photo No. 22– Zaragosa Inlet

NEW RIVER DISCHARGES

Photo No. 23 – Castellon Drain
An estimated flow of 5 l/sec of raw sewage was being discharged from the Castellon drain into the Mexicali drain. The watercolor here was green olive.

Photo No. 24 - Ken/Mex Plant
A trickle of water flow was being discharged into the drain. The drain is covered with piles of domestic waste.

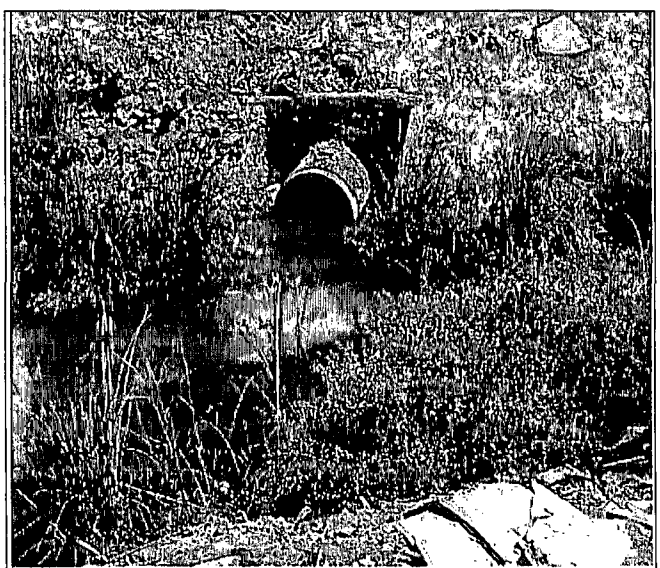


Photo No. 25- Principal Collector
An estimated flow of 90 l/sec of raw sewage was being discharged from the 48-inch principal collector into the Mexicali drain. The watercolor here was olive green.

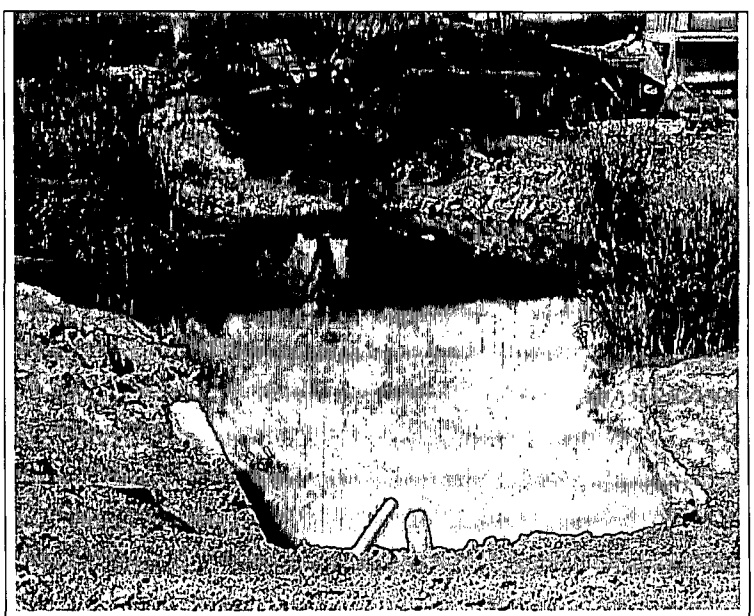


Photo No. 26 -Nutrimex bypass
An estimated flow of 100 l/sec of raw sewage was being discharged from the Nutrimex Collector into the Mexicali Drain.

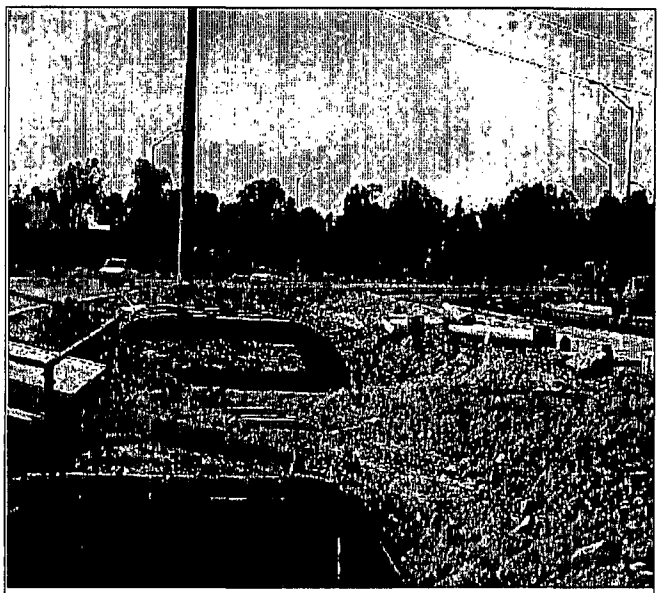


Photo No. 27 - Drain 134
All of the discharges to Drain 134 are no longer visible as a result of the encasement of the New River and the Drain.

Photo No. 28- bank Interceptor line
No flow discharged was observed from the left bank collector, under the Reforma Bridge, into the New River.

Photo No. 29- Encasement of the New River

Photo No. 30- Encasement of the New River

Encasement of the New River continues south towards the boulevard Lazaro Cardenas (Photos No. 29 and 30).

RECOMMENDATIONS/COMMENTS

It is imperative to implement a water quality-monitoring program to monitor illegal discharges and bypasses of sewage into the New River.

Winston H. Hickox
Secretary for Environmental Protection

Governor

June 8, 2001

To: Doug Wylie, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

Subject: Binational Observation Tour of the New River in the Mexicali area

On Wednesday, June 6, 2001, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. The following is a summary of my observations.

TULA WEST DRAIN (DRAIN)

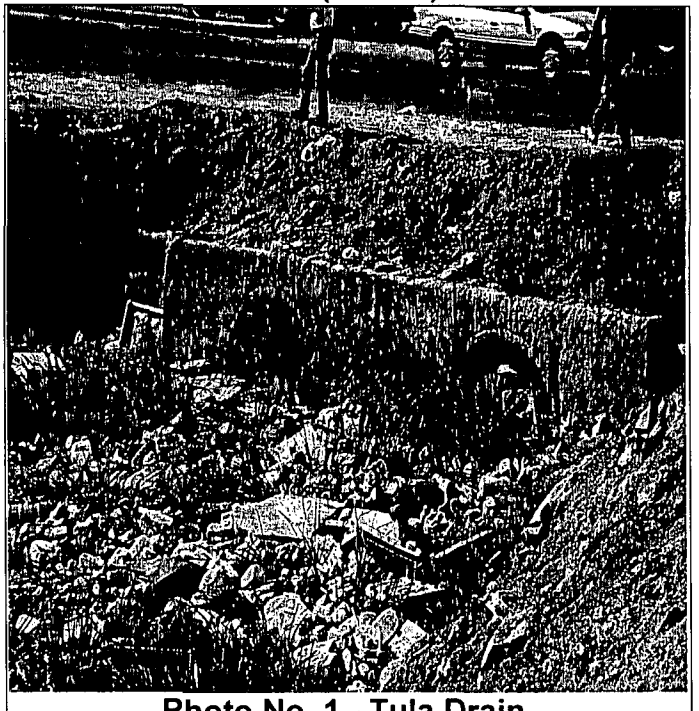


Photo No. 1 - Tula Drain

Photo No. 2 - Tula Drain

The drain's watercolor changes from a dark green color in the vicinity of the San Luis Hwy to a blackish-oily color in the vicinity of the Hydrogenadora Nacional to a milky pale – grayish color in the northern part of the drain. A scum of what appears to be motor oil was observed by the San Luis Highway culvert. The milky pale – grayish color in the northern portion of the drain is suspected to be some kind of vegetal grease. A mild acrid-septic odor is prevalent along the entire length of the drain in this industrial/residential area. The drain's channel commences to be

overwhelmed with vegetation and municipal waste (a car was observed in the channel's drain). Also, the slopes and banks of the drain are overwhelmed with huge stockpiles of municipal waste, tires, and dredging spoils previously removed from the drain. A new discharge was observed in the left side of the drain by the Hydrogenadora Nacional's northwestern corner lot. According to CESPM, this discharge may be linked to the bypasses occurring due to the installation of a new sewer line. (Photo Nos. 1 – 4).

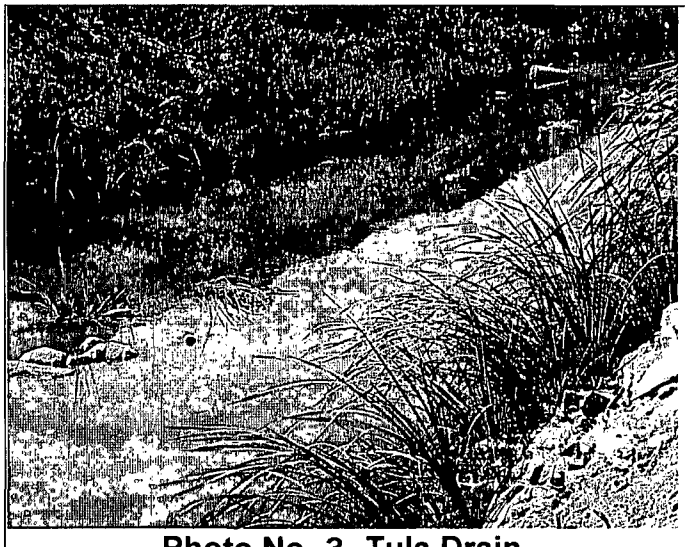


Photo No. 3 -Tula Drain

Photo No. 4 -Tula Drain

Two PVC pipes running parallel to the San Luis Highway (one on bank of the drain upstream the San Luis Hwy culvert continue discharging an estimated 2 liter per-second (l/sec) of clear foamy wastewater into the Drain (Photos No. 5 and No. 6).

Photo No. 5-Tula Drain - San Luis Hwy

Photo No. 6 -Tula Drain - San Luis Hwy

No other discharges were observed into the Tula Drain during this observation tour.

PUMP STATIONS

Photo No. 9 - Gonzales-Ortega

The Gonzales-Ortega pump station was reported to be in good condition and fully operational during this tour observation.

Photo No. 10 – Pump station No. 1

Pump station No. 1 was reported to be in good condition but partially operational. Two of the pumps were off for maintenance. The facilities appears to be clean and well maintained.

Photo No. 11 – Pump Station No. 2

Pump station No. 2 appears to be clean and well maintained. The facility was reported to be in good condition and observed to be fully operational. Staff from CESPM reported that no bypasses to the New River are occurring; all of the collapsed collectors have been repaired. The pump station is finally able to lift at its maximum capacity (Photo No. 11).

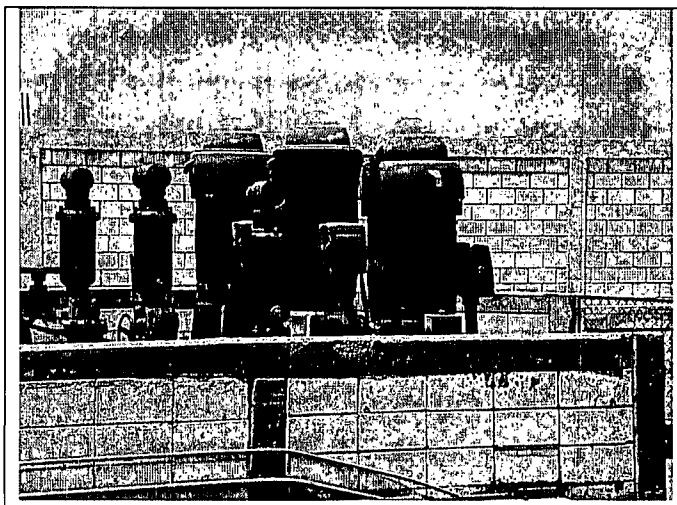


Photo No. 12 – Pump Station No. 3

Pump station No. 3 appears to be clean and well maintained. This pump station was reported to be in good condition and fully operational during this tour observation.

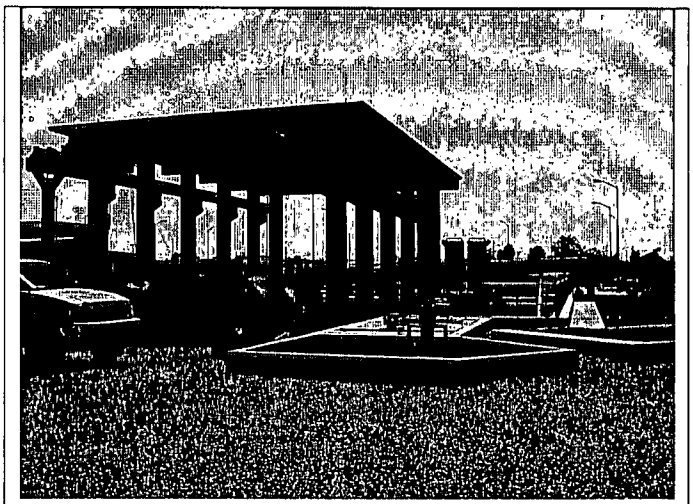


Photo No. 13 – Pump Station No. 4

Pump station No. 4 is 100% completed.

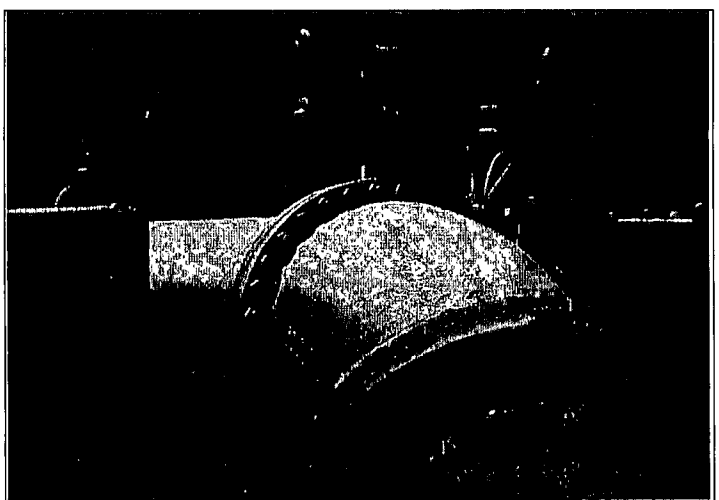


Photo No. 14 – Pump Station No. 5

Pump station No. 5 appears to be clean, well maintained and it was fully operational during this observation tour. The plant continues to discharge an estimated 15 l/sec into the New River via the Mexicali Drain (Photos No. 14).

WASTEWATER TREATMENT FACILITIES:

GONZALEZ - ORTEGA LAGOONS

Because the facility was closed, and no key was available to open the pad lock, the Gonzalez-Ortega wastewater treatment lagoons were not observed during this observation tour. This is the second time we were unable to observe the lagoons because no key was available to open the gate to the lagoons. The lagoons effluent was estimated at 20 l/sec and its wastewater color was olive green (Photos No. 15 and No. 16).

Photo No. 15– Gonzales Ortega effluent

Photo No. 16– Gonzales Ortega effluent

ZARAGOZA LAGOONS

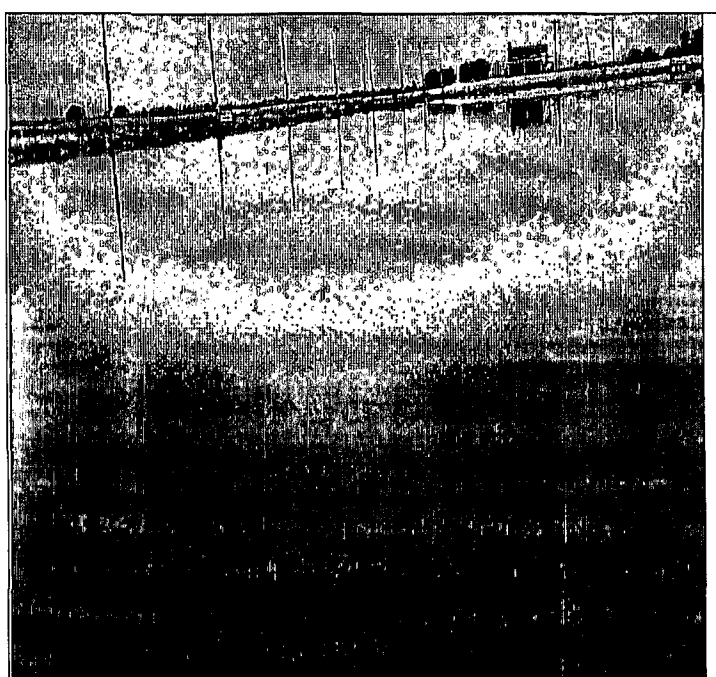


Photo No. 17– Zaragosa Lagoons

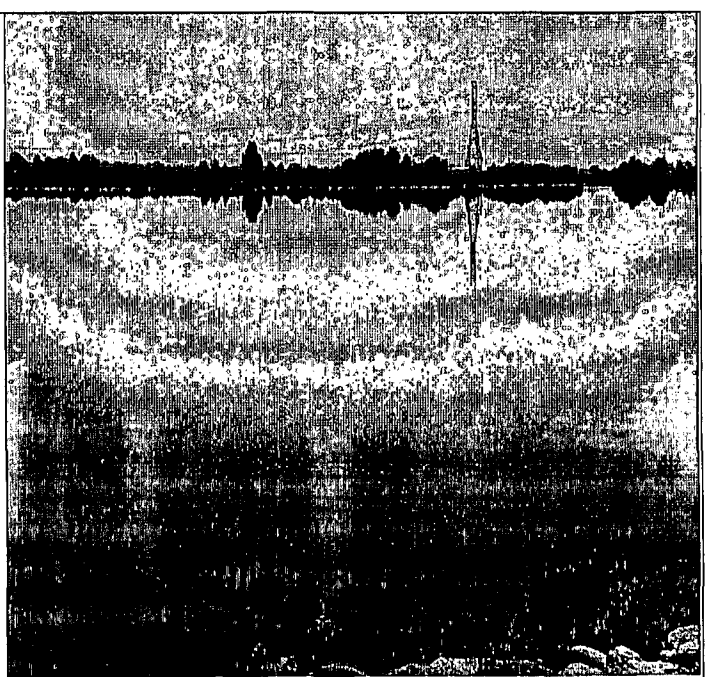


Photo No. 18– Zaragosa lagoons

The watercolor of the Zaragosa primary treatment lagoons varies from grayish to a brownish color. Watercolor in the Zaragosa secondary treatment lagoons varies in color from brownish to olive green. The lagoons are well maintained and with the exception of one of the primary anaerobic lagoons, which has been out of service for the last several months, all others lagoons are in service

and fully operational. The effluent from the lagoons is foamy and the wastewater color is olive green. A mild septic odor can be detected at the effluent channel of this facility. A stronger more persistent odor is detected at the influent head-works of this wastewater treatment plant. Scum and some algae were observed in one of the lagoons. Septic tanks continue to discharge in the lagoons. In addition, the construction of the new power plant's wastewater facilities continues west of the Zaragosa facility (Photos No. 17 - 22).

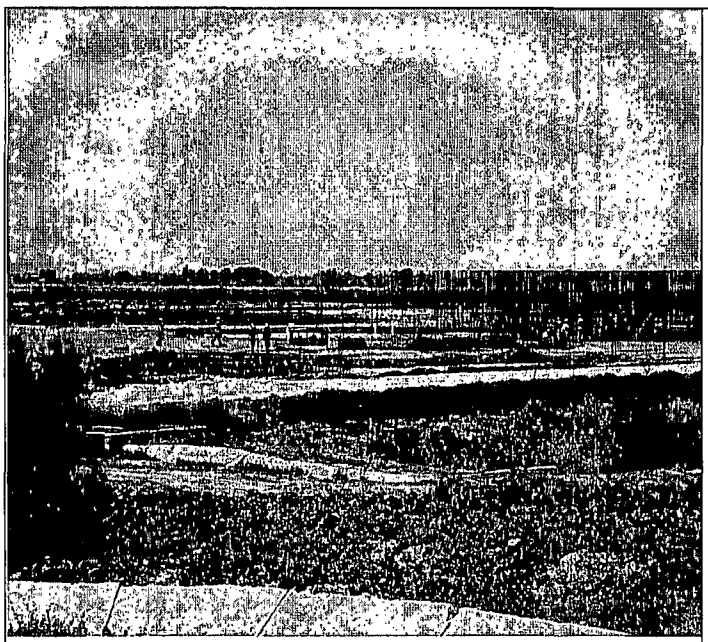


Photo No. 19– Power Plant WWTP

Photo No. 20– Zaragosa Outlet

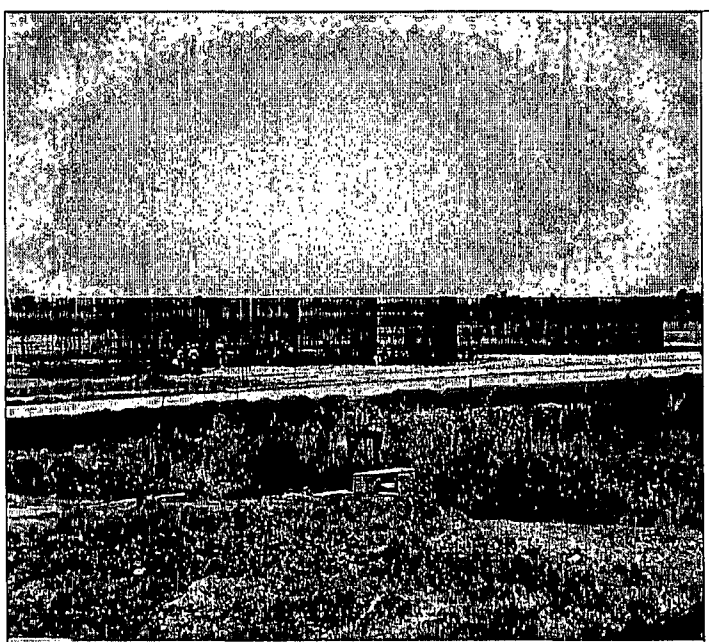


Photo No. 21– Power Plant WWTP

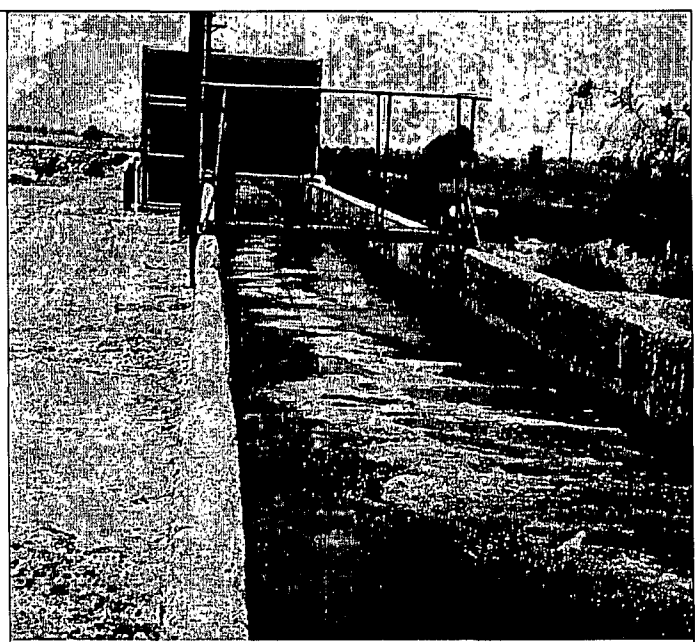


Photo No. 22– Zaragosa Inlet

NEW RIVER DISCHARGES

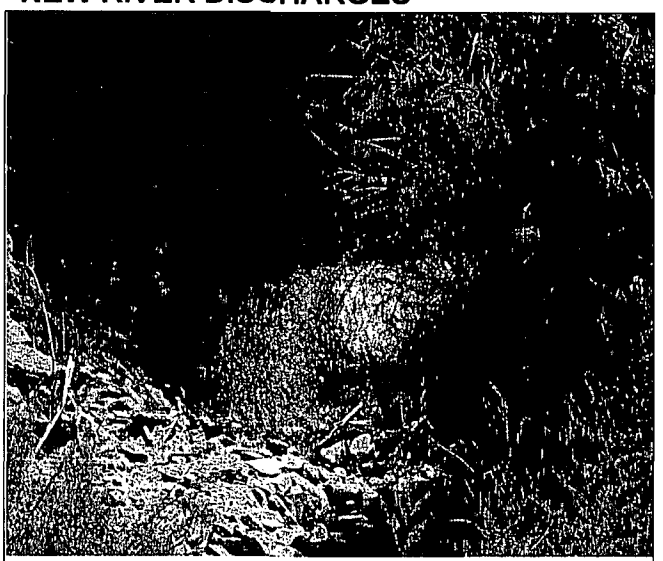


Photo No. 23 – Castellon Drain
An estimated flow of 10 l/sec of raw sewage was being discharged from the Castellon drain into the Mexicali drain. The watercolor here was green olive.

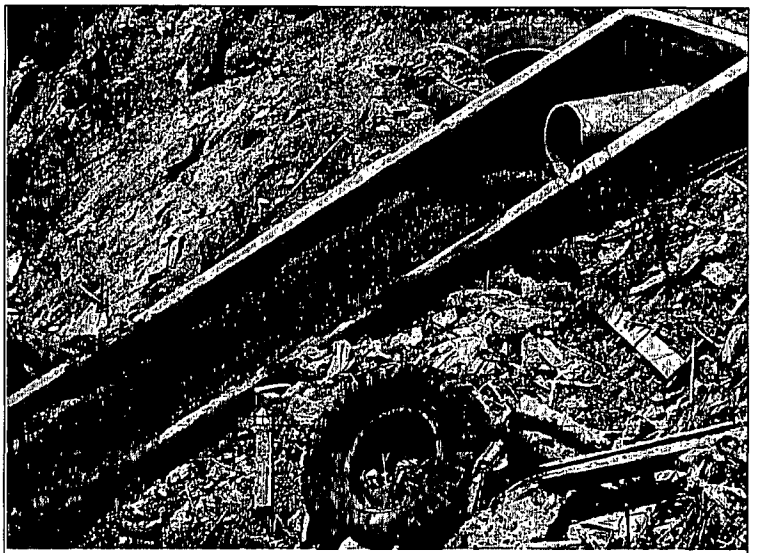


Photo No. 24 – Plant No. 5
An estimated flow of 20 l/sec of raw sewage was being discharged from the Castellon drain into the Mexicali drain. The watercolor here was green olive.

Photo No. 25- Principal Collector
An estimated flow of 110 l/sec of raw sewage was being discharged from the 48-inch principal collector into the Mexicali drain. The watercolor here was olive green.

Photo No. 26 -Nutrimex bypass
An estimated flow of 120 l/sec of raw sewage was being discharged from the Nutrimex Collector into the Mexicali Drain.

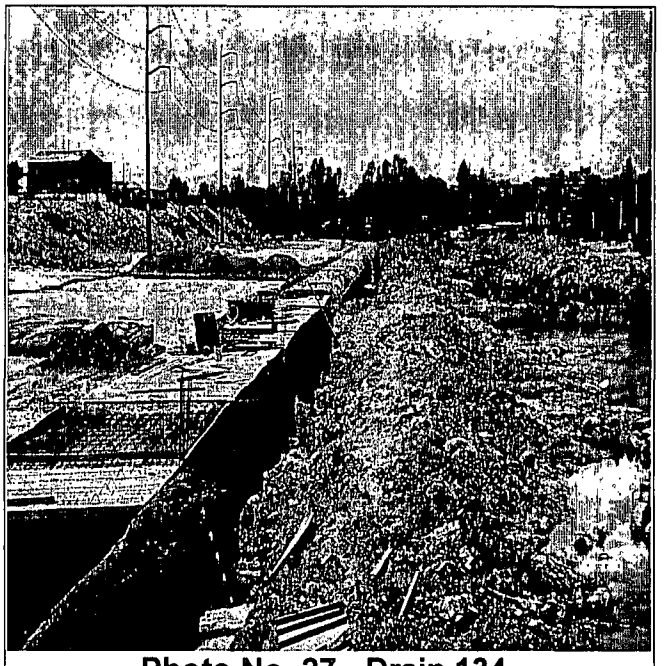


Photo No. 27 - Drain 134

All of the discharges to Drain 134 are no longer visible as a result of the encasement of the New River and the Drain.

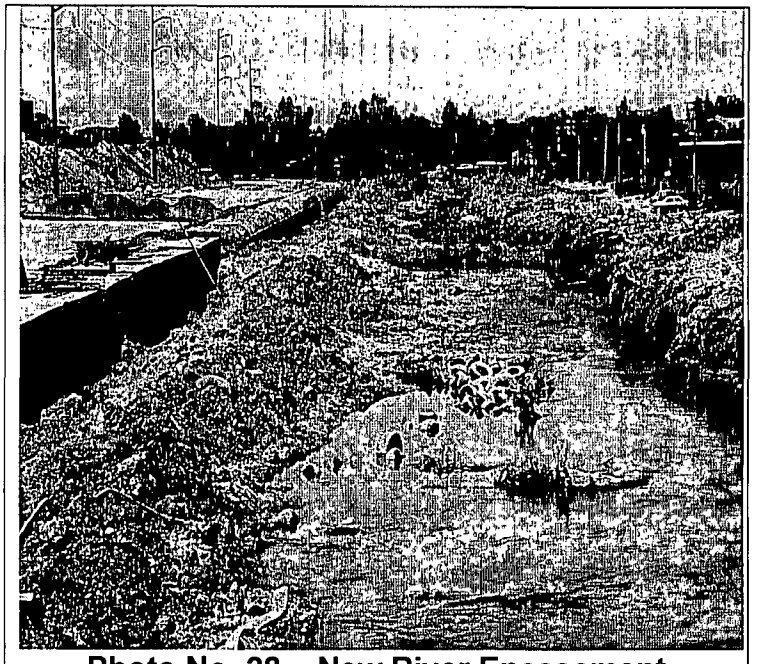


Photo No. 28 – New River Encasement

Encasement of the New River continues south towards the Boulevard Lazaro Cardenas.

Photo No. 29 – Alamo River Weir

The Alamo River Weir was observed during this Observation Tour. An estimated flow of 40 l/sec was being discharged into the United States under the All American Canal.

RECOMMENDATIONS/COMMENTS

It is imperative to implement a water quality-monitoring program to monitor illegal discharges and bypasses of sewage into the New River.

It is my impression that the Gonzales-Ortega wastewater treatment lagoons are not receiving all of the flow pumped at the Gonzales-Ortega Pump station. In my opinion, all of the wastewater flow must be lifted to the lagoons for at least partial treatment. We should request CESPM to provide us the opportunity to observe the lagoons and we should request information of why the flow is being diverted to the drain and eventually to the New River.

The problem associated with the disposal of municipal waste along the drains and the river should be discussed with the Binational Committee Members and the municipality.

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

July 7, 2001

To: Douglas Wylie, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

Subject: Binational Observation Tour of the New River in the Mexicali area

On Thursday, July 5, 2001, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. The following is a summary of my observations.

TULA WEST DRAIN (DRAIN)

PHOTO NO. 1-TULA DRAIN

PHOTO NO. 2-TULA DRAIN

The Drain's watercolor changes from a dark green color in the vicinity of the San Luis Hwy culvert to a dark green oily color in the vicinity of the Hydrogenadora Nacional facility to a milky pale combined with a blackish color in the northern part of the Drain. A scum of what appears to be motor oil was still observed upstream of the San Luis Hwy culvert. The milky color in the northern portion of the drain is suspected to be some kind of vegetal grease, which is being discharged according to CESPM from the BIMBO facility. The dark green oily colored water can be associated with a discharge of an oily substance in the drain. The dark green colored water is suspected to be domestic sewage. A mild acrid odor is prevalent along the entire length of the Drain in this industrial/residential area. Once again the Drain's channel is overwhelmed with vegetation and piles of municipal waste. A car was still observed in the Drain. Also, the slopes and banks of the Drain continue to be overwhelmed with huge stockpiles of municipal waste, tires, and dredging spoils previously removed from the Drain (Photo Nos 1 and 2).

SAN LUIS HIGHWAY CROSSING

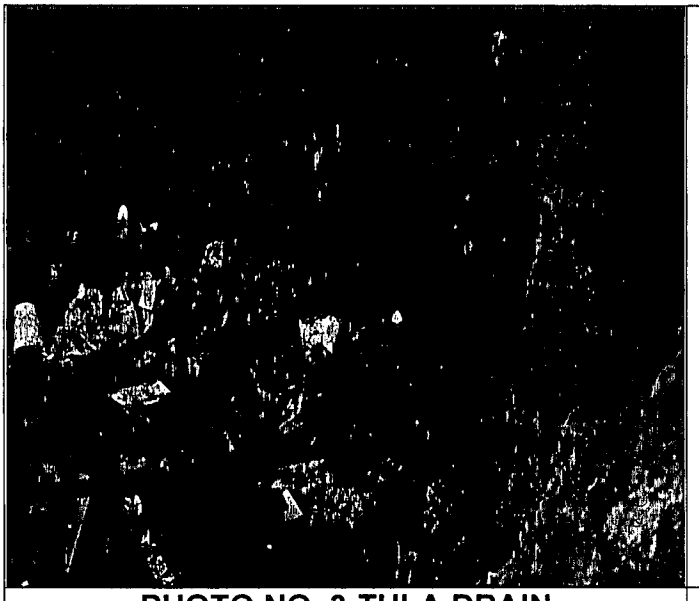


PHOTO NO. 3-TULA DRAIN

PHOTO NO. 4-TULA DRAIN

Two PVC pipes (one on each bank of the drain upstream of the San Luis Hwy culvert continue discharging an estimated 2 liter per-second (l/sec) of clear foamy wastewater into the drain. The pipe located on the left side is partially covered with sediments since the last observation tour (Photos No. 3 and No. 4). No other discharges from Quipac or the Hydrogenadora Nacional facilities into the drain were observed. Staff from CNA has continually reported that these facilities are closed. In addition, Staff from CNA also reported that the Hydrogenadora Nacional's wastewater discharge permit expired during the month of October 2000. We do not know if Quipac is still allowed to discharge into the drain.

PHOTO NO. 5-SOUTH OF TULA DRAIN	PHOTO NO. 6-VIGIA 2 DISCHARGE

A foamy discharge from the Cucapa Industrial Park (Vigia 2) into the drain was estimated in 15 l/sec. The vegetation in the drain was recently removed. No other discharge was observed from this industrial park outlets (Photos No. 5 and 6).

PUMP STATIONS:

GONZALEZ - ORTEGA PUMP STATION

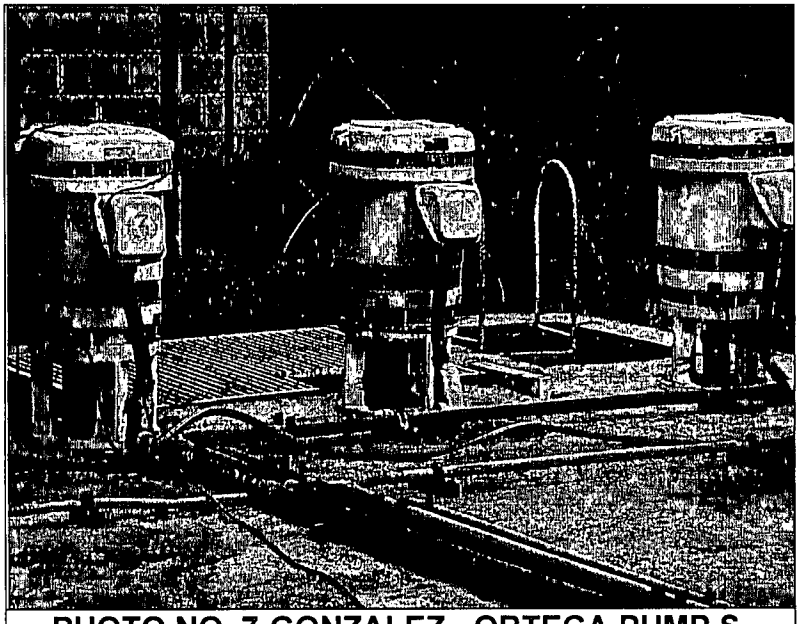


PHOTO NO. 7-GONZALEZ - ORTEGA PUMP S.

The Gonzales-Ortega Pump station is in apparent good condition and fully operational (Photo No. 7). The wastewater flow into this facility is, according to CESPM, "normal". However, I do suspect that this pumping station is currently used only to lift domestic wastewater generated in the surrounding areas to the pumping station to the Gonzales-Ortega lagoons. The rest of the wastewater is diverted in to, possibly, the Mexicali drain.

PHOTO NO. 8-PUMP STATION NO. 1

PUMP STATION NO. 1

Pump station No. 1 is in apparent good condition but partially operational, one of the pumps is being repaired (Photo No. 8). The facility appears clean and well maintained.

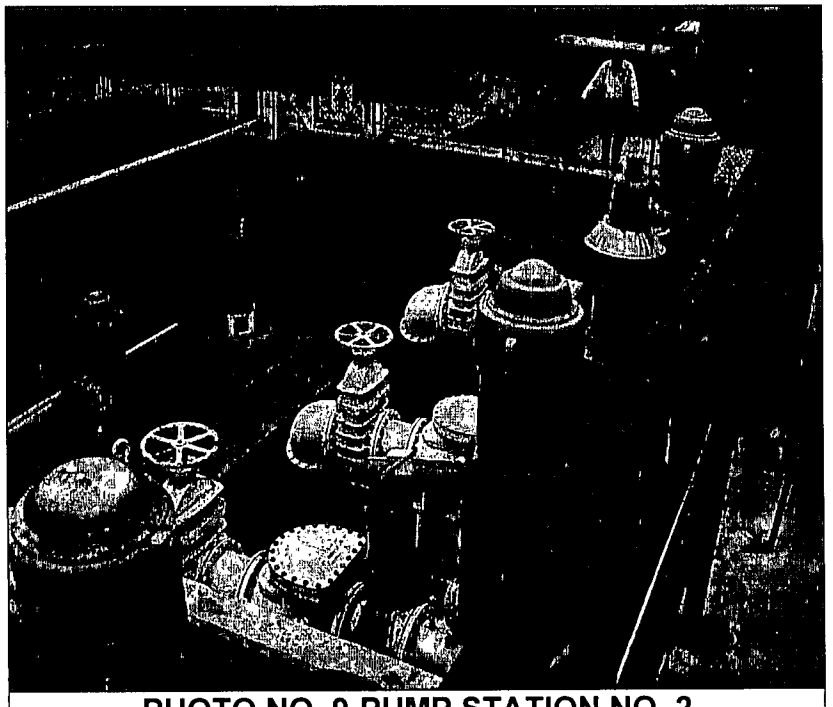


PHOTO NO. 9-PUMP STATION NO. 2

PUMP STATION NO. 2

Pump station No. 2 appears clean, well maintained and fully operational during this observation tour (Photo No. 9).

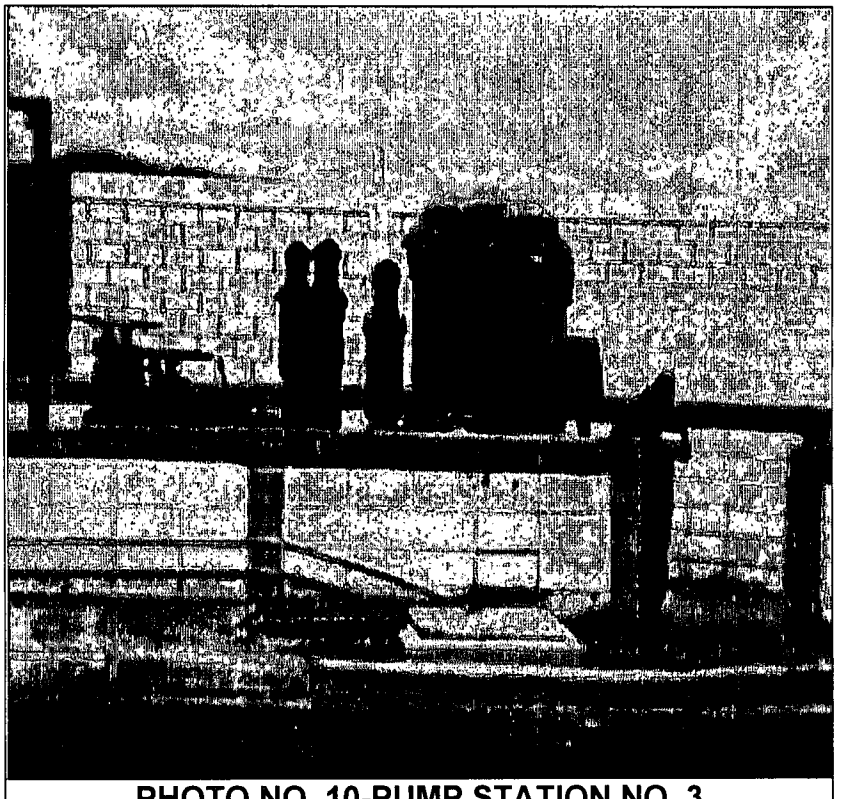


PHOTO NO. 10-PUMP STATION NO. 3

PUMP STATION NO. 3

Pump station No. 3 appears clean well maintained, and was reported to be fully operational during the observation tour (Photo No. 10).

PUMP STATION NO. 4

PHOTO NO. 11-PUMP STATION NO. 4

The construction of pump station No. 4 is complete and appears clean and well maintained. However, this pumping station will continue idle until the new Mexicali II wastewater treatment plant is constructed (Photo No. 11).

PUMP STATION NO. 5

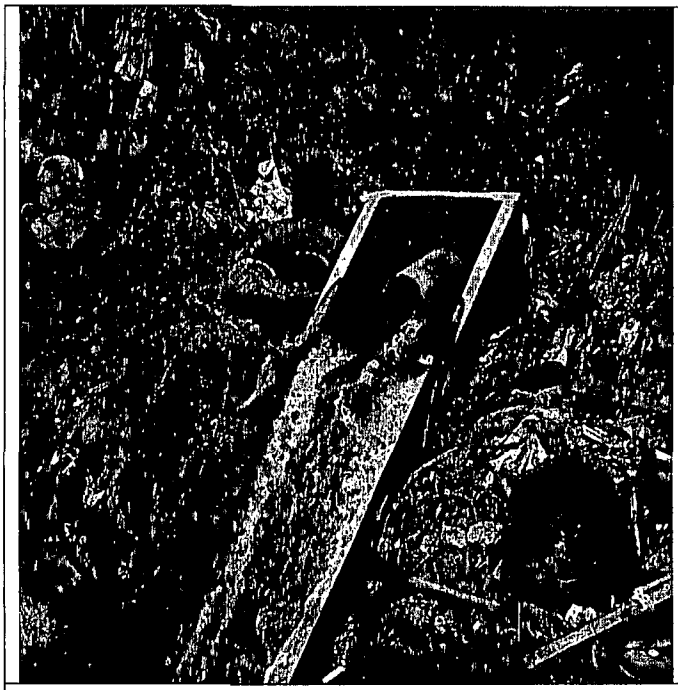


PHOTO NO. 12-P. S. NO. 5 EFFLUENT

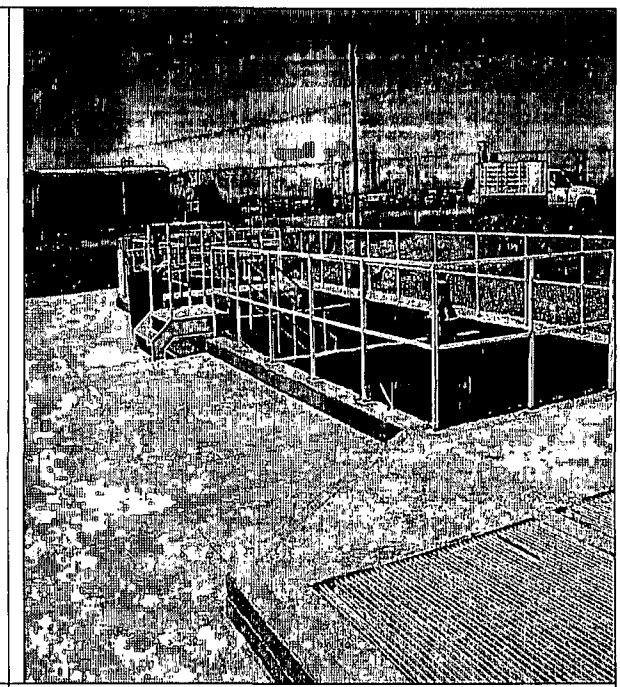


PHOTO NO. 13-PUMP STATION NO. 5

Pump Station No. 5. This facility appears clean and well maintained and is reported to be fully operational. During this tour the plant was observed to discharge an estimated flow of 300 l/sec for about 5 minutes into the New River via the Mexicali Drain, at a point just above the confluence of the Mexicali Drain and New River, east of Lake Xochimilco (Photos No. 12 and 13).

WASTEWATER TREATMENT FACILITIES:

GONZALEZ - ORTEGA LAGOON

The flow into the Gonzales-Ortega lagoons is minimal. Four of the lagoons are dry. These lagoons should be dredged because of sludge and grit build-up. However, all of the eight lagoons are still operational; it is unknown why only four of the lagoons are currently used. Based on this tour observation, my suspicion regarding the majority of the flow being diverted to another location is stronger. The lagoon's watercolor varies from dark green to a grayish color. The effluent from the lagoons is minimal and possesses a greenish/gray color (Photos No. 14 - 19).

PHOTO NO. 14-GONZALEZ - ORTEGA LAGOONS

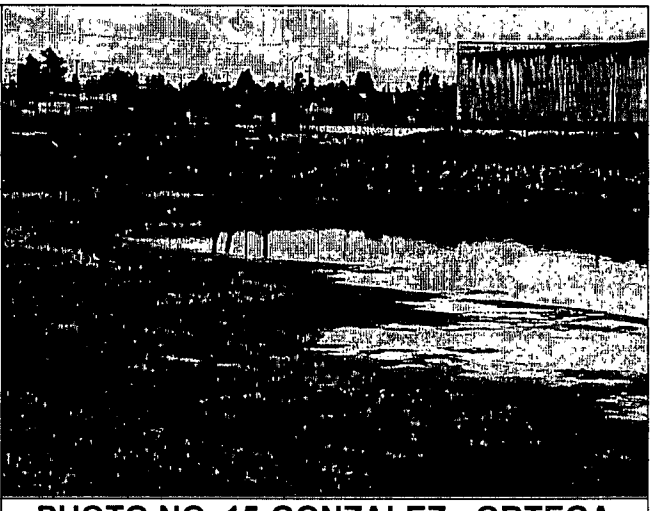


PHOTO NO. 15-GONZALEZ - ORTEGA LAGOONS

PHOTO NO. 16-GONZALEZ - ORTEGA LAGOONS

PHOTO NO. 17-GONZALEZ - ORTEGA LAGOONS

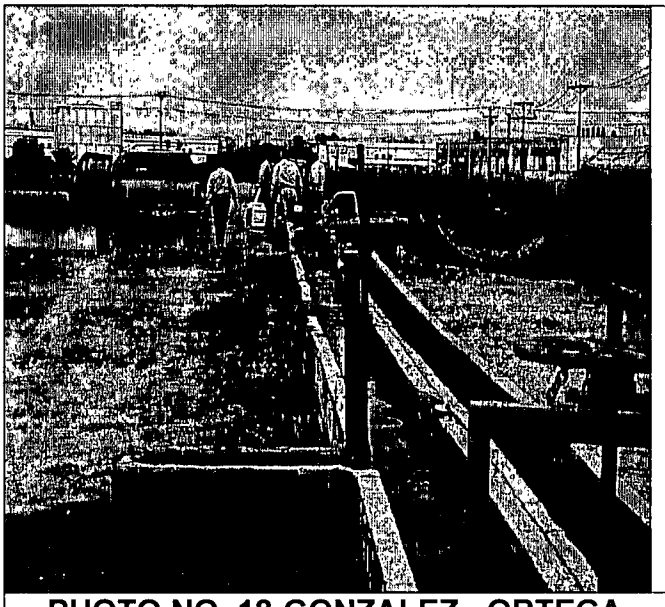


PHOTO NO. 18-GONZALEZ - ORTEGA INFLUENT

PHOTO NO. 19-GONZALEZ - ORTEGA EFLUENT

ZARAGOZA LAGOONS

The watercolor of the primary lagoons varies from dark to a grayish color. Watercolor in the secondary treatment lagoons varies in color from brown greenish to olive green. The lagoons are well maintained and with the exception of one of the anaerobic lagoons all of the lagoons are in service. The effluent from the lagoons is foamy and has an olive green color. A flow meter was installed at the influent of the plant. The construction of the new power plant's wastewater treatment plant continues. Truck haulers continue to discharge at the headwork influent facilities (Photos No. 20 and No. 25).

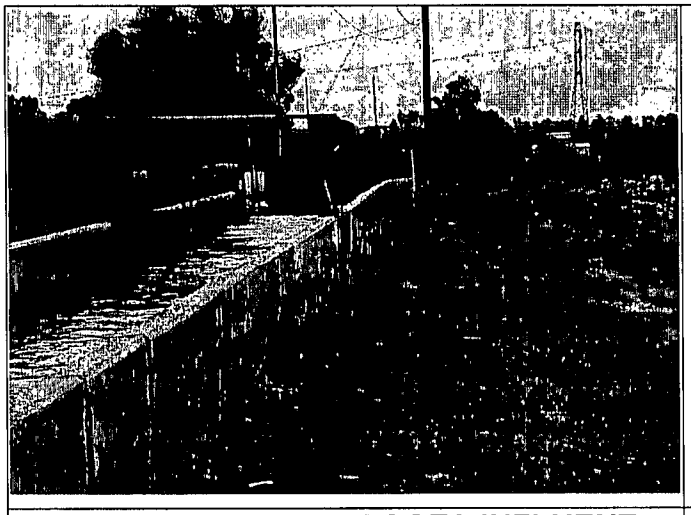


PHOTO NO. 20-ZARAGOZA INFLUENT

PHOTO NO. 21-ZARAGOZA EFFLUENT

PHOTO NO. 22-ZARAGOZA LAGOONS

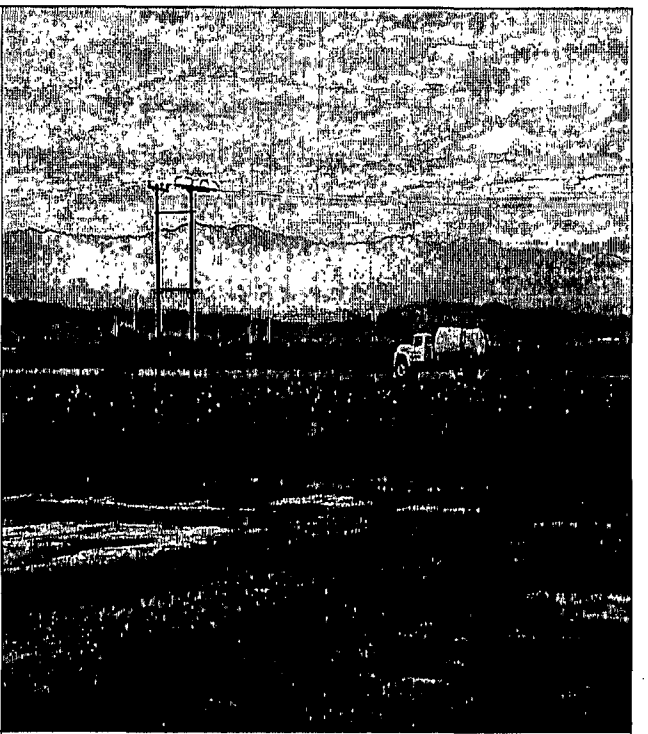


PHOTO NO. 23-TRUCK HAULER

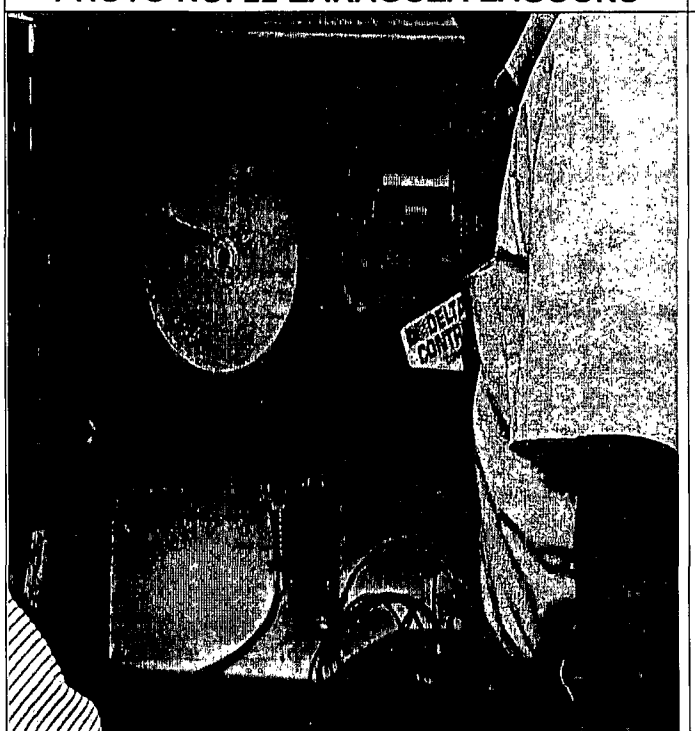


PHOTO NO. 24- ZARAGOZA FLOWMETER

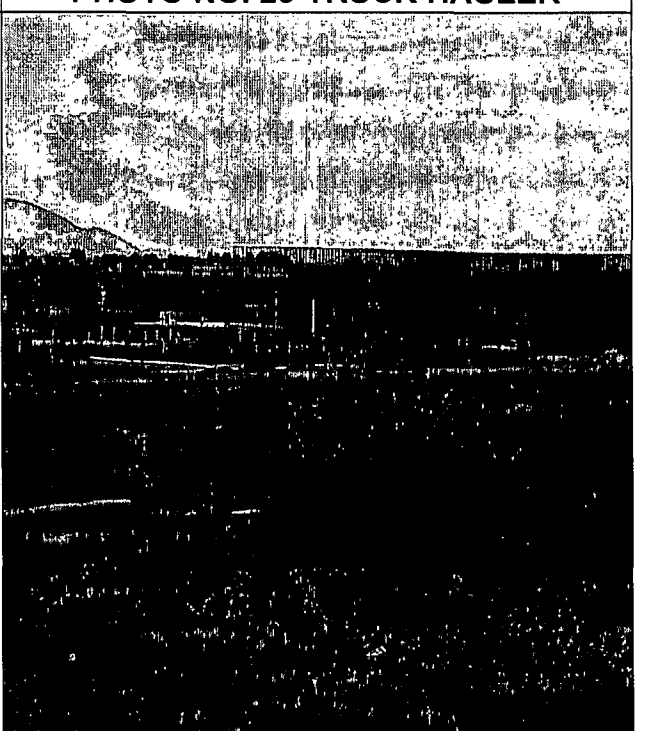


PHOTO NO. 25-NEW POWER PLANT

NEW RIVER DISCHARGES

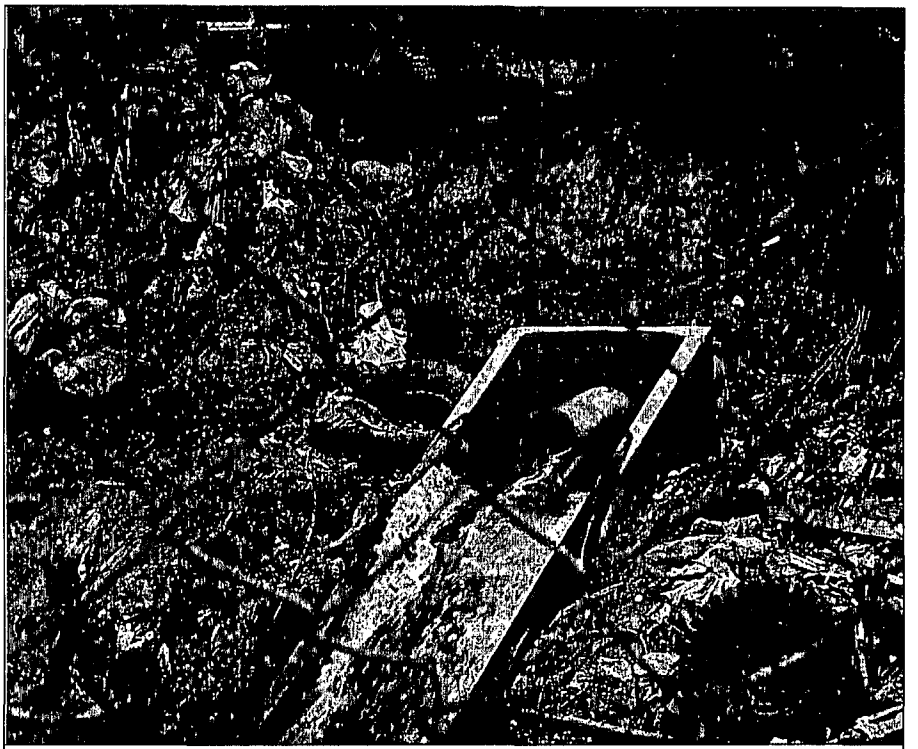


PHOTO NO. 26 - PLANT NO. 5

PLANT NO. 5: An estimated flow of 15 l/sec of raw sewage was being discharged from the Plant No. 5 into the New River (Photos No. 26).

PHOTO NO. 27- KEN/MEX PLANT

KEN/MEX PLANT
A trickle of water flow was being discharged into the drain. The drain is still covered with piles of domestic waste (Photo No. 27).

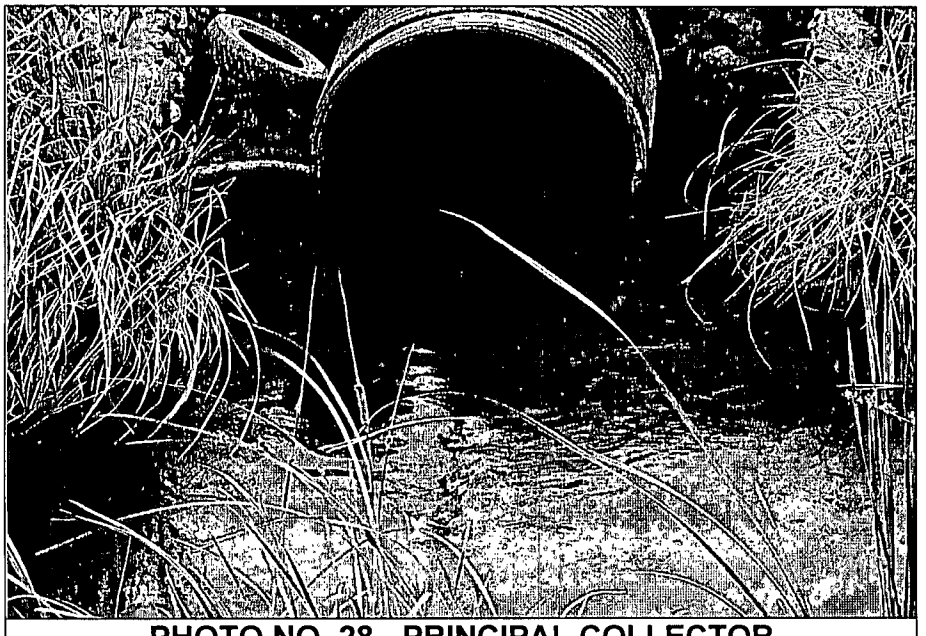


PHOTO NO. 28 - PRINCIPAL COLLECTOR

48-INCH PIPE, PRINCIPAL COLLECTOR: An estimated flow of 120 l/sec of raw sewage was being discharged from the 48-inch principal collector into the Mexicali drain. The watercolor here was olive green; a mild septic odor was also detected in this location suggesting that the effluent is mostly from domestic sources (Photo No. 28).

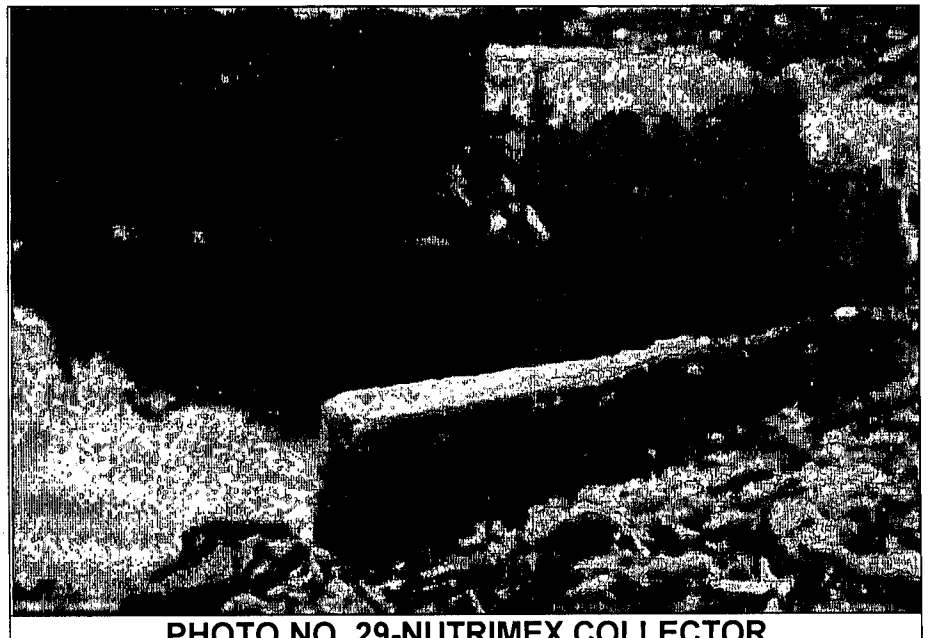


PHOTO NO. 29-NUTRIMEX COLLECTOR

NUTRIMEX COLLECTOR: An estimated flow of 150 l/sec of raw sewage was being discharged from the Nutrimex Collector into the Mexicali Drain. The watercolor in the drain was dark green; a mild septic odor was also detected in this location suggesting that this effluent is mostly from domestic sources (Photo No. 29).

PHOTO NO. 30 – PUMP NO. 26

PUMP NO. 26: An estimated flow of 50 l/sec of raw sewage was being discharged from the pump No. 26 station into the New River. The watercolor here was brownish and a mild septic odor was detected in this location (Photos No. 30).

PHOTO NO. 31-NEW RIVER ENCASEMENT

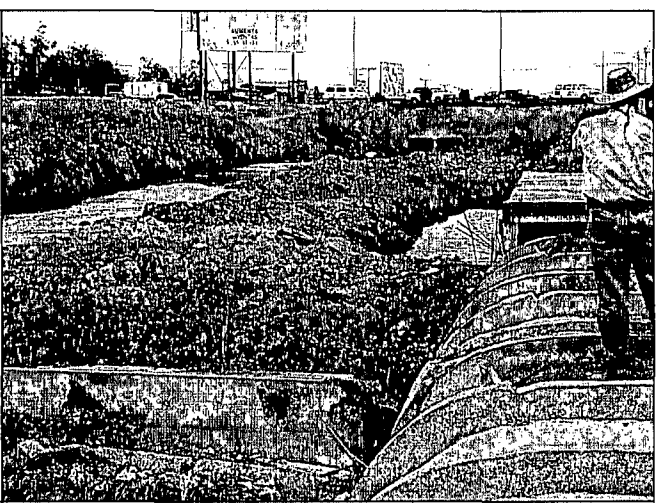


PHOTO NO. 32-NEW RIVER ENCASEMENT

All of the discharges to Drain 134 are no longer visible as a result of the encasement of the New River and the Drain (Photo No. 31 and 32). Encasement of the New River continues toward Lake Xochimilco. Eventually, most of the discharges to the New River in between the international boundary and Lake Xochimilco will no longer be visible because of the encasement. No other discharges were observed into the New River during this observation Tour.

PHOTO NO. 33-ALAMO RIVER WEIR

ALAMO RIVER WEIR
The Alamo River Weir was observed during this Observation Tour. An estimated flow of 40 l/sec was being discharged into the United States (Photo No. 33).

RECOMMENDATIONS/COMMENTS

It is imperative to implement a water quality-monitoring program to monitor illegal discharges and bypasses of sewage into the New River.

The problem associated with the disposal of domestic solid wastes and potentially hazardous wastes into surface waters continues. A request for local authorities to implement punitive measures to control/reduce the problem associated with the disposal and cleanup of solid wastes and potential hazardous materials along the drain's banks and in the closed dumpsites is strongly recommended. This problem should be elevated for discussion and potential solutions to the Binational Technical Committee.

CESPM should be requested to clarify if the wastewater flow currently diverted at the Gonzales-Ortega Pump Station is being discharged into the to the Zaragosa Lagoons or into the drain system and eventually into the New River.

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

September 8, 2001

To: Douglas Wylie, P.E.

From: J. Gpe. Figueroa-Acevedo, Project Coordinator

Subject: Binational Observation Tour of the New River in the Mexicali area

On Thursday, July 26, 2001, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. The following is a summary of my observations.

TULA WEST DRAIN (DRAIN)

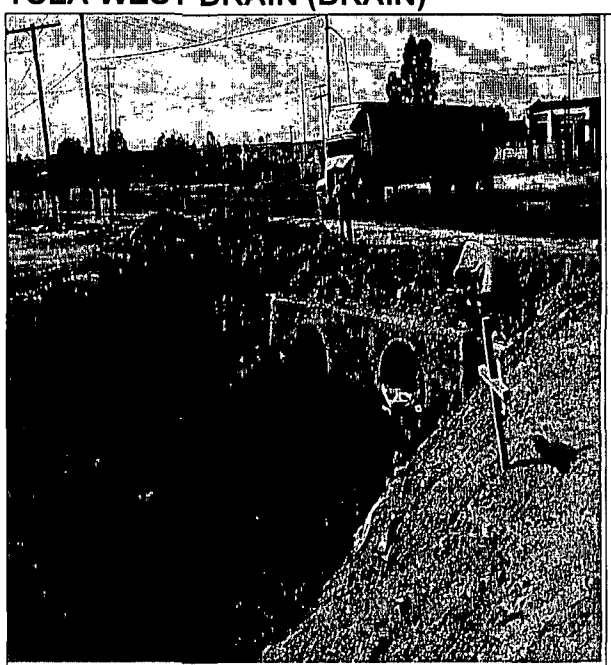


PHOTO NO. 1 - TULA DRAIN

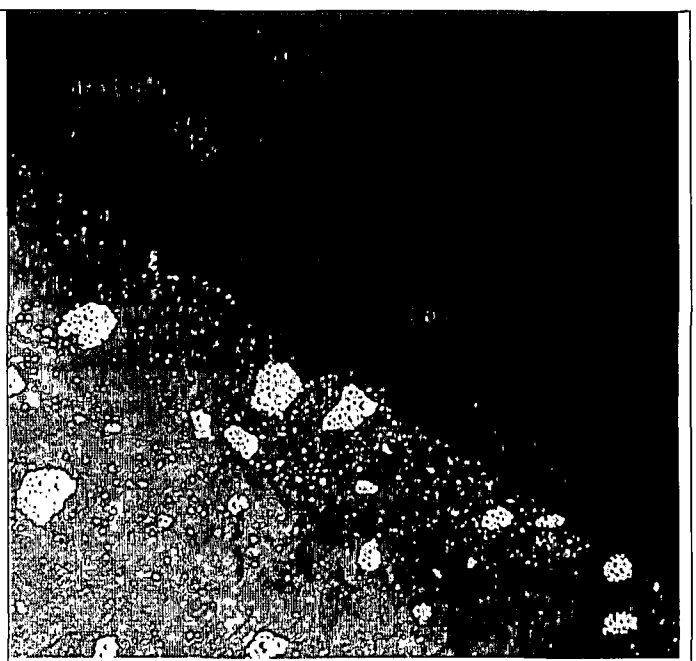


PHOTO NO. 2 - TULA DRAIN

As previously observed, the drain's watercolor changes from a dark green color in the vicinity of the San Luis Hwy culvert to a blackish-oily color in the vicinity of the Hydrogenadora Nacional facility and to a milky pale – grayish color in the northern part of the drain. It's suspected that an illegal dumping/discharging of an oily substance occurred or is occurring around the Hydrogenadora Nacional location. The milky pale – grayish color in the northern portion of the drain is suspected to be some kind of vegetal grease. The drain's channel looks cleaner. However, the slopes and banks continue to be overwhelmed with municipal waste, tires, and dredging spoils previously removed from the Drain. In addition to the usual discharges from the PVC pipes located by the San Luis Hwy, a trickle of wastewater was observed from the Parque Industrial La Vigia discharge outlet into the drain. No others discharges from Quipac, the Hydrogenadora Nacional, or the Vidriera Mexicali (Vitro-Mex) facilities were observed during this tour (Photos No. 1 - 4).

PHOTO NO. 3 - TULA DRAIN

PHOTO NO. 4 - TULA DRAIN

PUMP STATIONS:

GONZALEZ - ORTEGA PUMP STATION

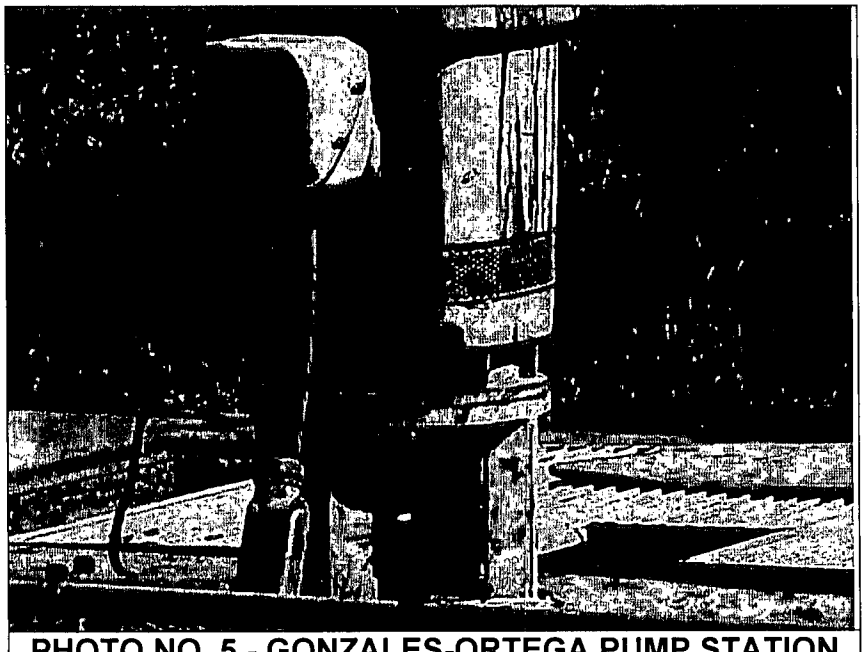


PHOTO NO. 5 - GONZALES-ORTEGA PUMP STATION

The Gonzales-Ortega Pump station is in apparent good condition and fully operational (Photo No. 5). CESPM reports that the wastewater inflow to this facility is normal and being lifted to the Gonzales-Ortega lagoons for treatment. The facilities appears clean and well maintained.

PUMP STATION NO. 1

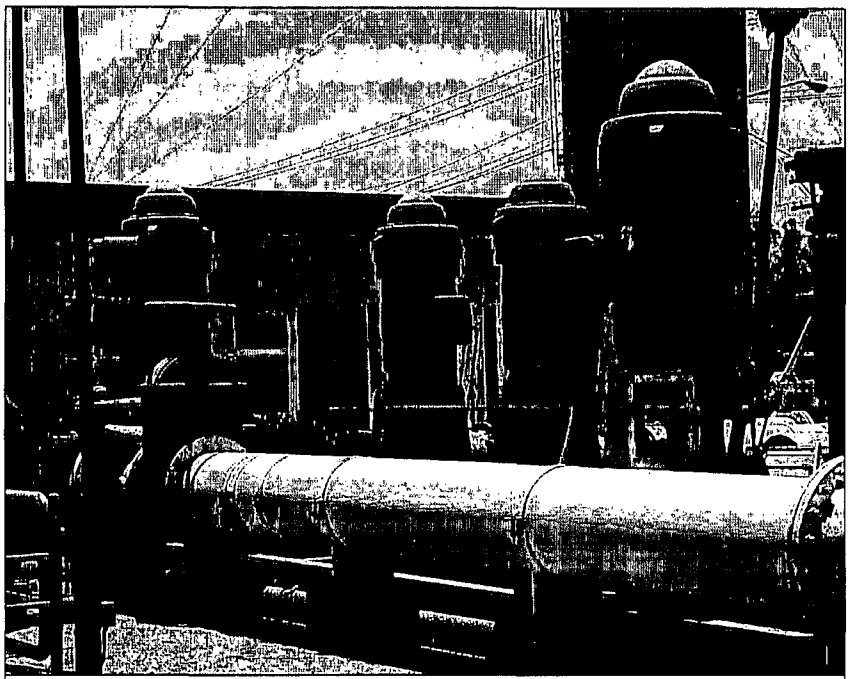


PHOTO NO. 6 – PUMP STATION 1

Pump station No. 1 is in apparent good condition but partially operational; two of the pumps are being repaired (Photo No. 6). The facilities appears clean and well maintained.

PUMP STATION NO. 2

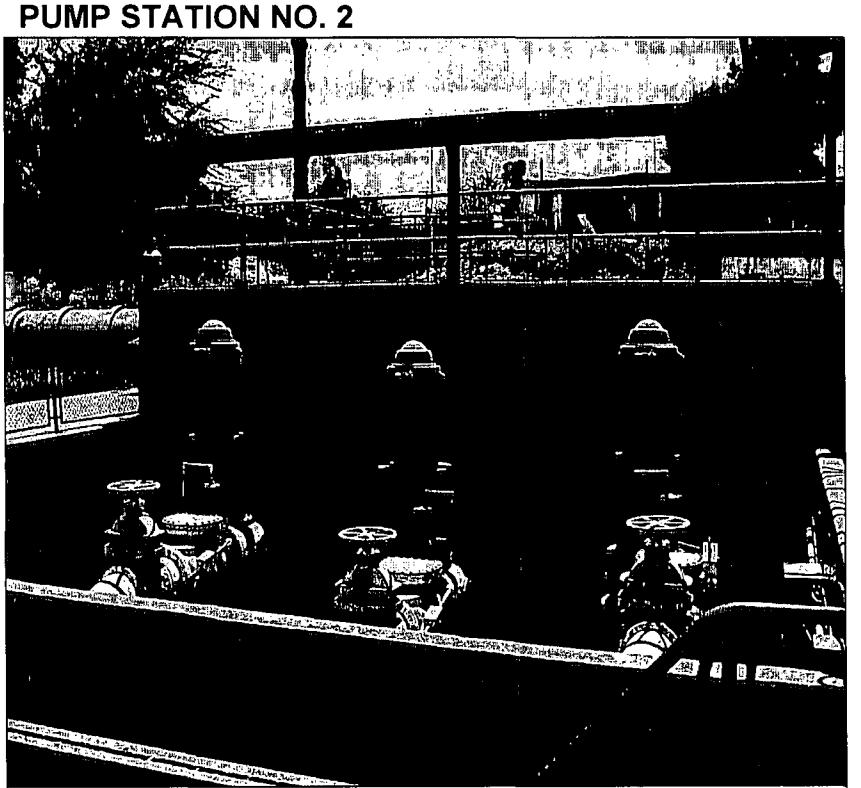


PHOTO NO. 7 – PUMP STATION 2

Pump station No. 2 appears clean and well maintained, the facility was observed to be operable during the last two observation tours (photo No. 7).

PUMP STATION NO. 3

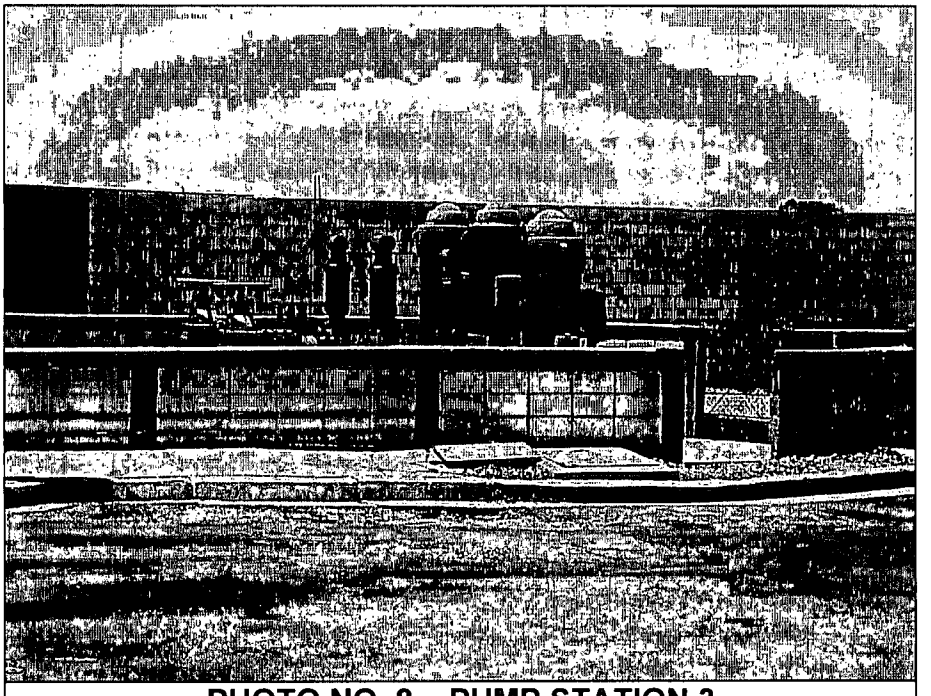


PHOTO NO. 8 – PUMP STATION 3

Pump station No. 3 appears clean and well maintained, and was reported to be fully operational during the observation tour (Photo No. 8).

PUMP STATION NO. 4

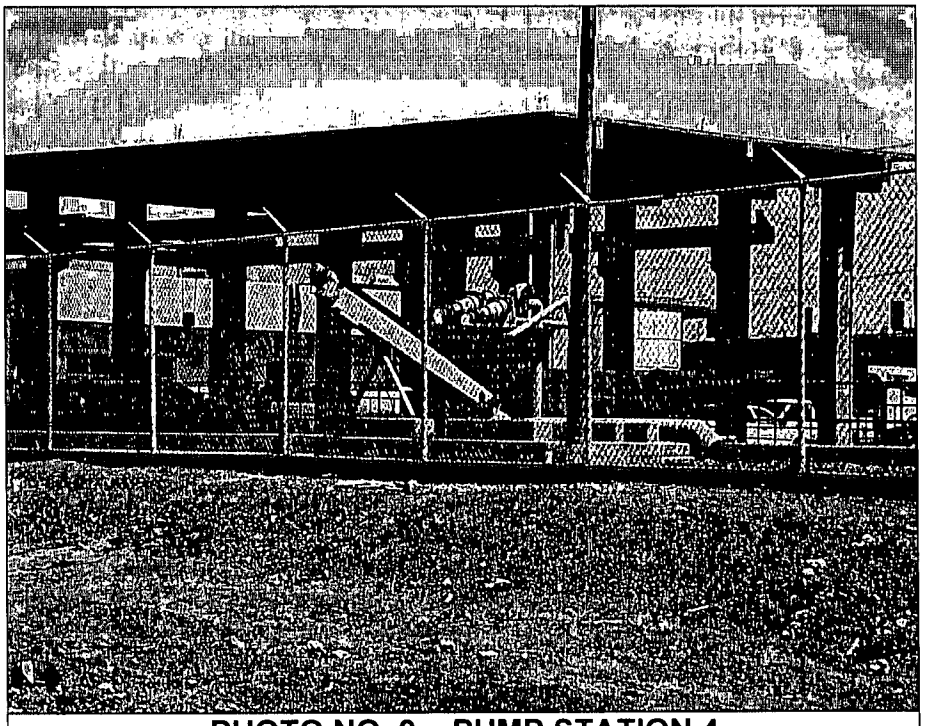


PHOTO NO. 9 – PUMP STATION 4

Pump station No. 4 look clean and well maintained. This pump station continues to be idle waiting for the construction of the Mexicali II WWTP (Photo No. 9).

PUMP STATION NO. 5

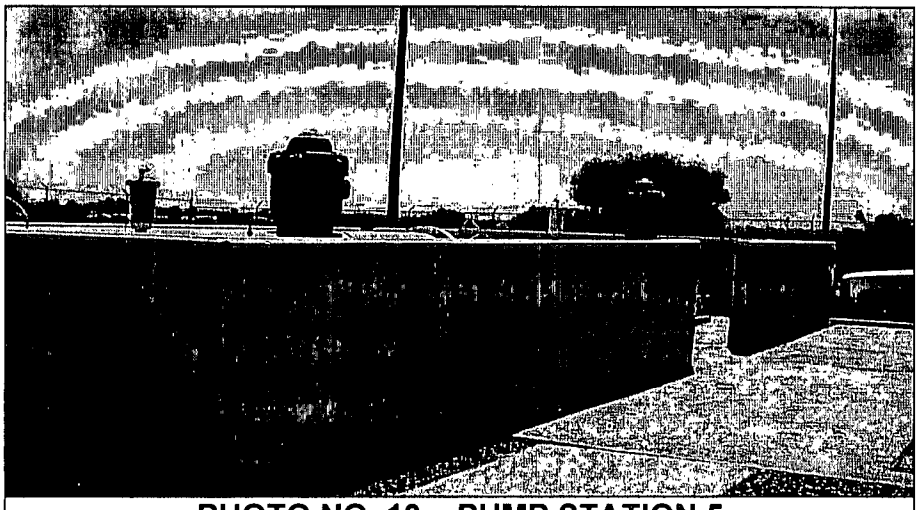


PHOTO NO. 10 – PUMP STATION 5

Pump station No. 5 appears clean well maintained, and its two pumps were reported to be operational during the observation tour (Photo No. 10).

WASTEWATER TREATMENT PLANTS:

GONZALEZ - ORTEGA LAGOONS

During this observation tour, the effluent from the lagoons appeared to be stagnated or minimal, in addition, as in the previous tour, half of the lagoons were observed to be dry and the rest were barely full. CESPM informed us that the lagoons were operational and no flow has been diverted to the drain. However, during the observation of the Gonzales-Ortega pump station it was noticed that the pumps were lifting an estimated wastewater flow of at least 70 l/sec to the Gonzales-Ortega lagoons for treatment. Based on the last observation and a quick calculation, there must be a diversion of the majority of the flow from the Gonzales-Ortega pump station to the Mexicali drain or somewhere else. Regardless of the influent to the lagoons, the effluent watercolor possesses a brownish-gray color (Photos No. 11 and No. 14).

PHOTO NO. 11- G. ORTEGA LAGOONS	PHOTO NO. 12 – G. ORTEGA LAGOONS
	
PHOTO NO. 13- G. ORTEGA INFFLUENT	PHOTO NO. 14 – G. ORTEGA EFFLUENT

ZARAGOZA LAGOONS

The watercolor of the primary lagoons varies from brownish to a grayish color. Watercolor in the secondary treatment lagoons varies in color from brown greenish to olive green. Algae were observed in one of the lagoons. The lagoons are well maintained and with the exception of one of the anaerobic lagoons all the lagoons are in service. The effluent from the lagoons is somewhat foamy and has a strong green color. The construction of the new power wastewater treatment plant continues. (Photos No. 15 and No. 20).

PHOTO NO. 15 - ZARAGOZA INFLUENT	PHOTO NO. 16- ZARAGOZA LAGOONS

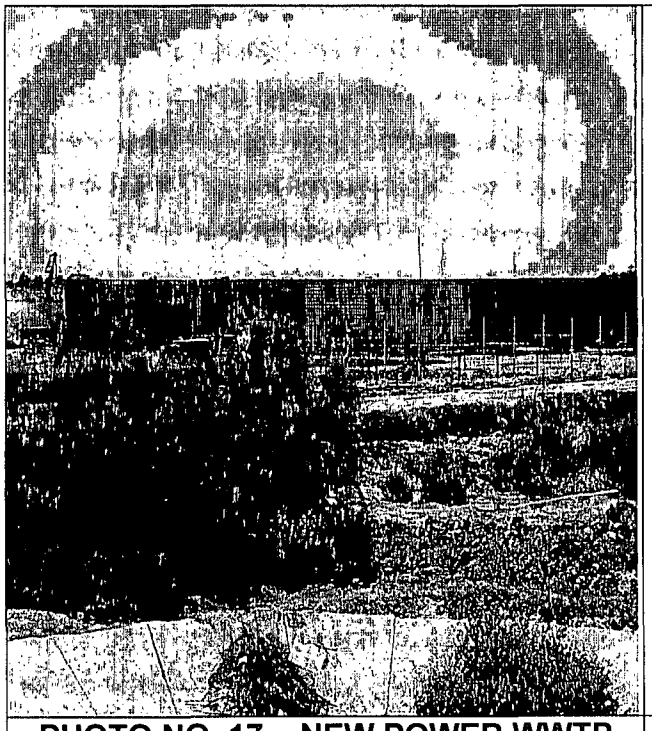
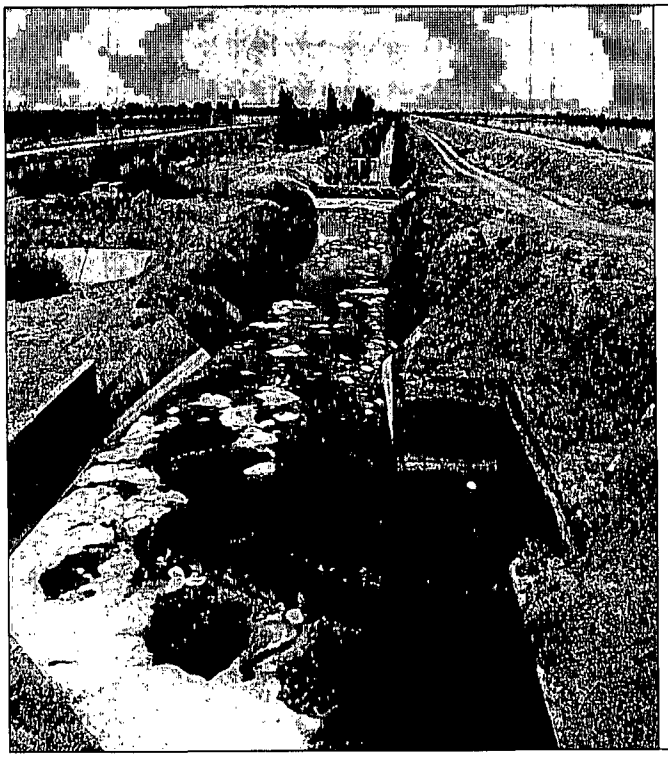


PHOTO NO. 17 – NEW POWER WWTP	PHOTO NO. 18- NEW POWER WWTP



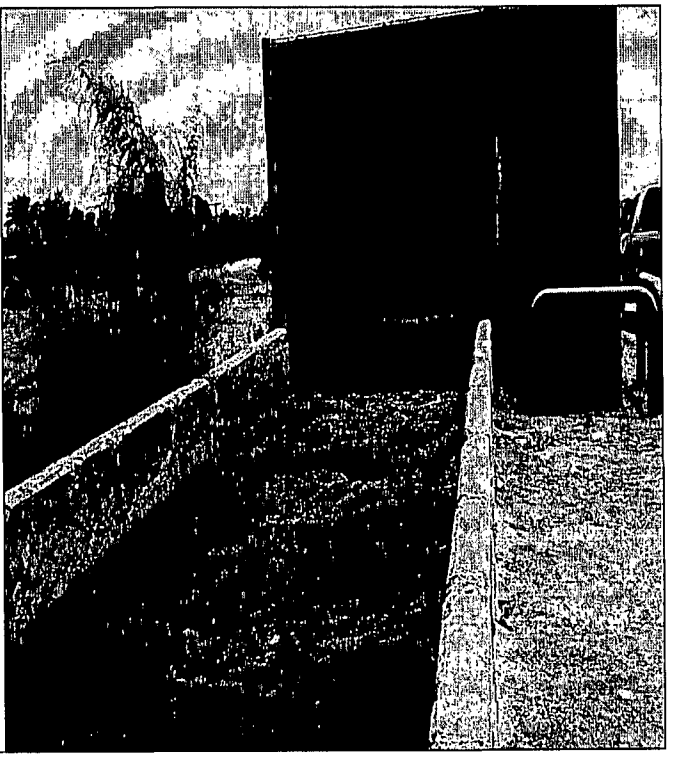


PHOTO NO. 19 – ZARAGOZA EFFLUENT	PHOTO NO. 20 - ZARAGOZA INFLUENT

DISCHARGES TO THE NEW RIVER

PHOTO NO. 21 - TULA DRAIN BY SAN LUIS HWY

TULA DRAIN BY SAN LUIS HWY: Two PVC pipes located north of the San Luis Highway culvert one on each side of the drain's banks continue discharging an estimated 2 l/sec of clear foamy wastewater into the Tula drain the pipe located on the left side of the drain has been partially covered with soil sediments but the discharge to the drain still continues (Photos No. 21).

PLANT NO. 5: An estimated flow of 15 l/sec of raw sewage was being discharged from the Plant No. 5 into the New River (Photo No. 22).

PHOTO NO. 22 - PLANT NO. 5

PHOTO NO. 23 – CASTELLAN DRAIN

CASTELLAN DRAIN: An estimated flow of 5 l/sec of raw sewage was being discharged from the Castellan drain into the New River (Photo No. 23).

48-INCH PIPE, PRINCIPAL COLLECTOR: An estimated flow of 120 l/sec of raw sewage was being discharged from the 48-inch principal collector into the Mexicali drain. The watercolor here was olive green; a mild septic odor was also detected in this location suggesting that the effluent is mostly from domestic sources (Photos No. 24).

PHOTO NO. 24– PRINCIPAL COLLECTOR

PHOTO NO. 25– PUMP NO. 26

PUMP NO. 26: An estimated flow of 50 l/sec of raw sewage was being discharged from the pump No. 26 station into the New River. The watercolor here was brownish and a mild septic odor was detected in this location (Photos No. 25).

PHOTO NO. 26- NUTRIMEX COLLECTOR

NUTRIMEX: An estimated flow of 150 l/sec of raw sewage was being discharged from the Nutrimex Collector into the Mexicali Drain. The watercolor in the drain was dark green; a mild septic odor was also detected in this location, suggesting that this effluent is mostly from domestic sources (sources (Photo No. 26).

All of the discharges to Drain 134 are no longer visible as a result of the encasement of the New River. The Encasement of the New River continues toward Lake Xochimilco. Eventually, most of the discharges to the New River in between the international boundary and Lake Xochimilco will no longer be visible because of the encasement. (Photo No. 27 and 28).

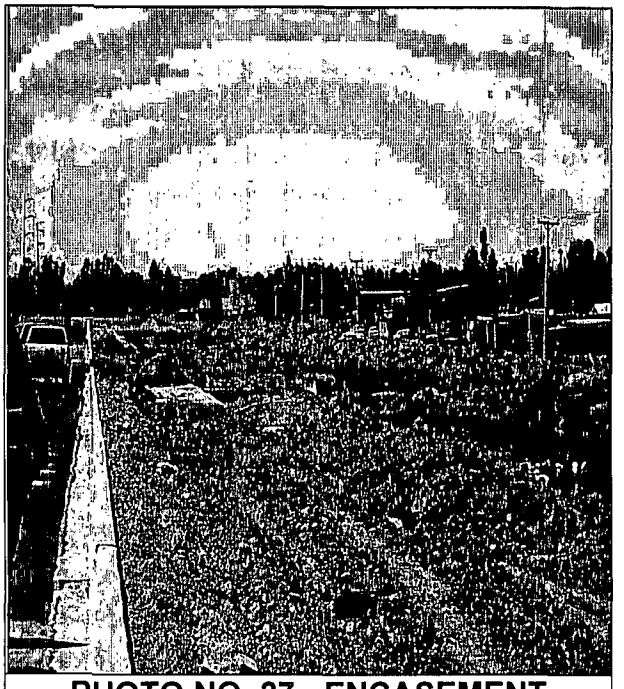


PHOTO NO. 27 - ENCASEMENT

PHOTO NO. 28 - ENCASEMENT

No other discharges were observed into the New River during this observation Tour.

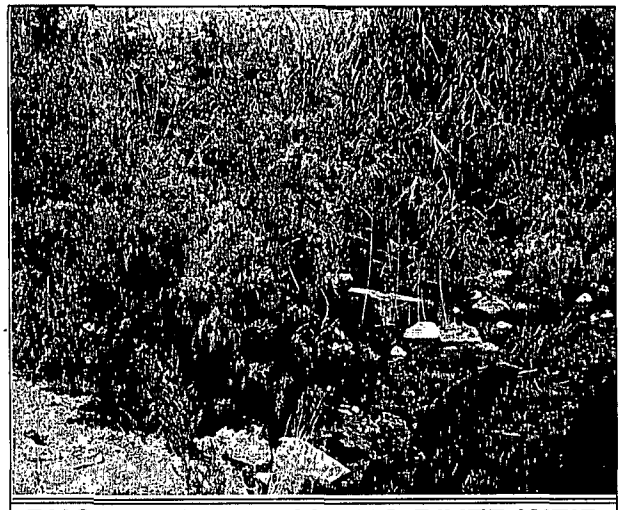


PHOTO NO. 29 – ALAMO RIVER WEIR

ALAMO RIVER WEIR

The Alamo River Weir was observed during this Observation Tour. An estimated flow of 40 l/sec was being discharged into the United States of America (Photo No. 29).

RECOMMENDATIONS/COMMENTS

It is imperative to implement a water quality-monitoring program to continue the monitor and keep track of illegal discharges and bypasses of sewage into the New River.

The evident clandestine dumping of domestic solid wastes and potentially hazardous wastes into the New River and its watershed's surface waters continues.

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

November 7, 2000

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Dianne Feinstein, U.S. Senator, c/o Warren Weinstein, Washington, D.C.
Mary Bono, U.S. Congresswoman, Washington, D.C.
Carole Starr, Congressman Hunter's Office, Imperial, CA
Dave Kelley, Senator, Palm Desert, CA
Jim Battin, Assemblyman, Palm Desert, CA
Shere Mann, c/o Stephen J. Peace, Assemblyman, Chula Vista, CA
John Bernal, Commissioner, U.S. Sec., International Boundary and Water Commission, El Paso, TX
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Mike Richmond, San Diego, CA
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Tom Wolf, Imperial County Division of Environmental Health, El Centro, CA
Robertta Burns, Asst. County Administrative Officer, Imperial County, El Centro, CA
Jose Luis Lopezgamez, Imperial Irrigation District, Winterhaven, CA
Dean Hager, Imperial Irrigation District, Imperial

RE: New River Special Observation Tour Staff Report

Enclosed is the staff report for another Observation Tour conducted on October 2000.

Phil A. Gruenberg
Executive Officer

Enc.

File: INTER

California Regional Water Quality Control Board
Colorado River Basin Region

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Gray Davis
Governor

DATE: November 1, 2000

TO: Jose L. Angel, Senior WRC Engineer

FROM: Beatrice Griffey, Associate Engineering Geologist

SUBJECT: October 25, 2000 Semiannual Binational Observation Tour of seven Mexican Industrial Facilities that are considered potential threats to the water quality of the New River within the United States.

On October 25, 2000, I accompanied the following individuals on a Mexicali industrial facility observation tour:

Name	Affiliation
Al Goff	U.S. IBWC
Ernesto Murillo Navarrate	C.N.A.
Juan Alfredo Riosmoreno	CILA - Mexico

The tour was conducted to observe and document the quantity and characteristics of industrial wastewater discharges within the Mexican portion of the New River Watershed. Industrial facilities toured were:

1. An animal processing plant (Sukarne El Sabor del Norte);
2. A slaughter house (Rastro Municipal);
3. A hog farm (Porcicola Del Valle);
4. The Cerro Prieto geothermal plant (Comision Federal del Electricidad);
5. A steel mill and processing plant (Compania Siderurgica de California);
6. A flour/vegetable oil plant (Maseca); and
7. A paper mill and recycling plant (Fabrica de Papel San Francisco).

The following paragraphs provide you with a description of tour activities and my observations thereof in order of occurrence.

ANIMAL PROCESSING PLANT - SUKARNE EL SABOR DEL NORTE

Facility wastewater is discharged into several large evaporation ponds located north of the facility (Figure 1). The CNA representative stated that: (1) the natural soils have a high clay content, hence ground water contamination is not an issue at the site; (2) the facility adds a chemical to the effluent which decreases the concentration of total suspended solids; (3) chlorine is also added to facility effluent for disinfection purposes; and (4) the ponds are aerated.

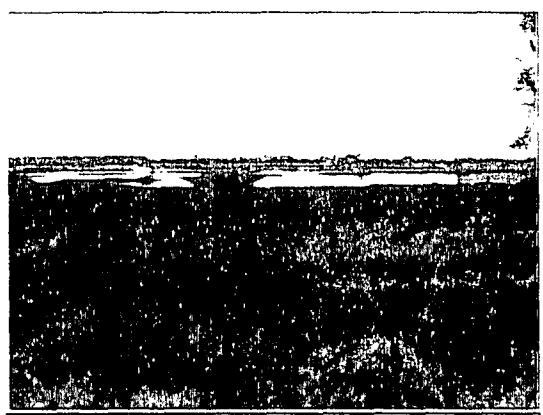

Figure 1: Disposal Ponds at Sukarne

An agricultural drain is about 30' to the north of the ponds and a water supply canal is about 0.5 miles to the

west of the evaporation ponds. During the tour, there was approximately 1' freeboard in the ponds, hence it is probable that a rainstorm may result in an acute surface discharge of facility wastewater, which could impact the drain, New River, and the water supply canal. Moreover, apparently, there is an outfall from the ponds into the drain (Figure 2). During the tour, however, I did not observe any discharge from the outfall into the drain or from the facility into the canal.

Figure 2: Outfall from Sukarne

LAGUNA XOCHIMILCO

At the confluence of the Laguna Xochimilco and Mexicali Drain, the Laguna Xochimilco discharge was a slight trickle and numerous live fish were observed stranded on a confluence point bar, Figure 3. Views downstream indicated a recent vertical drop in the channel water level by approximately 6', Figure 4. Closure of upstream water gates by Mexican officials was the cause for the decrease in discharge volume from Laguna Xochimilco.

Figure 3: Laguna Xochimilco discharge

Figure 4: Laguna Xochimilco downstream view

SLAUGHTER HOUSE - RASTRO MUNICIPAL

During the tour, a large volume of bright red wastewater, assumed to be mostly blood, was being discharged into a drain located east of the facility, Figure 5. The drain is tributary to the New River. Due to the water level within the drain the discharge pipe could not be seen and is presumed to be beneath a water supply canal located between the drain and the facility. Should the facility experience a discharge pipe failure it is possible that the water within the canal would be contaminated with facility wastewater. Additionally, the water within the supply canal may be contaminated with facility wastewater during a

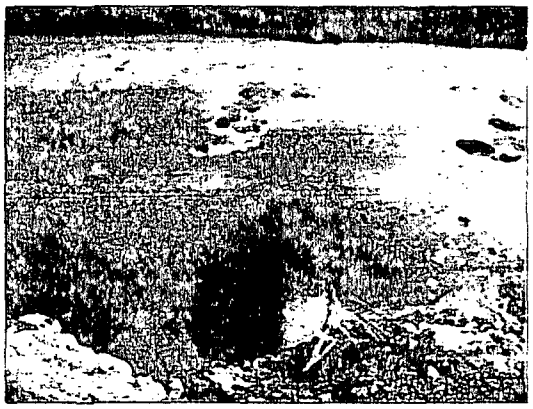

Figure 5: Slaughterhouse discharge

rainstorm. The wastes in the drain were off-gassing nauseous odors. Also, trash (e.g., tires, plastic containers, and wood debris) was present in the drain.

HOG FARM – PORCICOLA DEL VALLE

According to the CNA representative, this facility is not operating because the State is in the process of acquiring the property for the potential expansion of the proposed Mexicali II lagoons.

CERRO PRIETO GEOTHERMAL PLANT – COMISION FEDERAL DEL ELECTRICIDAD

Facility wastewater within a drain directly to the west and south of the facility was a light turquoise to white color, was steaming, and emitting sulfur-type odors, Figure 6. The drain discharges the wastewater to on-site ponds. Field observations suggest the concrete weir in the drain located northwest and downstream of the facility, constructed to prevent facility effluent from entering the New River, appears to be successful, Figure 7. Observations included the presence of approximately 3' of free board on the weir and an improvement in the visual characteristics of the drain liquid downstream of the facility. The facility effluent flows southward where it is pumped into the on-site ponds. The pumping station consists of a total of eight pumps in two areas, four new pumps are located directly north of four older pumps, Figure 8. Lagoon effluent is discharged to the Colorado River Delta. Tour participants were unable to visit the point discharge located to the northeast of the facility. According to the CNA representative a permit would be required to gain access to the area. This discharge is of particular concern because wastewater generated during the cooling tower cleaning process is discharged into a drain, which intersects the drain with the weir, downstream of the weir.

Figure 6: Geothermal Facility discharge

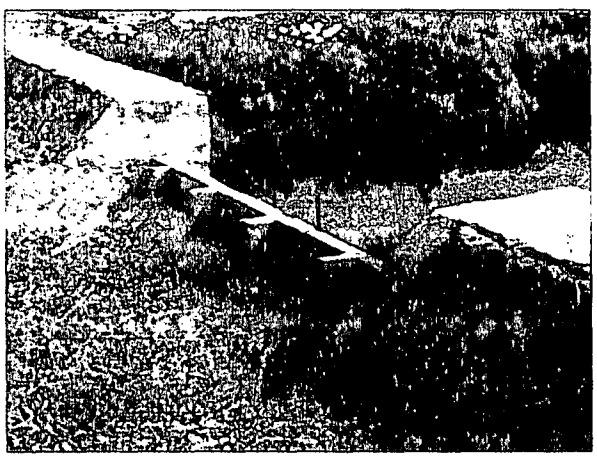

Figure 7: Weir at Geothermal Facility

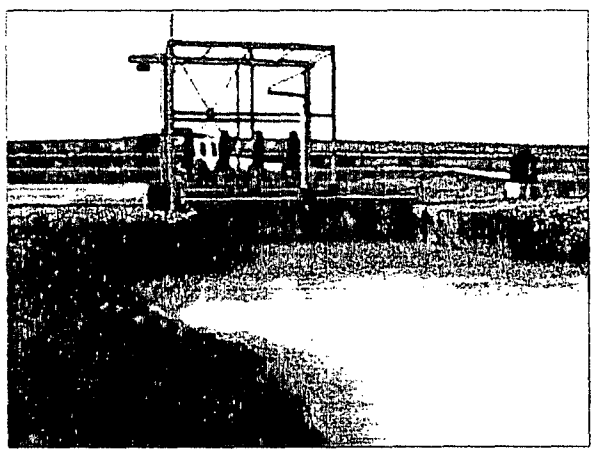

Figure 8: Geothermal Facility Pumps

STEEL MILL AND PROCESSING PLANT – COMPANIA SIDERURGICA DE CALIFORNIA

Two pipes, a ~2.5' diameter white pipe and an ~8" diameter black pipe, are protruding from the subsurface into a drain located immediately north of the facility. Discharge from the pipes was not occurring during the tour. According to the IBWC representative, during previous tours a liquid with petroleum characteristics was observed discharging from the 8" pipe. According to the CNA representative, discharge from the facility via the pipes occurs only during emergency situations. Historical frequency of these emergency situations is unknown. Vegetation density in the drain increased in the vicinity of the subject pipes.

MASECA

Due to extremely dense vegetation within the drain to the west of the facility, tour participants were unable to locate discharge points, with one exception. Participants did locate one concrete square discharge point through which a clear trickle, approximately 0.5 gallons per hour, was discharging into the drain. Tour participants did not observe any indications of an existing significant discharge at the time of the tour. Conditions within the drain in the vicinity of the facility were dense vegetation, a large quantity of green algae, and bubbling action was observed in the water. Facility has a series of treatment ponds located immediately to the north, which appeared to be operational during the tour, Figure 9. Additional wastewater treatment facilities are present south of the facility.

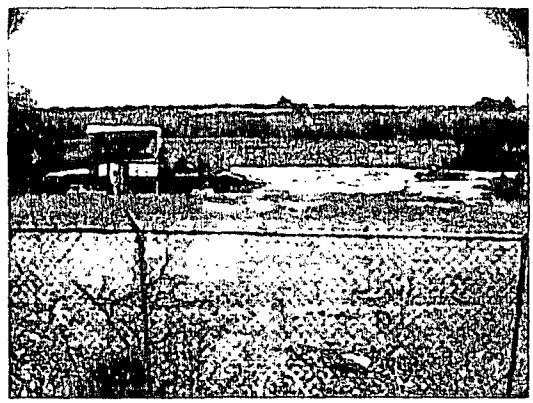

Figure 9: Maseca Ponds

PAPERMILL AND RECYCLING PLANT – FABRICA DE PAPEL SAN FRANCISCO

The facility was discharging approximately 1 mgd of a grayish orange liquid with a large quantity of gray, fibrous suspended material. The facility has on-site wastewater treatment lagoons located southwest of the facility, and they serve as settling basins. An eight-foot chain link fence that is topped with several strands of barbed wire restricts access to the discharge point located northeast of the facility, Figure 10. Several no smoking signs are attached to the fence. The discharge within the fenced area has a grayish orange color with a large quantity of foam. Downstream from the discharge point, a fine gray fibrous material coated the banks of the drain up to 3.5' above the existing water level, which likely results from lagoon flushing activities by the facility, Figure 11.

Figure 10: Paper mill discharge

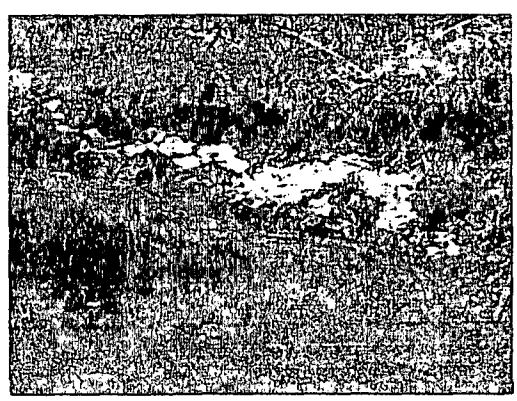

Figure 11: Drain immediately downstream of papermill discharge

COMMENTS AND RECOMMENDATIONS

1. Within the New River Watershed in Mexicali, there are several industrial facilities that routinely discharge their untreated and inadequately treated wastewater directly into New River tributaries. Based on previous tours and the subject tour, the quantity and characteristics of the industrial discharges varies, but the discharges are nevertheless adversely impacting New River water quality.

2. The occurrence of a rainstorm in the region may result in the discharge of a large volume of industrial wastewater from various types of facilities into the New River and could potentially impact water supply canals.

3. Pretreatment and regulatory enforcement programs are necessary to deal with the discharges of wastes from these industrial facilities.

California R. ional Water Quality (ntrol Board
Colorado River Basin Region

Winston H. Hickox
Secretary for
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Gray Davis
Governor

November 1, 2000

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Mary Bono, U.S. Congresswoman, Washington, D.C.
Carole Starr, Congressman Hunter's Office, Imperial, CA
Dave Kelley, Senator, Palm Desert, CA
Jim Battin, Assemblyman, Palm Desert, CA
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John Bernal, Commissioner, U.S. Sec., International Boundary and Water Commission, El Paso, TX
Francisco Herrera, Asst. to Gov. for International Affairs, Sacramento, CA
Art Baggett, Acting Chair, State Water Resources Control Board, Sacramento, CA
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Robertta Burns, Asst. County Administrative Officer, Imperial County, El Centro, CA
Jose Luis Lopezgamez, Imperial Irrigation District, Winterhaven, CA
Dean Hager, Imperial Irrigation District, Imperial

RE: New River Monthly Observation Tour Staff Report

Enclosed is the subject report for October 2000.

Phil A. Gruenberg
Executive Officer

Enc.

File: INTER

California Re ional Water Quality C ntrol Board
Colorado River Basin Region

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Governor

October 30, 2000

SUBJECT: BINATIONAL OBSERVATION OF NEW RIVER IN MEXICALI ON 10-26-00

BY: Phil Gruenberg

Binational Tour Participants:

Antonio Espinosa F.	CNA
Al Goff	IBWC
Phil Gruenberg	RWQCB7
Luis Antonio Hernandez	CESPM
Victor Joel Nava	CESPM

OBSERVATIONS

Tula West Drain

At the San Luis Highway Crossing the water color was murky green/brown with a strong acrid odor. Several discharges of approximately 3-5 gpm of wastewater were entering the drain—one of which emanated from the Vidriera plant (Photo 1). A 1 gpm discharge of dark wastewater may be originating from an industrial complex to the east—the nearest plant being Honeywell, which is presumed to be a maquiladora.

Photo 1: Discharge from Vidriera Plant

Some raw sewage appeared to be mixed in the flow, and was particularly noticeable just downstream of the drain's concrete encasement. At this point a few dead fish were noted (including one largemouth bass). The water had an oily sheen on the surface suggesting an upstream industrial source.

The Hidrogenadora Nacional plant is reportedly closed—probably for good. Al said he has not noted activity there for about 4 months. The only plant in this immediate vicinity with considerable activity appears to be a scrap metal plant just east of the Hidrogenadora facility.

The bank along the drain is becoming a routine dumping ground for trash—particularly adjacent to the residential development just upstream of the Hidrogenadora plant (Photo 2). Numerous items of household trash, including full plastic bags of garbage, were observed on the bank and in the water.

Photo 2: Trash disposal along Tula W. Drain

Gonzalez Ortega Plant

The Gonzalez Ortega pumping station appeared to be fully functional with no problems noted. The treatment lagoons were producing gray/green effluent, and according to AI, appear to be operating at only 10-15% of normal, although we were unable to locate any significant bypassing of raw sewage in the vicinity. One of the primary lagoons is in dire need of dredge-out (Photo 3).

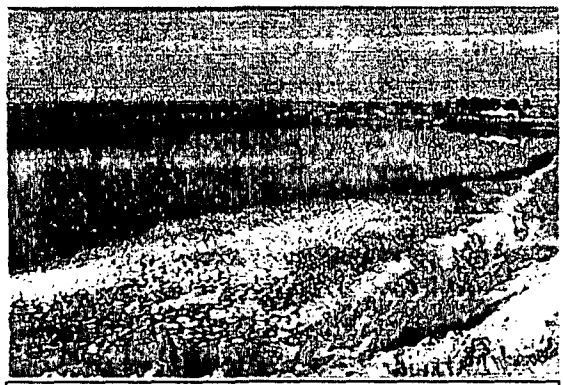

Photo 3: Gonzalez-Ortega Primary Lagoon

Animal Waste

Numerous animal pens are located for about a ½ mile length of drainageway just downstream of the Gonzalez Ortega treatment plant outfall (Photo 4). About 150 head of cattle were present, plus chickens and some other animals. Manure was observed sloughing off directly into the drain. All of the thirty-some residences appear to be discharging sewage to the drain via individual outlets. One residence had a number of junked drums and some sludge-like material dumped next to the drain (Photo 5).

Solid Waste

The closed dumpsite along the Mexicali Drain just east of the San Felipe Highway is apparently receiving increasing traffic. A gate, which previously blocked access to the site, was open, and fresh trash was routinely evident.

Photo 4: Animal waste and sewage discharges within Mexicali Drain Watershed

Photo 5: Drums and sludge disposal within Mexicali Drain Watershed

Pumping Plant 4 & Vicinity

Pumping Plant 4 appeared virtually complete (Photo 6). The appearance was impressive. On a negative note, it appeared workers were installing a large bypass connection to the Mexicali Drain.

The usual raw sewage spills were noted from the nutrimex and Mexicali II collector outfalls.

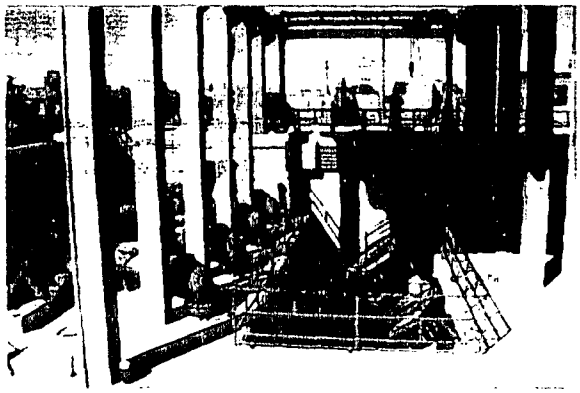

Photo 6: Pumping Plant No. 4

Mexicali I Treatment & Collection System

Work is underway at the Mexicali I lagoons to renovate the flow distribution system (Photo 7). Plastic partitions along the middle of the lagoons and new inlet/outlet structures have been erected (Photo 8). This effort appears about 50% complete. The new distribution systems at the two primary lagoons were operational, but not fully functional. It appeared that the system is suffering from partial cloggage. The easternmost primary lagoon has been drained (mostly) and will apparently be cleaned out soon (Photo 9). Effluent from the lagoons was part dark green (one series), and part tan (other series) (Photo 10). The treatment will remain erratic until the new distribution system is fully functional.

All the pumping plants appeared in relatively good condition with no particular problems noted other than the dysfunctional flow meters.

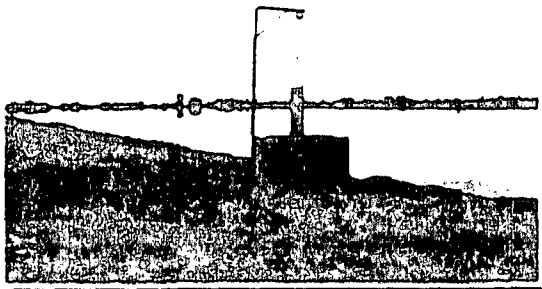

Photo 7: New Distribution gate at Mexicali I Lagoons

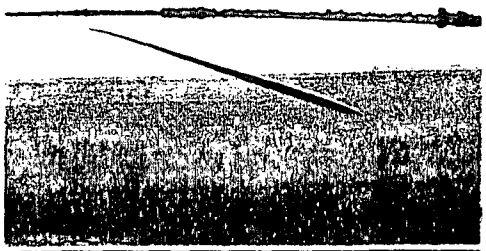

Photo 8: New Distribution baffle at Mexicali I Lagoons

Photo 9: Mexicali I Primary Lagoon being drained for clean out

Photo 10: Mexicali I Effluent

Mainstream New River

An earthen dam has been erected just upstream of the Av. Anahuac crossing to temporarily retain the flow of the river (Photo 11). Further upstream, practically all New River flow from above Lake Xochimilco had been stopped (Photo 12). Work was underway downstream within the concrete encasement of the river (Photo 13). Backhoes were operating within the encasement, at various interval points, attempting to remove debris (Photos 14 and 15). Apparently there is a blockage problem—perhaps caused by rainfall earlier in the week. Since the New River flow had been blocked off, any flow in the encasement was presumed to be either dryweather storm runoff or raw sewage being bypassed from the collection system. The flow at the downstream end of the encasement appeared to be about 20 cfs and was ink black in color. Sewage solids were readily observed. Evidence pointed to Drain 134 as the primary source. About 1 to 2 cfs of raw sewage was observed being bypassed at Av. Reforma from the west bank—probably a result of line blockage. Flows at the boundary appeared greatly reduced with the primary flow component being the effluent and drainage from the Mexicali I lagoons.

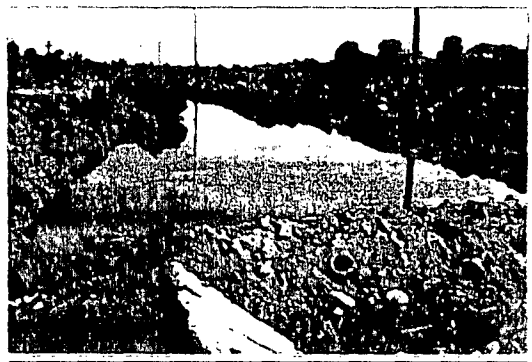

Photo 11: New River temporarily dammed at Anahuac Ave.

Photo 12: New River immediately downstream of Lake Xochimilco

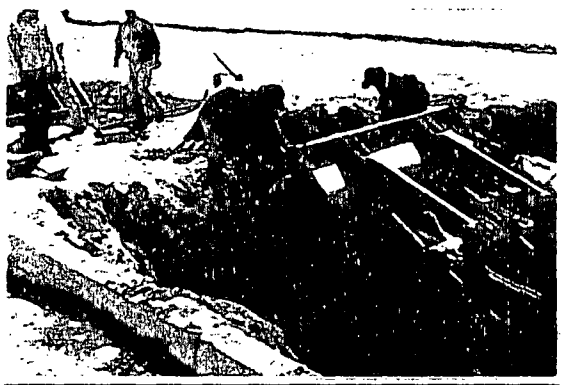

Photo 14: New River near Drain 134

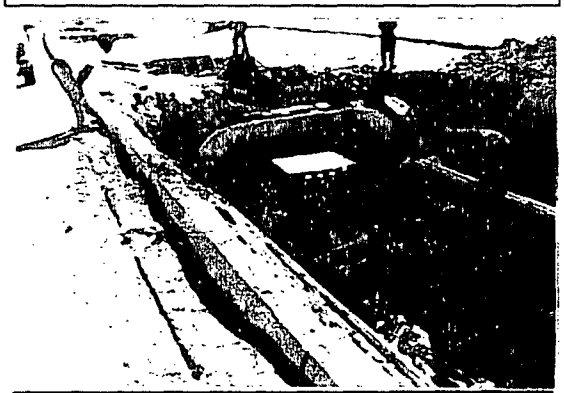

Photo 15: New River near Drain 134

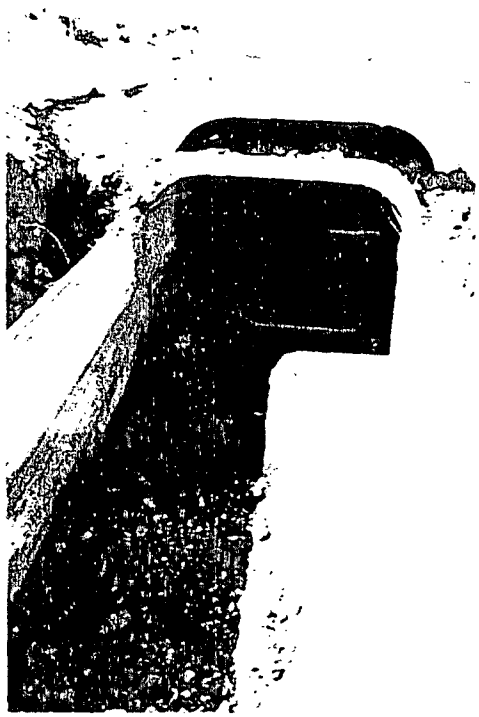

Photo 13: New River downstream from Anahuac Ave.

Recommendations

1. The encasement of the New River makes observations of sewage problems practically impossible. Such observations need to be replaced with institution of a water quality monitoring program.

2. The Mexicali Drain appears to be a lost cause as far as pollution control. The entire drain should receive wastewater treatment as if it was sewage influent.

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

To: Phil Gruenberg & Jose L. Angel, P.E. Date: October 4, 2000

From: Rafael A. Molina

Subject: Binational Observation Tour of the New River in the Mexicali area.

On Thursday September 28, 2000, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. During this tour, we observed direct and indirect discharges of industrial, commercial, and domestic wastewater into the New River and its tributaries. Additionally, observations were conducted at both of Mexicali's wastewater treatment plants and major pump stations. The following were this tour's participants:

Carlos Peña	IBWC – El Paso
Richard Mestan	IBWC - Calexico
Juan Riosmoreno	CILA - Mexicali
Guillermo Sillas	CILA - Mexicali
Antonio Espinosa	CNA - Mexicali
Victor M. Garcia	CNA - Mexicali
Luis A. Hernandez	CESP - Mexicali
Victor J. Nava	CESP - Mexicali

The following were my observations:

Industrial Waste

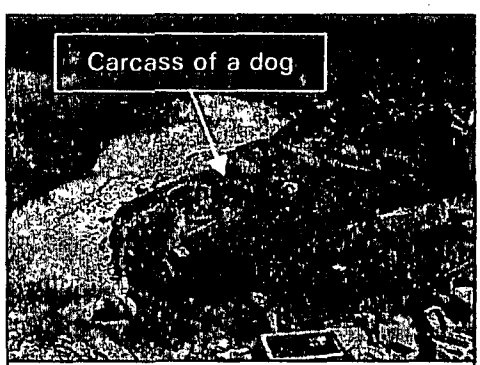

Photo # 1 - TWD @ Hwy. 2

Tula West Drain (TWD) at Highway 2

The drain's watercolor was dark olive green. Indiscriminate dumping at this site has not ceased; trash had accumulated and covered approximately 100 square feet of the drain's surface area. This included objects such as plastic bottles and filled trash bags, as well as a carcass of a dog (photo #1). Furthermore, there was an oily sheen covered approximately 600 square feet of the drain's surface area. There was an overpowering pungent odor present in the general vicinity of this drain; however, it was not as strong as previously observed at this site.

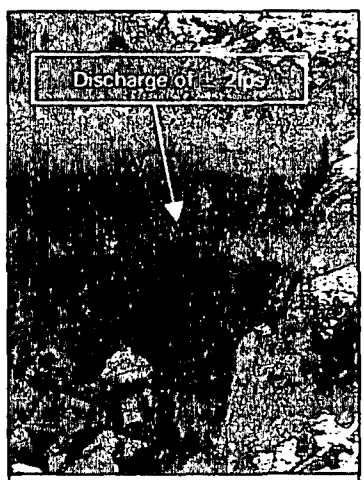

Photo # 2 – TWD

A total of approximately 3 liters-per second (lps) of clear wastewater were being discharged into the drain, from two distinct pipes located on opposite banks at this location. The two pipes were clearly visible, as the water level in the drain was lower than normal. The pipe on the east or right bank was discharging approximately 2 lps of clear wastewater (photo #2).

Mexicali I Lagoons

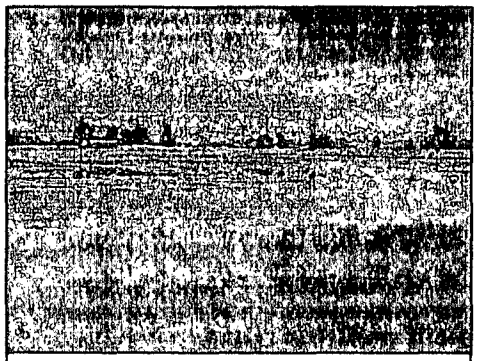

Photo # 7 – Primary Lagoon #1

Primary lagoons #2 and #3 were at full capacity; their watercolor was black. Furthermore, there was a strong septic odor that was present near these two primary lagoons. Primary lagoon #1 continues to be offline, as CESPM intends to let the lagoon "dry" so that the sludge can be removed (photo #7).

In general, all of the secondary lagoons were green in color, and operating at full capacity. The only exception was secondary lagoon #1 whose watercolor was tan. Blue-green algae was observed in secondary lagoons #3, #4 and #5; this contributed heavily to the overpowering foul odor that was present near these particular lagoons (photo #8).

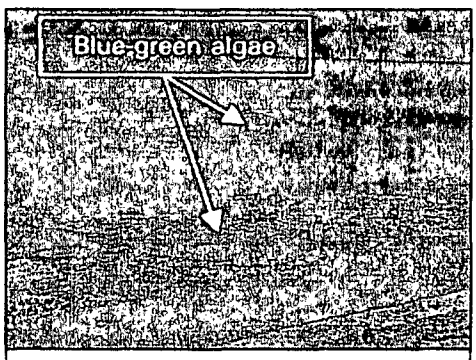

Photo # 8 – Secondary Lagoon #3

The effluent from this facility was green in color.

Pump Station #1

Pump #1 and pump #4 were the only pumps operating. Pump #5 was undergoing maintenance/repairs. The other three pumps were off, but operational.

Pump Station #2

In the lower sump, all three pumps were off, yet operable. In the upper sump, pump #1 was the only pump operating, the other two were off.

Pump Station #3

Pump #2 was undergoing repairs. The other two pumps were off, but operable.

All of the flow meters at all of these major pump stations are still not reliable, as they all give false readings.

New River Discharges

Photo # 9 – Ken/Mex Discharge

Location • Amount and Type of Discharge

Ken/Mex Plant located at the Mexicali Drain • ± 1 lps of clear wastewater into the Mexicali Drain (photo #9).

Man-made bypass from local residences, located at the Ken/Mex Plant • ± 1 lps of raw sewage into Mexicali Drain.

Nutrimex bypass • ± 60 lps of sewage discharging into the Mexicali Drain. Watercolor in the drain was dark green.

Recommendations/Comments

- The indiscriminate dumping of trash into the TWD at Highway 2 is ongoing. Consequently, the trash continues to degrade the overall water quality of the New River.
- The automotive repair shop upstream of Hydrogenadora Nacional continues to discharge used motor oil into the TWD. The IBWC should request Mexico to address this matter.
- Grit continues to adversely affect the pumps at Pump Station #3, as well as the influent (wastewater) piping system at the Mexicali I Lagoons. A detailed study needs to be undertaken to examine this problem.
- The Alamo Weir is still a concern. The Binational Technical Committee needs to revisit this matter. The original objective for this project has not been met, as the trans-boundary/dry weather flow of water into the United States continues to occur.
- Construction work was observed at Pump Station #4, which is approximately 99% complete (photos #10 & #11).

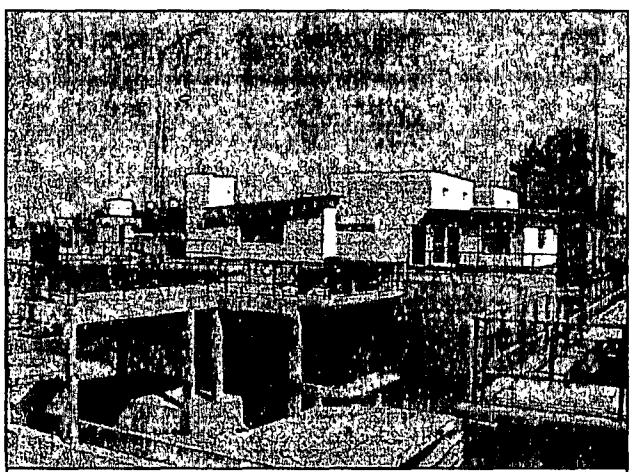

Photo # 10 – Pump Station #4

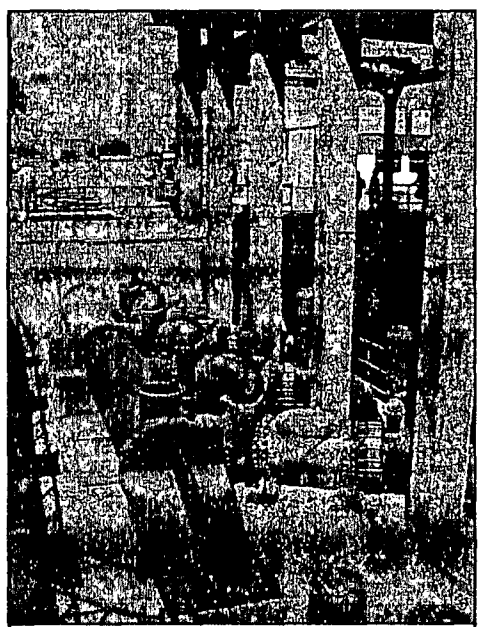

Photo # 11 - Pump Station #4

California R[illegible]ional Water Quality C[illegible]ntrol Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

March 14, 2000

Barbara Boxer, U.S. Senator, Washington, D.C.
Dianne Feinstein, U.S. Senator, Washington, D.C.
Mary Bono, U.S. Congresswoman, Washington, D.C.
Carole Starr, Congressman Hunter's Office, Imperial, CA
Dave Kelley, Senator 37th District, Palm Desert, CA
Jim Battin, Assemblyman 80th District, Palm Desert, CA
Shere Mann, c/o Stephen J. Peace, Assemblyman, Chula Vista, CA
James Stubchaer, Chairman, State Water Resources Control Board, Sacramento, CA
Francisco Herrera, Assistant to Governor For International Affairs, Sacramento, CA
John Bernal, Commissioner, International Boundary and Water Commission, El Paso, TX
Ricardo Martinez, Assistant Secretary of Border Affairs, Sacramento, CA
Imperial County Board of Supervisors, El Centro, CA
Jesse Silva, Imperial Irrigation District, Imperial, CA
Steven Gold, City of San Diego, San Diego, CA
Mike Richmond, District Director San Diego Office of Senator Dianne Feinstein, San Diego, CA
Carlos Peña, International Boundary and Water Commission, El Paso, TX
Al Goff, International Boundary and Water Commission, Yuma, AZ
David Strange, Federal Bureau of Investigation, San Diego, CA
Eugenia McNaughton, U.S. EPA, Attn: W-4, San Francisco, CA
Bart Christensen, State Water Resources Control Board, Sacramento, CA
Michael Perrone, State Water Resources Control Board, Sacramento, CA
Gale Filter, CA District Attorneys Association, Sacramento, CA
Benjamin Lehr, Imperial County Health Officer, El Centro, CA
Tom Wolf, Imperial County Division of Environmental Health, El Centro, CA
Robertta Burns, Asst. County Administrative Officer, Imperial County, El Centro, CA
Jose Luis Lopezgamez, Imperial Irrigation District, Winterhaven, CA
Dean Hager, Imperial Irrigation District, Imperial, CA

Enclosed are the observations of a January 27, 2000 Binational Tour of the New River in the Mexicali B.C. area.

Rafael A. Molina
Water Resources Control Engineer

Enc.

File: IP GC

California Regional Water Quality Control Board
Colorado River Basin Region

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Secretary for Environmental Protection

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Gray Davis
Governor

To: Phil Gruenberg and Jose L. Angel, P.E. Date: February 7, 2000

From: Rafael A. Molina

Subject: Binational Observation Tour of the New River in the Mexicali area.

On Thursday January 27, 2000, Robert Perdue (staff) and I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. During this tour, we observed direct and indirect discharges of industrial, commercial, and domestic wastewater into the New River and its tributaries. Additionally, observations were conducted at both of Mexicali's wastewater treatment plants and major pump stations. The following were this tour's participants:

Al Goff	IBWC - Yuma
Tanya E. Mikita	IBWC - Yuma
Carlos Duarte	IBWC - El Paso
Francisco Bernal	CILA - Mexicali
Juan Riosmoreno	CILA - Mexicali
Mauricio Negrete	CESP - Mexicali
Mario Soberanes	CESP - Mexicali

The following were my observations:

Industrial Waste

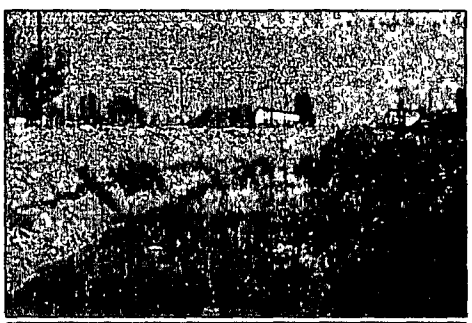

Photo # 1 - TWD

Photo # 2 - TWD

Tula West Drain (TWD) at Highway 2

On the whole, the drain was free from trash and debris (photo #1). In fact, this was the cleanest it has been in at least the past 5 years. This enabled us to observe the two discharge pipes located on opposite banks from one another. These pipes were discharging a total of 2 liters per second (lps) of clear wastewater into the drain (photo #2). The water level in the drain was relatively low; this can be attributed to the improvement of the flow of water at the siphon (located at Highway 2). The watercolor in the drain was olive green/gray. Additionally, it had an oil sheen on its surface, presumably a result of the discharge form the Hydrogenadora facility. Moreover, there was a pungent, "oily" smell that was present throughout this area.

The encasement of the TWD has not resumed. This project is on hold indefinitely, due to lack of funding. CESPM personnel stated that there are no immediate plans to resume the encasement project.

Photo # 3- Oil Discharge

Several discharges with minimal flows and mostly of domestic origin were observed in the reach of the drain between the Hydrogenadora facility and the end of the encasement of the TWD. However, one of these discharges originated from an auto repair shop, located at the corner of Ave. 92 and San Francisco. This facility was discharging ± 1 lps of used motor oil into the drain (photo #3). According to the owner of the facility, a contractor was supposed to remove the oil from his facility, but never did so. As a result, he stated he had no choice but to dispose of the oil into the drain. Mario Soberanes of CESPM indicated they would further investigate this facility.

Quipac

The bank immediately below a discharge pipe located at 0.15 miles from the Highway was wet, suggesting that the facility had recently discharged waste into the drain. There were no discharges from this plant into the drain, at the time of the tour. The watercolor in the drain was pea green at this location.

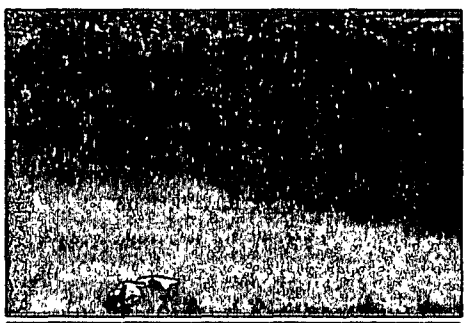

Photo # 4 - Hydrogenadora

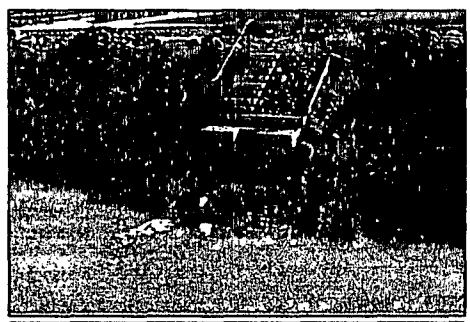

Photo # 5 - Hydrogenadora

Hydrogenadora Nacional

Approximately 2 lps of a brown liquid with oil properties was being discharged into the drain from a pipe located at 0.25 miles from the Highway (photo #4). Around 5 lps of hot, clear wastewater were discharged into the drain from a pipe located at 0.51 miles from the Highway (photo #5). The discharge pipe immediately downstream from the previous one, was discharging a less than 1 lps of black wastewater into the drain. At this location, the watercolor in the drain was milky green

Vidriera Mexicali (formerly known as VitroMex)

This plant was discharging a total of ± 1 lps of clear wastewater into the TWD. The water color in the drain was olive green. There was an overwhelming amount of vegetation in the drain, which suggests that the water in the drain was rich in nutrients.

Cucapa Industrial Park

A pipe was discharging ± 6 lps of sewage into the TWD. This pipe is located on the east bank of the TWD near the south end of the Vidriera facility (photo #6).

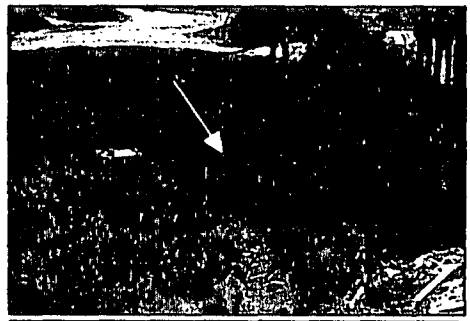

Photo # 6 - Cucapa Discharge

Pump Stations and Wastewater Treatment Plants

Gonzalez - Ortega Pump Station

Two out of the three pumps were off, but operational; pump #2 was the only one operating at the time of the tour.

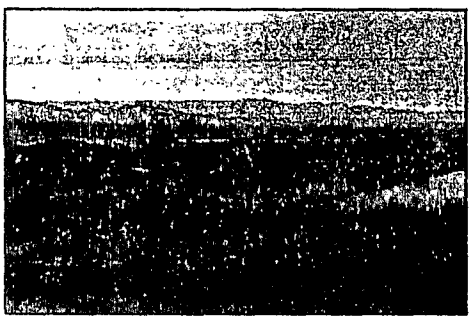

Photo # 7 – Mexicali I

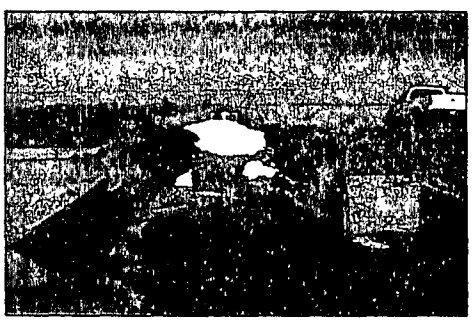

Photo # 8 - Mexicali I Effluent

Gonzalez - Ortega Lagoons

In general, the lagoons, which had oil sheens on their surfaces, continue to be overloaded. The septic odor from this facility was not as strong as it has been during previous visits. The watercolor in all of the lagoons was black.

Mexicali I Lagoons

Primary lagoons #1 and #2 were not in operation. They were taken out of operation to allow for the installation of a new distribution system (photo #7), which will help distribute the influent wastewater more evenly into the lagoons. Primary lagoon #3 was online. The effluent from this facility was pea green in color (photo #8).

Similarly, most of the secondary lagoons were offline. The only secondary lagoons that were operating were secondary lagoons #1, #2 and #5. Their watercolor varied from green to brown.

Rehabilitation work to this facility should have been completed in February, however that will not be the case as some unexpected delays were encountered. There was no indication by CESPM personnel as to when they expect this work to be completed.

Pump Station #1

Pump #6 was the only pump operating. The other five pumps were off, but operational. The flow meters here are still not reliable. This station is receiving minimal flows due to the ongoing problems with the collapsed South Collector and its tributaries (e.g. Collector Calle 10).

Pump Station #2

All pumps were off. Pump #3 in the upper sump was out of operation, as it was undergoing repair work. Similarly, the flow meters at this pump station are not completely reliable. This station is also receiving negligible flows as a result of the collapsed South Collector.

Pump Station #3

Pump #3 was the only pump operating. The other two pumps were off, but operational. The flow meters here are still not reliable, as they give false readings.

New River Discharges

Photo # 9 - Nutrimex Collector

Photo # 10 – Interceptor Line

Location • Amount and Type of Discharge

Ken/Mex Plant located at the Old Mexicali Drain; ± 3-5 lps of clear wastewater into the drain

Nutrimex bypass; ± 75 lps of sewage discharging into the Mexicali Drain. Watercolor in the drain was dark green (photo #9).

48" pipe, Principal Collector discharging to the Mexicali drain; ± 80 lps of raw sewage

Drain 134, located at the New River; this discharge is no longer visible as a result of the encasement Project

Interceptor line, left bank, located at Reforma Bridge, discharging ± 125 lps of sewage into the New River. This is a result of the collapsed South Collector. The New River's watercolor is gray (photo #10).

The following sites were also visited, in each case there was no discharge into the New River:

Bypass outlet from pump station, left bank, located at Cardenas Ave.

Bypass outlet - Plant #26 from pump station, located 0.33 miles upstream of Cardenas Ave.

Bypass trench, right bank, located 0.75 mile upstream of Cardenas Ave.

Storm drain, left bank, located 0.50 mile upstream of Cardenas Ave

Slaughterhouse outlet, ps #11 located 0.25 mile upstream of Anahuac Ave.

New PVC 4" pipe, 0.25 mile upstream of Anahuac Ave.

Storm drain, located 0.25 mile upstream of Anahuac Ave.

Storm drain, left bank, located 200' downstream of Anahuac Ave.

Storm drain, left bank, located 600' downstream of Anahuac Ave.

Storm drain, left bank, located 800' downstream of Anahuac Ave.

Overflowing manhole, left bank, 75' upstream of Pump Station #2

Storm drain, left bank, located 30' downstream of Pump Station #2

Storm drain, left bank, located 200' downstream of Pump Station #2

Storm drain, left bank, located 300' downstream of Jalisco St.

Storm drain, left bank, located downstream of Colima Street.

Interceptor line, right bank, located at Reforma Bridge

Due to the ongoing construction work on the encasement project of the New River, the historical discharges (approximately a dozen point sources) located between the South Collector and Drain 134 are no longer visible.

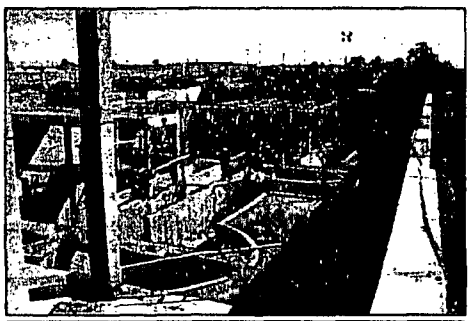

Photo # 11 - Pump Station #4

Photo # 12 - Pump Station #4

Recommendations/Comments

- Construction work was observed at Pump Station #4, which is approximately 60% complete (photos #11 & #12).

- Throughout the past few months, the South Collector has undergone major rehabilitation work at several locations. During this time, several million gallons per day (mgd) of sewage have been bypassed into the New River. It is important for the Binational Technical Committee to address equipment needs for operation and maintenance. Standby emergency equipment for situations like this one need to be obtained, as pumping around the "collapsed" areas should be the preferred alternative to bypassing directly into the New River.

- Reabilitaion work to the South Collector is essentially complete; thus eliminating a bypass of ± 250 lps (5.7 mgd) of sewage into the New River. However, ± 250 lps (5.7 mgd) of sewage are still being discharged into the New River due to the ongoing rehabilitation work on Collector Calle 10.

- The repairs to the and Collector Calle 10 should be complete by the end of February.

- The Alamo Weir is still a concern, as ± 70 lps were overflowing the weir. This "dry weather flow" is still crossing the boundary. The original goal for this project was to eliminate the dry weather, trans-boundary flow of water into the United States. It is clear that the objectives were not met. (photo #13)

Photo # 13 - Alamo Weir

California R( )ional Water Quality ( )ntrol Board
Colorado River Basin Region

Winston H. Hickox
Secretary for
Environmental
Protection

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Phone (760) 346-7491 • Fax (760) 341-6820

Gray Davis
Governor

TO: Jose L. Angel, Senior WRC Engineer

FROM: Beatrice Griffey, Associate Engineering Geologist

SUBJECT: December 22, 1999 Binational Observation of New River Pollution Problems in Mexicali

PARTICIPANTS: Refer to attached sign in sheet

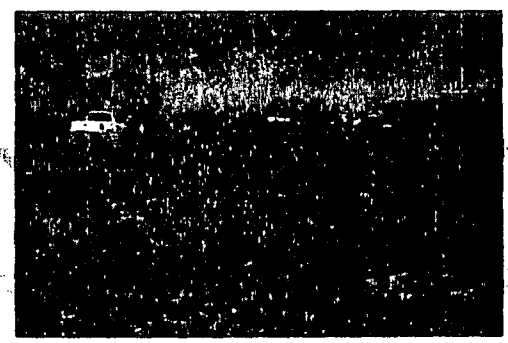
On December 22, 1999, I participated in and accompanied the following individuals on the subject observation tour:

Name	Agency
Al Goff	U.S. IBWC
Anna Munoz	U.S. IBWC
Guillermo Sillas	CILA
Manuel Fernandez	CNA
Mario Soberanes	CESPM

During the tour, we observed overall conditions of the New River and its tributaries in the Mexicali metropolitan area, including the Tula West Drain and Mexicali Drain. We also conducted observations of the city's wastewater pump stations and at the Gonzalez Ortega and the Zaragoza wastewater treatment facilities. We began the tour at the point where the Tula West Drain intercepts Highway 2 at around 9:00 a.m. I took pictures during the observation tour. The pictures are hereto made part of this report by reference. The following paragraphs contain my observations and comments.

Tula Drain

A significant amount of debris is in the Tula Drain and backed up against a culvert underneath Highway 2. The debris forms a brown-greyish blanket that covers an area approximately 30x150 feet and consists of tires, plastic bottles, plastic bags, paper, and various unidentifiable items. The debris appears to be "cemented" in the channel. The water in the Drain immediately upstream of the debris blanket has a light whitish appearance, and the Drain at this location emitted a mild greasy-like odor. Figures 1 and 2 show the conditions of the drain.



Figures 1 and 2: Tula West Drain at Highway 2

Approximately 0.25 miles upstream of the intersection with Highway 2, Hidrogenardora Nacional was discharging approximately 3-4 liters per second (lps) of a whitish liquid directly into the Tula Drain. This discharge appears to be oily in nature as it was not readily mixing with the rest of the wastewater in the Drain (see Figure 3). As we headed back to the Highway, the color of the discharge changed to a greenish yellow. Approximately 0.5 miles upstream of the intersection with Highway 2, the Hidrogenadora is also discharging about 6-8 lps of whitish wastewater from its main outfall into the Drain. The wastewater upstream of this discharge point was greenish.

Vitromex was discharging a trickle of clear liquid into the Drain from its PVC outfall by the railroad crossing, on the right bank of the Drain. Downstream of that discharge point, it was also discharging approximately 1.5 lps and 1 lps of a wastewater with a clear tint from another two PVC separate outfalls, respectively. On the left bank of the Drain, just before the culvert that is downstream of the culvert serving Venustiano Carranza Avenue, a concrete pipe was discharging about 1 lps of sewage into the Drain. The source of the sewage is unknown.

Figures 3 and 4: Discharges from Hidrogenadora Nacional

Gonzalez-Ortega Lift Station and Lagoons

The lift station was not operational at the time of the tour: Two of its pumps (Pumps #1 and #2) are at the shop reportedly being repaired. Pump #3 was on-line, but it is also nonoperational. Figure 5 shows the lift station. Apparently, the pump problems are believed to be related to inadequate screening of wastewater. CESPM staff intentionally jammed the shaft of Pump #3 with a block of wood to work on the pump. According to CESPM officials, approximately 1 mgd of raw municipal wastewater is being bypassed into the New River due to pumping problems. The station, however, can pump up to 3.0 mgd. The bypass was an odiferous black liquid with floating white foam (see Figure 6). The Lagoons continue to be overloaded and were emitting a strong putrid odor. A trickle of light green wastewater was coming out from the lagoons' outfall.

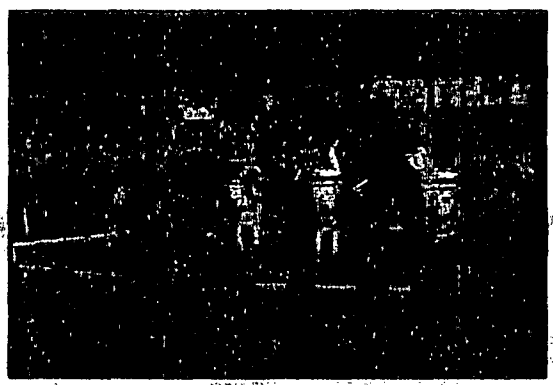


Figure 5: Gonzalez-Ortega Lift Station

Figure 6: Bypass from Lift Station and discharge from Lagoons

Old Dump and Mexicali Drain: The old dump along the Mexicali Drain upstream of the Kenmex outfall is on fire. Smoke is emanating from the dump at several locations, indicating subsurface burning, and flames (approximately 3' high) were observed at one location (see Figure 7). Illegal disposal of trash at this location continues, as evidenced by the large quantities of trash observed all along the banks of the Mexicali Drain. There are also numerous outhouses along the Drain. During the tour, there was no discharge from Kenmex facility. However, a large pile of Styrofoam is present on the right hand bank (facing downstream), just in front of the Kenmex outfall (see Figure 8).

Figure 7: Old Dump upstream of Kenmex

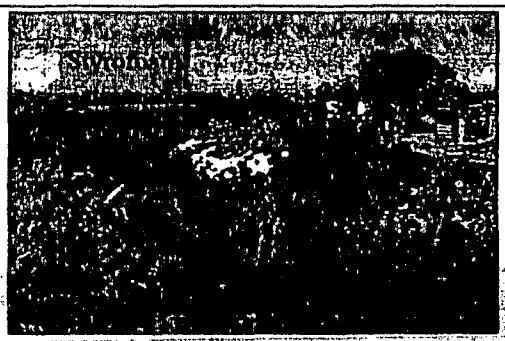


Figure 8: Mexicali Drain downstream of Kenmex

Pumping Plant #4: About 60% of the plant is complete according to CILA (see Figure 9). The plant has a design capacity of 20 mgd. The pumps and their motors for the plant are at the site ready for installation (see Figure 10).

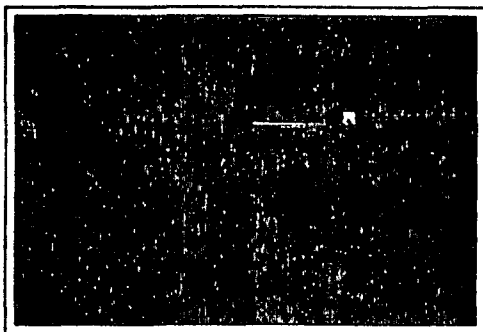


Figure 9: Pumping Plant No. 4

Figure 10: Plant's pumps and motors

Nutrimex and Mexicali II Collector Bypasses: The Nutrimex collector was bypassing an estimated 80 lps of raw sewage into the Mexicali Drain. The Drain had a dense green color and was quite turbid at this point. The Mexicali II Collector was bypassing about 85 lps of raw sewage into the Drain, immediately downstream of the San Felipe Highway crossing. Figures 11 and 12 show the respective bypasses.

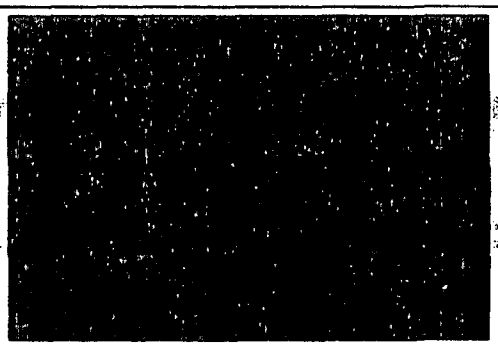


Figure 11: Nutrimex Collector

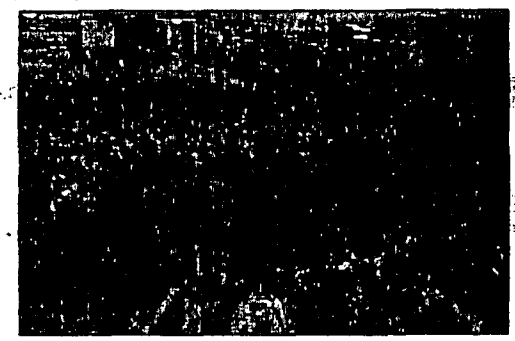


Figure 12: Mexicali II Collector

Zaragoza Lagoons

The lagoons were discharging odiferous light greenish wastewater with white to light brown foam (see Figure 13). During the tour, primary lagoons 9 and 10, and secondary lagoons 1, 3, and 4 were out of service due to the ongoing improvements at the facility.

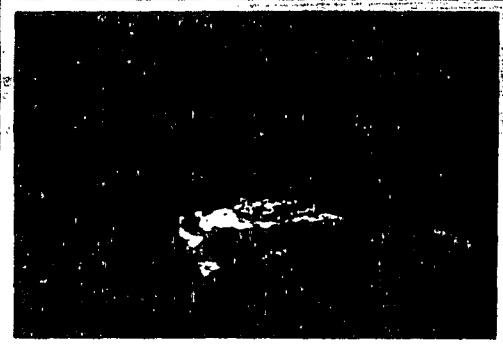


Figure 13: Zaragoza Lagoons discharge

Pumping Plant #1

All six pumps at this station are operational. However, CESPM is only pumping 3 hours per shift because sections of the South Collector system (e.g., South Collector near "Calle Nuevo Leon" and South Collector near "Calle 10"), including a section approximately 1000 feet upstream of the plant, on the eastern end of the Military Headquarters are collapsed (see Figure 14). Consequently, CESPM is bypassing most of the normal wastewater flow from the plant into the New River. The typical flow at this plant is about 10-15 mgd. CESPM is replacing the collapsed and delapited surrounding pipe sections with 54-inch "PVC" pipe. The new flow meters for the plant are useless as their readings continue to be unreliable.

Figure 14: Collapsed line upstream of Plant #1

Pump Plant #2 and Right Bank Pumping Plant

The Right Bank plant is operational. Pump #1 in the upper level and Pump #1 in the lower level of Pumping Plant #2 were out of service (see Figures 15 and 16). The standby generator for Plant #2 is operational. Even though both plants remain operational, all incoming wastewater into the plants is being bypassed into the New River because portions of the North Collector and the Left Bank Collector are also collapsed. The byappses are taking place via Drain 134 and the collectors by Reforma Bridge. The flow meters at Plant #2 are also unreliable.

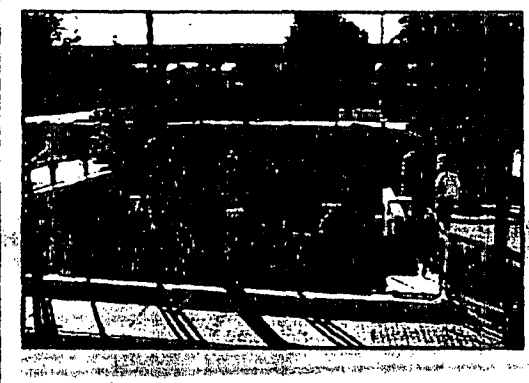


Figure 15: Plant #2 upper level pumps

Figure 16: Plant #2 lower level pumps

Pumping Plant #3: All pumps and the standby generator at this plant are operational. At the time of the tour, only pump #1 was on. The new flow meters are at this plant are useless too.

Reforma Bridge Bypasses: The east bank collector beneath the Reforma Bridge was bypassing wastewater into the New River (see Figure 17). Also, immediately downstream of the bridge, the manhole on the west bank of the New River was also bypassing wastewater into the New River (see Figure 18). The bypasses are due to the collapse of the South Collector System.

Figure 17: Reforma Bridge bypass

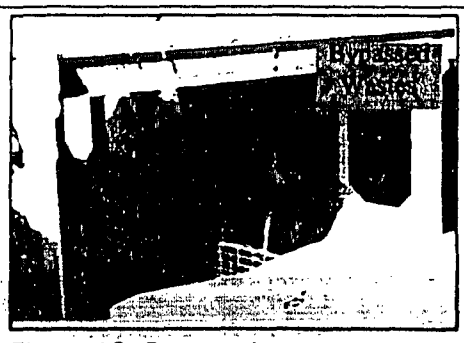


Figure 18: Bypass downstream of Reforma Bridge

Other: The stench of the New River at the Boundary was overpowering due to the amount of raw municipal waste bypassed. The color of the wastewater in the New River at the Calexico USGS Station was greyish, and the wastewater contained a significant amount of suspended solids.

COMMENTS AND RECOMMENDATIONS

1. Based on tour observations, approximately 20 mgd of wastewater is currently being bypassed from the sewage collection system into the New River. This discharge of untreated wastewater is necessary predominantly due to collapsed portions of the South Collector, Left Bank Collector, and North Collector. The bypasses are also related to pumping problems caused by inadequate screening of wastewater. Standby portable pumping equipment should be acquired to deal with collapsed pipes and avoid what has become routine bypasses of raw sewage into the New River due to collapsed pipes. The equipment can be used to capture the wastewater flow upstream of the collapsed section and reroute it into the collection system downstream of the collapsed section.

2. Pipes continue to collapse periodically. Although the approved Mexicali I and Mexicali II projects address about 20 miles of sewage collectors, the actual state of all main collectors (sewer pipes 8 inches in diameter or greater) is not fully known. It is imperative that a comprehensive pipe survey (i.e., a TV-survey of the pipes' interior) of the collection system be conducted to better prioritize pipe replacement/rehabilitation and maintenance.

3. The unabated dumping of trash and untreated industrial discharges of wastewater from Hidrogenadora Nacional into the Tula West Drain by Highway 2 continue. The encasement of the Tula West Drain should help mitigate the trash problem. In the interim, the trash from the Drain should be dredged and properly disposed of. CNA reports that it is exploring enforcement options against Hidrogenadora Nacional.

4. Because the New River is encased from Avenida Anahuac to the Reforma Bridge, it is no longer possible to determine the extent of bypasses throughout this stretch, in particular bypasses of raw sewage from Drain 134 into the river, but the Drain is routinely being used to bypasss raw sewage due to the collapsed pipes in the North Collector system. An access observation port

should be installed at the intersection of Drain 134 and the New River to sample and ascertain the amount and quality of wastewater being bypassed into the New River.

California R[illegible]ional Water Quality C[illegible]ntrol Board
Colorado River Basin Region

Winston H. Hickox
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Governor

December 27, 1999

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Jose Luis Lopezgamez, Imperial Irrigation District, Winterhaven, CA
Dean Hager, Imperial Irrigation District, Imperial, CA

Enclosed are copies of our inspection reports for the November 1999 and December 1999 Binational Tour of the New River in the Mexicali B.C. area.

Jose L. Angel, P.E.
Chief of Basin Planning

Enc.

File: INTER

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Colorado River Basin Region

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Gray Davis
Governor

To: Phil Gruenberg, EO **Date:** December 14, 1999

From: Rafael A. Molina, AWRCE

Subject: Binational Observation Tour of the New River in the Mexicali area.

On Monday November 29, 1999, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. During this tour, we observed direct and indirect discharges of industrial, commercial, and domestic wastewater into the New River and its tributaries. Additionally, observations were conducted at both of Mexicali's wastewater treatment plants and major pump stations. The following were this tour's participants:

Al Goff	**IBWC - Yuma**
Tanya E. Mikita	IBWC - Yuma
Juan Riosmoreno	CILA - Mexicali
Manuel Fernandez	CNA - Mexicali
Gerardo Garciá Saille	CNA - Mexicali
Mauricio Negrete	CESP - Mexicali
Mario Soberanes	CESP - Mexicali

The following were my observations:

Industrial Waste

Tula West Drain (TWD) at Highway 2

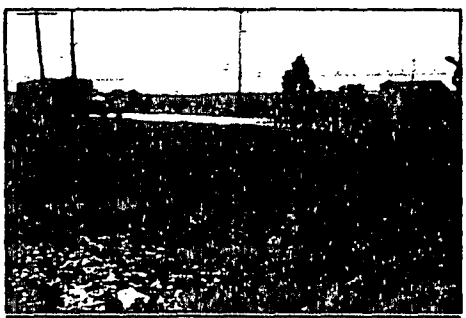

Photo #1 – TWD @ Highway 2

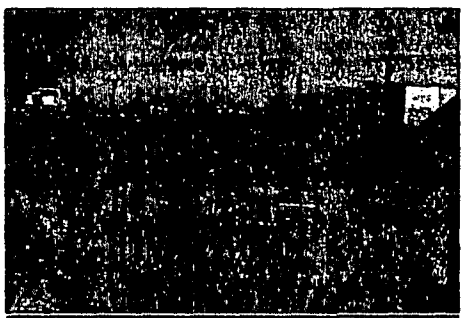

Photo #2 – TWD @ Highway 2

On the whole, there was a greater amount of accumulated trash and debris at the highway than previously observed during recent visits to this site (photos #1 & #2). The water level in the drain was at its customary elevation. Its watercolor was primarily dark green. Additionally, there was an oily sheen on the water's surface, and a strong pungent, septic odor was emanating from this drain. Due to the amount of trash present, it was not determined if there were any discharges into the drain from the two pipes located on opposite banks from one another, as they were hidden from view.

The encasement of the TWD is still on hold, primarily as a result of funding problems. CESPM personnel stated that there are no immediate plans to resume the encasement project.

Quipac

There were no discharges from this plant into the drain. At this location, the watercolor in the drain was pea green. Additionally, the water had an oily sheen on its surface, which was a direct result of the wastewater discharged at the Hidrogenadora plant.

Photo #3 – Hydrogenadora

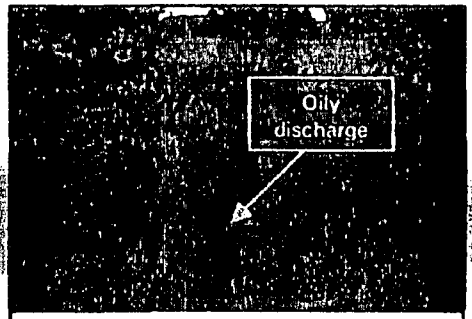

Photo #4 – Oily discharge

Hydrogenadora Nacional

Approximately 3 lps of clear wastewater were being discharged from a pipe located at approximately 0.51 mi upstream of Highway 2 (photo #3). A strong grease/oil like odor was emanating from this facility. The watercolor in the drain was milky pea green. Additionally, there was a relatively new discharge pipe that was discharging 5 lps of wastewater into the drain. This discharge was brown with oil like properties (photo #4).

Photo #5 – TWD @ Vidriera Mexicali

Vidriera Mexicali (formerly known as VitroMex)

This plant was discharging a total of ± 1 lps of clear wastewater into the TWD. The water color in the drain was pea green. There was an overwhelming amount of vegetation in the drain, which suggests that the water in the drain was rich in nutrients. (photo #5).

Pump Stations and Wastewater Treatment Plants

Gonzalez - Ortega Pump Station

Two out of the three pumps were operating, with one shut off. No apparent problems were observed here.

Gonzalez - Ortega Lagoons

In general, the lagoons continue to be overloaded. The septic odor from this facility was not as strong as it has been during previous visits. The watercolor in all of the lagoons was black. Moreover, an oily sheen was observed in all of the lagoons. A septage hauler was discharging into the lagoon system (photo #6).

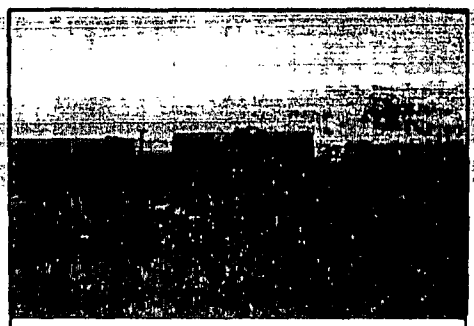

Photo #6 - Septage Hauler

Mexicali I Lagoons

Primary lagoons #2 and #3 were at full capacity; their watercolor was black. There was a strong septic odor that was emanating from the lagoons. This facility continues to be overloaded. Primary lagoon #1 is still out of service to allow for the installation of a new distribution system. Similarly, most of the secondary lagoons were at full capacity. In general, their watercolor was light green. Red algal growth was observed on the surface of secondary lagoon #5. The effluent from this facility was pea green in color (photo #7).

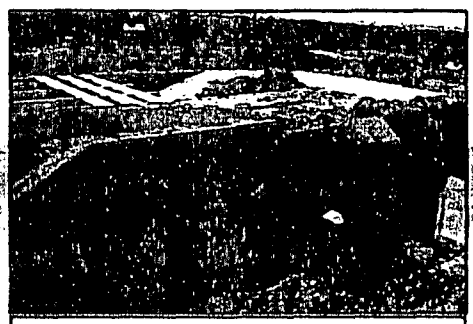

Photo #7 - Effluent form Mexicali I

Rehabilitation work was observed at secondary lagoon #10. This included the installation of a new diffuser system, which will help distribute the influent wastewater more evenly into the lagoon and provide for better treatment of the wastewater (photo #8).

Pump Station #1

Pump #6 was the only pump operating. The other five pumps were all off. The flow meters here are still not reliable. I spoke to Mr. Soberanes (CESPM) and asked him to let IBWC know what they can do to facilitate the rectification of the problems with the flow meters.

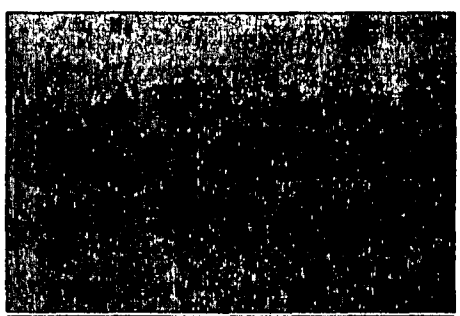

Photo #8 - Secondary Lagoon #10

Pump Station #2

All pumps were off. Similarly, the flow meters at this pump station are not completely reliable. Pumps #1 in both upper and lower sump were out of operation, as they were undergoing repair work.

Pump Station #3

Pump #3 was the only pump operating. The other two pumps were off. The flow meters here are still not reliable, as they give false readings.

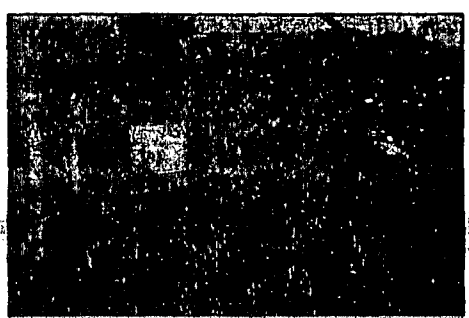

Photo #9 - Nutrimex Bypass

New River Discharges

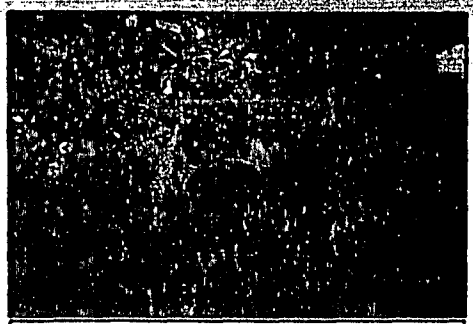

Photo #10 - Principal Collector

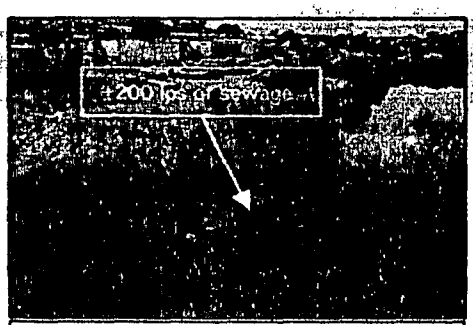

Photo #11 - New River @ Reforma Brige

Location • Amount and Type of Discharge

Ken/Mex Plant located at the Old Mexicali Drain; a trickle of clear wastewater into the drain

Nutrimex bypass; ±75-100 lps of sewage discharging into the Mexicali Drain. Water color in the drain was gray/green.

48" pipe, Principal Collector discharging to the Mexicali drain; ±75 lps of raw sewage (photo #10)

Drain 134, located at the New River; this discharge is no longer visible as a result of the encasement Project

Interceptor line, left bank, located at Reforma Bridge, discharging ±200 lps of sewage into the New River. This is a result of the collapsed North Collector. (photo #11)

The following sites were also visited, in each case there was no discharge into the New River:

Bypass outlet from pump station, left bank, located at Cardenas Ave.

Bypass outlet - Plant #26 from pump station, located 0.33 miles upstream of Cardenas Ave.

Bypass trench, right bank, located 0.75 mile upstream of Cardenas Ave.

Storm drain, left bank, located 0.50 mile upstream of Cardenas Ave

Slaughterhouse outlet, ps #11 located 0.25 mile upstream of Anahuac Ave.

New PVC 4" pipe, 0.25 mile upstream of Anahuac Ave.

Storm drain, located 0.25 mile upstream of Anahuac Ave.

Storm drain, left bank, located 200' downstream of Anahuac Ave.

Storm drain, left bank, located 600' downstream of Anahuac Ave.

Storm drain, left bank, located 800' downstream of Anahuac Ave.

Overflowing manhole, left bank, 75' upstream of Pump Station #2

Storm drain, left bank, located 30' downstream of Pump Station #2

Storm drain, left bank, located 200' downstream of Pump Station #2

Storm drain, left bank, located 300' downstream of Jalisco St.

Storm drain, left bank, located downstream of Colima Street.

Interceptor line, right bank, located at Reforma Bridge

Due to the ongoing construction work on the encasement project of the New River, the historical discharges (approximately a dozen point sources) located between the South Collector and Drain 134 are no longer visible.

Photo #12

Photo #13

Recommendations/Comments

- The South Collector is undergoing major rehabilitation work at several locations. As a result, several million gallons per day of sewage are being bypassed into the New River. It is important for the Binational Technical Committee to address equipment needs for operation and maintenance. Standby emergency equipment for situations like this one need to be obtained, as pumping around the "collapsed" areas should be the preferred alternative to bypassing directly into the New River.

- Rehabilitation work was observed on a collapsed segment of the South Collector near "Calle Nuevo Leon", 1000 meters will be rehabilitated by installing a liner. This work should be completed by the end of January 2000. (photo #12)

- Rehabilitation work of Collector "Calle 10" was observed near the intersection of "Ave. Coahuila" and "Calle Cuyutlan"; this collector ties into the South Collector. Approximately 300 meters are to be lined. This work should be completed by the end of December 1999. (photo #13)

- The Alamo Weir is still a concern. Although, it was not visited during this observation tour, no additional work has been done to the weir. As a result, dry weather flows are still crossing the boundary. The original goal for this project was to eliminate the trans-boundary flow of water into the United States.

- Ventilation ports have been installed throughout the encasement of the New River. These ports are located approximately 0.25 mile apart. These ventilation ports now serve as gutters, as Mexico has performed work that allows runoff from the street to flow directly into the New River (photos #14).

- Construction work was observed at Pump Station #4, which is approximately 40% complete (photos #15 & #16).

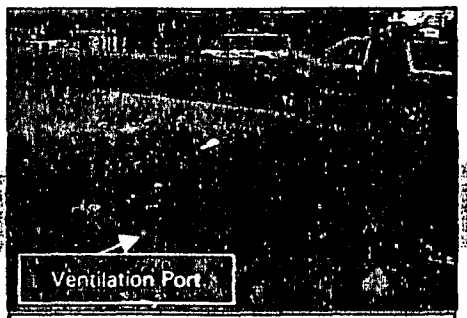

Photo #14 - New River Encasement

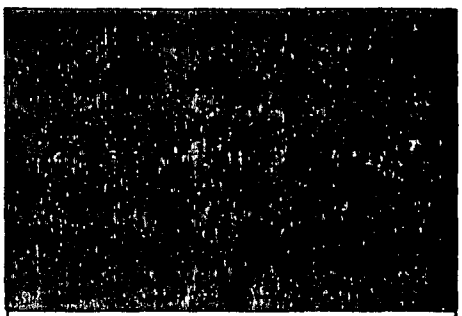

Photo #15 - Pump Station #4

Photo #16 - Pump Station #4

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September 3, 1999

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Jose Luis Lopezgamez, Imperial Irrigation District, Winterhaven, CA
Dean Hager, Imperial Irrigation District, Imperial, CA

Enclosed is a copy of a report with the observations of an August 26, 1999 Binational Tour of the New River in the Mexicali B.C. area.

Phil A. Gruenberg
Executive Officer

Enc.

File: INTER

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Colorado River Basin Region

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Secretary for Environmental Protection

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Gray Davis
Governor

TO: International Pollution File

FROM: Phil Gruenberg, Executive Officer

DATE: September 3, 1999

SUBJECT: BINATIONAL OBSERVATION OF NEW RIVER POLLUTION IN MEXICALI

The subject observations were conducted on August 26, 1999, and included the following participants:

Dawi Dakhil, Charles Fisher, Al Goff, Tanya Mikita	U.S. IBWC
Leticia Gomez	CNA
Phil Gruenberg	RWQCB 7
Mauricio Negrete	CESPM
Juan Riosmoreno	CILA

Mexicali Drain

The Mexicali Drain appeared more severely polluted then normal, and with greater than normal flow--particularly in the Tula West tributary [Figure 1]. Substantially contributing to the pollution were the following:

- Approximately 30 gallons per minute (gpm) of putrid milky green wastewater from the Hidrogenadora Nacional plant. The discharge created a greasy scum on the surface of the receiving drain [Figure 2].

- Approximately 10 cfs of dark wastewater was flowing from the terminus of the Tula West concrete encasement about one mile upstream, of the Hidrogenadora plant. Although sewage solids were not readily observed, the wastewater had the appearance and odor of raw sewage.

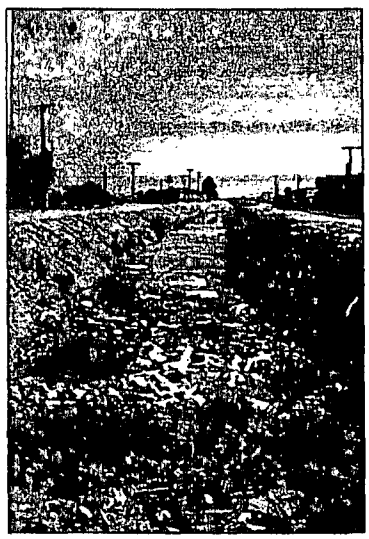

Figure 1

Figure 2

- Approximately 5 cubic feet per second (cfs) of dark wastewater from the Gonzalez-Ortega treatment lagoons. The influent into one of the lagoons was milky-white, which suggests that it has significant industrial characterisitcs [Figure 3]. Although the lagoons have been dredged and appeared to be in satisfactory condition, a lack of detention time and probable lack of industrial pretreatment continue to contribute to poor lagoon performance.

- Approximately 7 cfs of wastewater from the Nutrimex collector near Pumping Plant No. 4 [Figure 4]. The wastewater appeared to be a mix of street runoff and raw sewage.

- Approximately 5 cfs of dark raw sewage from the Mexicali II collector terminus at the San Felipe Highway Crossing [Figure 5].

Figure 3

Figure 4

Figure 5

In addition to the above, the usual discharges were noted from the Vidriera and Kenmex plants. A bypass point next to the Vidriera plant was wet suggesting a possible recent spill of raw sewage. The Quipac plant was not operational, and considerable activity there indicates it may have changed ownership and may be undergoing renovation. A cotton processing operation, Sociedad Cooperativa LEA has been demolished and replaced with a steel plant (apparently a maquiladora). Sociedad Cooperativa LEA had previously been noted as a discharger of oily waste to Mexicali Drain. No problems were noted at the Gonzalez-Ortega pumping station.

Pumping Plant No. 4 (PP4)

Construction of PP4 continues. Figure 6 shows the on-going project. The groundwater table is apparently posing a potential problem and is being pumped out. The project will reportedly be completed by February 2000. Work on the force main and treatment plant is out for bid and reportedly is not anticipated to commence before completion of PP4.

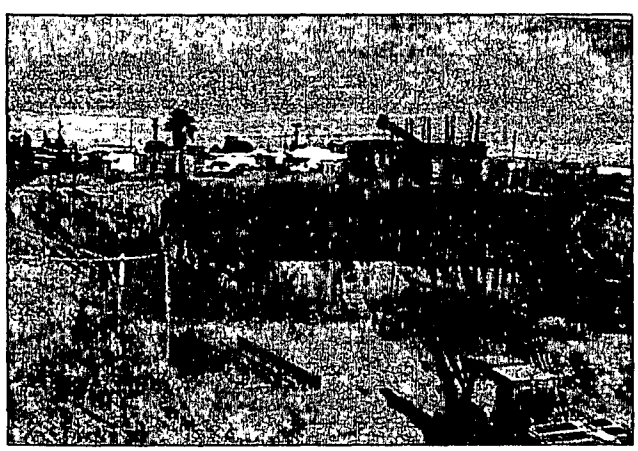

Figure 6

New River – Mexicali Drain Outlet to Concrete Encasement

The primary problem noted was about 2 cfs of raw sewage emanating along the west bank of the New River, several hundred yards upstream of Lift Station No. 26 (LS26) [Figure 7]. This was formerly a long-standing discharge, which was supposed to have been eliminated as part of the quick-fix program—and was, at least for a while. This bypass began over 2 months ago, and its cause is under investigation. A trickle of raw sewage was being bypassed at LS26. About 20 gpm of wastewater that appeared to be primarily street runoff was being discharged from the Castellon outfall. Another significant problem noted was a bypass of approximately ½ cfs of raw sewage about ½-mile upstream of Av. Anahuac [Figure 8].

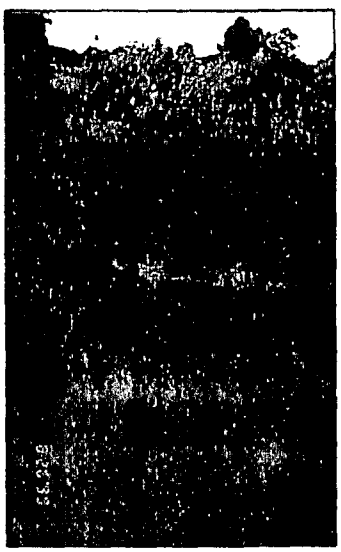

Figure 7

Figure 8

Mexicali I Lagoons

The effluent from the lagoons was bright green [Figure 9]. Work on the number three primary basin distribution systems was underway and apparently approaching completion. Work on the distribution system to the secondary lagoons continues. Consequently, several of the basins are non-operational [Figure 10].

Figure 9

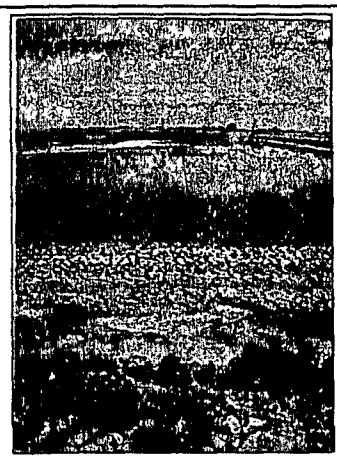

Figure 10

Pumping Plants I-3

The only problem noted was a missing pump at Pumping Plant No. 3 [Figure 11]. The pump is reportedly being repaired at a shop in Mexicali because of a shaft-coupling problem. Also, the new flow meters remain in unsatisfactory condition.

Figure 11

Figure 12

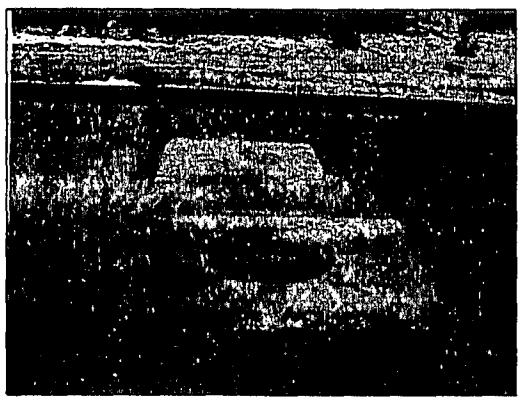

Figure 13

Concrete Encasement Project

The encasement of the New River has now been completed from Av. Anahuac to Av. Reforma. Figure 12 shows the beginning of the encasement at Av. Anahuac. With parallel highway construction in the floodplain, the New River is now practically invisible. The highway construction extends over about half the length of the encasement. A high groundwater table and considerable dumping of demolition rubble and trash will complicate completion of the highway to the south.

Although raw sewage from the South Collector is reportedly being bypassed to the river, this could not be visually verified. From a practical standpoint, the condition of the river and its discharges can no longer be monitored visually from Av. Anahuac to Av. Reforma. An exception was an overflowing manhole in the middle of the highway just north of Pumping Plant No. 2 [Figure 13]. Raw sewage from the manhole was draining into a storm collector presumably hooked into the encasement.

Recommendations:

- It appears that until a comprehensive video survey of the Mexicali I collection system is completed and all deteriorated pipeline replaced, raw sewage spills into the New River will continue on a routine basis as sections of pipeline collapse. The last round of "quick fixes" identified and corrected only some of the problems.

- As more of the river and its tributaries are pipelined, assessment of pollution and sources must increasingly rely on sampling and analysis rather than on visual observations. All bypass connections, stormwater lines and conveyance lines looked into the encasement should have both observation and sampling ports.

- Effort should commence on the Mexicali II force main and treatment system as soon as possible.

California R gional Water Quality ontrol Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Governor

August 6, 1999

Barbara Boxer, U.S. Senator, Washington, D.C.
Dianne Feinstein, U.S. Senator, Washington, D.C.
Mary Bono, U.S. Congresswoman, Washington, D.C.
Carole Starr, Congressman Hunter's Office, Imperial, CA
Dave Kelley, Senator 37th District, Palm Desert, CA
Jim Battin, Assemblyman 80th District, Palm Desert, CA
Shere Mann, c/o Stephen J. Peace, Assemblyman, Chula Vista, CA
John Bernal, Commissioner, International Boundary and Water Commission, El Paso, TX
Carlos Peña, International Boundary and Water Commission, El Paso, TX
Al Goff, International Boundary and Water Commission, Yuma, AZ
Dawi F. Dakhil, International Boundary and Water Commission, Calexico, CA
David Strange, Federal Bureau of Investigation, San Diego, CA
Eugenia McNaughton, U.S. EPA, Attn: W-4, San Francisco, CA
James Stubchaer, Chairman, State Water Resources Control Board, Sacramento, CA
Bart Christensen, State Water Resources Control Board, Sacramento, CA
Michael Perrone, State Water Resources Control Board, Sacramento, CA
Francisco Herrera, Assistant to Governor For International Affairs, Sacramento, CA
Gale Filter, CA District Attorneys Association, Sacramento, CA
Steven Gold, City of San Diego, San Diego, CA
Imperial County Board of Supervisors, El Centro, CA
Benjamin Lehr, Imperial County Health Officer, El Centro, CA
Tom Wolf, Imperial County Division of Environmental Health, El Centro, CA
Robertta Burns, Asst. County Administrative Officer, Imperial County, El Centro, CA
Jesse Silva, Imperial Irrigation District, Imperial, CA
Jose Luis Lopezgamez, Imperial Irrigation District, Winterhaven, CA
Dean Hager, Imperial Irrigation District, Imperial, CA
Mike Richmond, District Director San Diego Office of Senator Dianne Feinstein, San Diego, CA

Enclosed are the observations of a July 28, 1999 Binational Tour of Industrial Discharges in Mexicali, B.C.

Phil Gruenberg
Executive Officer

Enc.

File: INTER

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

TO: International Pollution File

FROM: Phil Gruenberg, Executive Officer

DATE: July 30, 1999

SIGNATURE: Phil Gruenberg

RE: Binational Observation of Industrial Discharges in Mexicali on July 28, 1999

Observation Participants:

Francisco Bernal	CILA – Mexico
Guillermo Sillas	CILA – Mexico
Juan Riosmoreno	CILA – Mexico
Ernesto Murillo Nafarrate	CNA – Mexicali
Rene Martinez	CNA - Mexicali
Al Goff	IBWC - Yuma
Dawi Dakhil	IBWC – San Diego
Jose L. Angel	CRWQCB – Palm Desert
Phil Gruenberg	CRWQCB – Palm Desert
Rafael Molina	CRWQCB – Palm Desert

Overview:

A September 1997 report by CH2M Hill contained a listing of industrial discharges into the New River and its tributary drains in Mexicali. Over half of these discharges the Regional Board's staff was unaware of. In order to help determine whether the scope of present planned efforts to clean up the New River needed to be expanded to address these newly identified discharges, a binational observation tour of the sites which are the sources of these discharges was proposed. Since 38 sites needed to be visited, the Regional Board staff prioritized the discharges so that those of greatest concern would be visited first. The report that follows summarized those sites visited on this initial tour on July 28, 1999.

Photo #1 – Discharge from Establo las Delicias

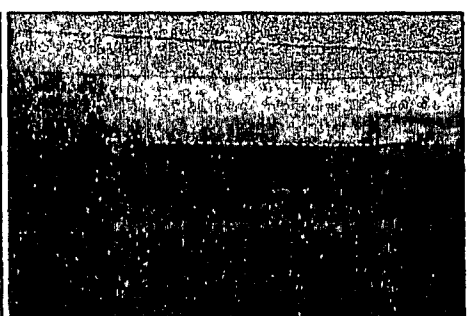

Photo #2 – Establo las Delicias

Establo Las Delicias:

Establo Las Delicias is a dairy that appeared to have at least 500 dairy cattle present. Milking is reportedly done by hand. About 5 gallons per minute (gpm) of turbid brown wastewater was emanating from the facility to an adjacent drain, which is part of the Mexicali Drain system. The discharge is apparently comprised of washdown from the pens and the milking area. CNA has reportedly taken enforcement action against the discharger, which is now awaiting direction from a Mexican federal court.

Photo #3 - Manhole near Instituto Tecnologico

Plasticus, S.A. de C.V.:

This plastics plant is reportedly now connected to the city sewer system. However, about 15 gpm of wastewater was flowing from a brick manhole, downgradient from the plant, apparently into a drain tributary to the Mexicali Drain. Some of the submerged vegetation in the drain was covered with a gray/white bacterial slime which is characteristic of waters receiving raw sewage. The Instituto Tecnologico de Mexicali is also located in this area and could be a contributor to the flow in the manhole.

Photo #4 - Glico Alimentos de Mexico

Glico Alimentos de Mexico:

This maquiladora, which reportedly processed frozen food, has apparently been closed for over a year. There were no indications that the business will resume operation. A new Nestle plant is located next to Glico, but is reportedly connected to the Mexicali II sewer system.

Agricola Baja Bonita, S.A. de C.V.:

This vegetable packing plant was not in operation, although it is presumed that operation would resume in the fall/winter when vegetables are being harvested. The discharge from the facility could be significant in terms of volume and strength, since about a ¼ acre holding basin exists on the premises.

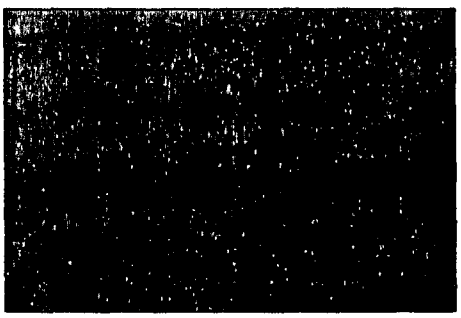

Photo #5 - Agricola Baja Bonita

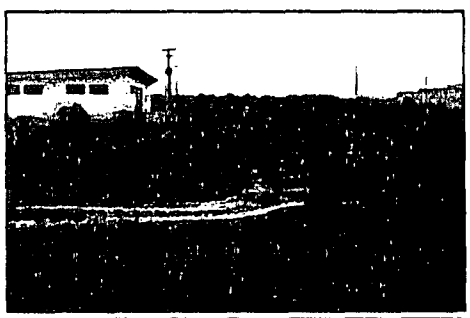

Photo #6 - Discharge from Serv. Textiles de B.C.

Serv. Textiles de B.C. S.A.:

This facility is an industrial laundry located in an obscure area far removed from the city of Mexicali. Visual access to the plant and its discharge was via permission from the Cerro Prieto geothermal operation (CFE - Federal Electricity Commission). The plant is completely independent of the geothermal operation, but is located adjacent to it. The facility reportedly accepts dirty linen primarily from hospitals in the United States, but also from an array of other sources. On the grounds of the facility several truck trailers were noted with "Hospital Textile Systems, Inc." imprinted on them. Many sealed containers, presumably containing the dirty laundry, were visible. About 20 gpm of milky wastewater was being discharged from the facility to a receiving drain ultimately tributary to New River. The operation has reportedly been the target of enforcement by Mexican regulatory agencies. The facility has been ordered by Mexican authorities to post a bond to ensure that the wastewater is satisfactorily characterized and treated prior to discharge. The actions of the Mexican regulatory agencies have reportedly been challenged in court. This facility has reportedly been in operation for at least five years.

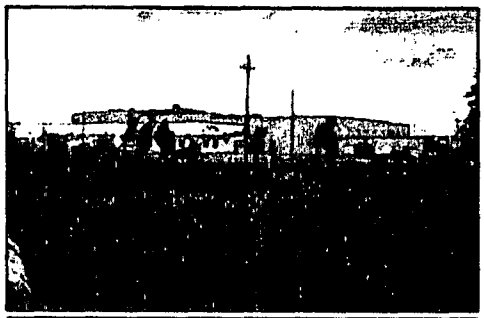

Photo #7 - Serv.Textiles de B.C.

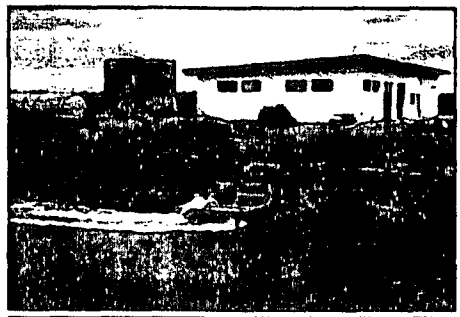

Photo #8 - Discharge from Serv. Textiles de B.C.

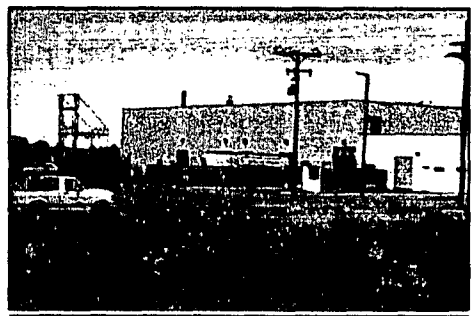

Photo #9 Serv. Textiles de B.C.

U.A.B.C. (Inst. Cs. Agricolas):

This is a University research center coupled with two high schools. Reportedly, treated wastewater is discharged to a receiving drain ultimately tributary to New River. The receiving drain was overgrown with brush so that an estimate of discharge volume was impossible. However, the dark gray color of the flow in the drain strongly suggested the presence of raw sewage.

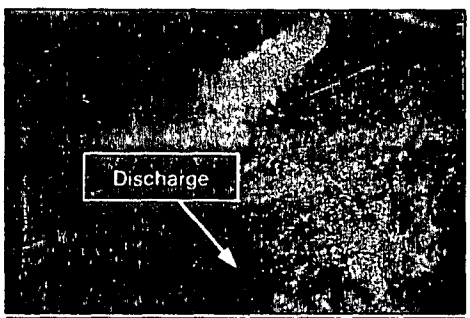

Photo #10 Discharge from Pullidos De Calidad

Pullidos de Calidad, S.A. de C.V.:

This fairly small plant apparently polishes auto rims. About 1 gpm of clear wastewater was being discharged from the plant to the New River system.

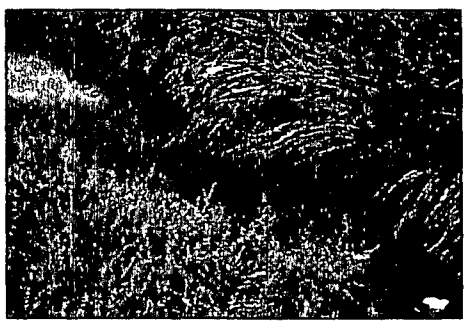

Photo #11- Bachoco Discharge

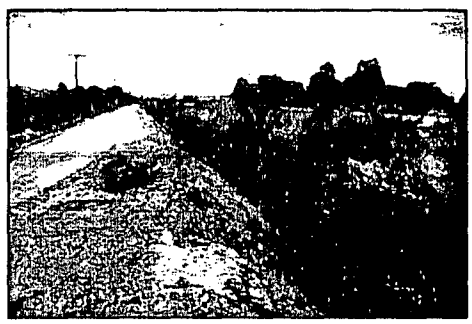

Photo #12- Bachoco Discharge

Bachoco, S.A. de C.V.:

This extensive hog and chicken farm has space for many thousands of chicken/hogs. About 3 gpm of overflow wastewater was being discharged into a receiving drain that caused the slow flowing drain to assume a turbid purple/red appearance. Reportedly, no meat processing occurs here so the source of the discharge must solely be washdown from the animal enclosures. However, the color of the wastewater certainly suggested slaughterhouse waste.

Parque Industrial Moran:

The Moran industrial park is an extensive industrial complex which reportedly is now connected to the Mexicali II sewage collection system. Until the Mexicali II plant is constructed and operational

this wastewater continues to be discharged untreated to the Mexicali Drain via the Mexicali II Collector.

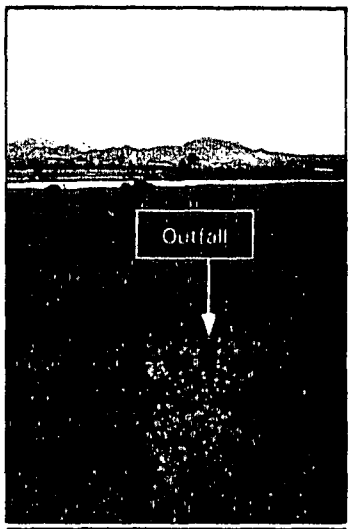

Photo #13- Outfall from Ganadera Integral El Centinela

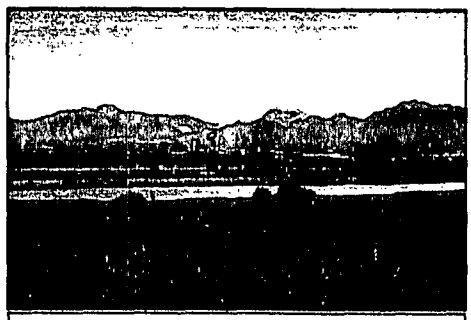

Photo #14- Ganadera Integral El Centinela

Ganadera Integral El Centinela:

This is a relatively large operation, which includes a feedlot with capacity for thousands of cattle along with a slaughterhouse. Wastewater is being discharged to a large expanse of plowed flat land contained by earthen barriers. There is an overflow pipe from the containment basin to a receiving drain tributary to the drain conveying effluent from the Mexicali I wastewater treatment plant. The containment basin was in no danger of overflowing and could apparently contain many times the present volume of wastewater. The threat of overflow into the drain would increase from rainfall and during winter periods when evaporation declines.

Recommendation/Comments:

IBWC, CILA, and CNA are commended for facilitating the tour. The difficulties in assessing the subject dischargers while taking precautions to avoid unauthorized entry are recognized, and the Mexican participants led by Francisco Bernal acted very efficiently in overcoming these obstacles.

It is recommended that the observations of industrial dischargers in the Mexicali area continue. The U.S. participants can continue to offer technical advice as requested and can assist in addressing any discharge concerns which have origins/connections within the domain of United States control. Such observations also allow the U.S. participants to report information to the public factually, rather than on a speculative basis.

The discharge from Services Textiles de B.C. S.A. is considered to be the most serious finding from these initial observations. Because of the connections with hospitals in the United States, it is recommended that U.S. EPA investigate why laundry from the United States is being taken to a relatively remote location in Mexico.

Although the threat to the New River from the Centinela feedlot and slaughterhouse is presently very low, this operation has much room for expansion and should be observed periodically.

Sampling and analysis of some industrial discharges would be desirable and allow for more definitely determining whether or not a substantial threat exists.

PAG/pkg

California F gional Water Quality ontrol Board
Colorado River Basin Region

Winston H. Hickox
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Gray Davis
Governor

To: Jose L. Angel Date: June 29, 1999

From: Rafael A. Molina

Subject: Binational Observation Tour of the New River in the Mexicali area.

On Thursday June 24, 1999, I participated in the observation tour of the New River drainage and wastewater system in Mexicali, B.C. During this tour, we observed direct and indirect discharges of industrial, commercial, and domestic wastewater into the New River and its tributaries. Additionally, observations were conducted at both of Mexicali's wastewater treatment plants and major pump stations. The following were this tour's participants:

Dawi Dakhil	IBWC – San Diego
Al Goff	IBWC – Yuma
Alfredo Delacerda	CILA - Mexicali
Juan Riosmoreno	CILA - Mexicali
Victor M. Garciá	CNA - Mexicali
Manuel Fernàndez Calderon	CNA - Mexicali
Mauricio Negrete	CESP - Mexicali
Mario Soberanes	CESP - Mexicali

The following were my observations:

Industrial Waste

Tula West Drain (TWD) at Highway 2

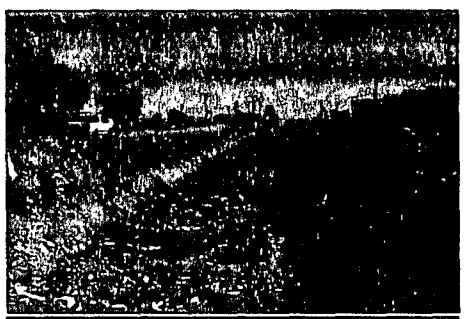

Photo #1 – TWD @ Highway 2

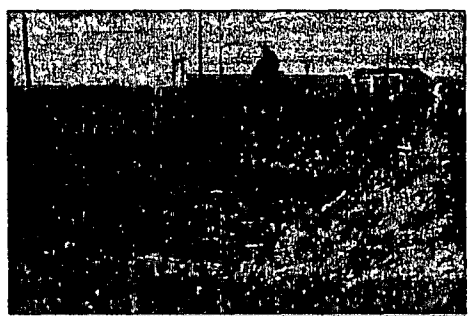

Photo #2 – TWD @ Highway 2

On the whole, there was less trash and debris than is usually found at this site (photos #1 & #2). The water level in the drain was unusually low. Its watercolor varied from olive green at the highway to gray near the Hydrogenadora Plant. This suggests that the wastewater being discharged from the Hydrogenadora Plant had a high biochemical oxygen demand, thus causing anaerobic conditions, which resulted in the grayish watercolor in the drain. Additionally, there was little vegetation along the banks of the drain. Moreover, there was a pungent, septic odor that was emanating from this location.

A total of ± 2.0 liters per second (lps) of clear wastewater were being discharged from two PVC pipes into the drain at this location (these pipes are located on opposite banks from each other). The discharge on the right bank comes from the Motel Olympo, which is located less than a half-mile west of the TWD along Highway 2. It was learned during the observation tour, that CNA is planning to assess a fine to the Motel for the discharge into the drain.

The encasement of the TWD is on hold, primarily as a result of funding problems. CESPM personnel stated that there are no immediate plans to resume the encasement project.

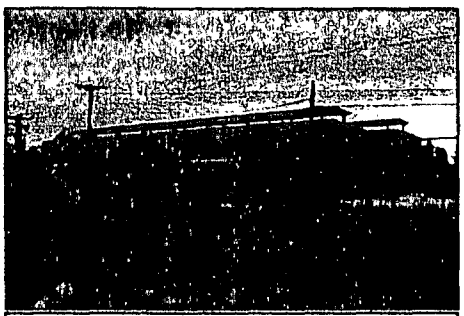

Photo #3 - Quipac Facility

Quipac

There were no discharges from this plant into the drain. At this location, the watercolor in the drain was dark, and the water had an oily sheen on its surface.

It appears as if this facility will resume operation soon, as workers were observed installing air conditioning units in the office area (photo #3).

Hydrogenadora Nacional

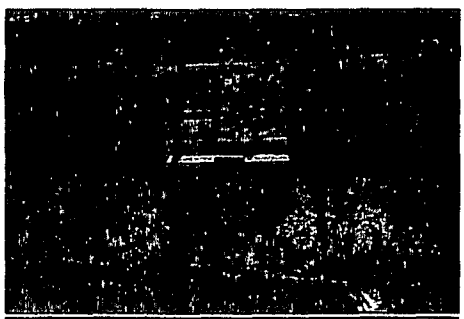

Photo #4 - Hydrogenadora Plant

Less than 1 lps of green wastewater was being discharged into the drain at this location. A slight grease/oil like odor was emanating from this facility. Furthermore, there was an oil sheen/blanket that was a direct result of this discharge (photo #4).

Vidriera Mexicali (formerly known as VitroMex)

This plant was discharging a total of ± 2 lps of clear wastewater into the drain (photo #5). The water color in the in the drain was silty brown. This can be attributed to work being done on the railroad tracks, which caused a disturbance in the soil (photo #6). The overwhelming amount of vegetation that was a characteristic of this site was finally removed by CNA (photo #7).

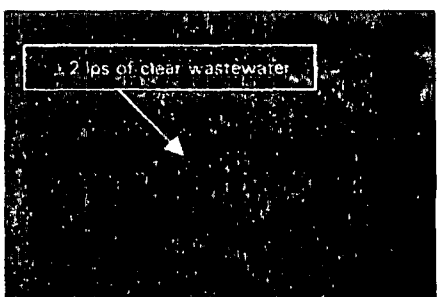

Photo #5 - TWD @ Vidriera Mexicali

Photo #6 - TWD @ Vidriera Mexicali

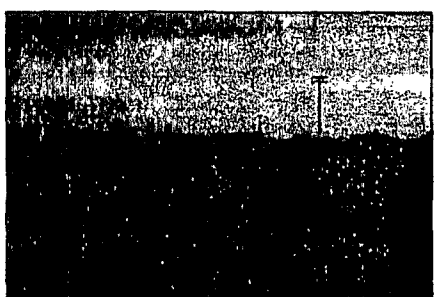

Photo #7 - TWD @ Vidriera Mexicali

Pump Stations and Wastewater Treatment Plants

Photo #8 – G.O. Pump Station

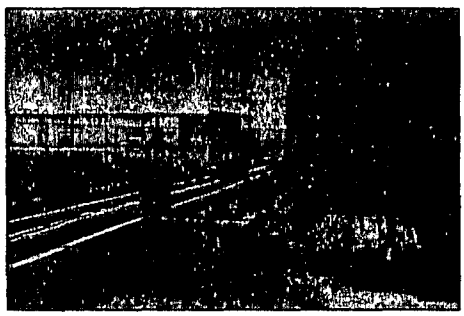

Photo #9 – G.O. Lagoons

Gonzalez - Ortega Pump Station

Pump #1 was the only pump in operation; the other two pumps were both off, but operable. There were no adverse conditions observed here (photo #8).

Gonzalez - Ortega Lagoons

In general, the lagoons continue to be overloaded. Their watercolor was black. A scum layer was observed in two of the primary lagoons. There was no vegetation along the banks of these lagoons. The septic odor from this facility was not as strong as it has been during previous visits. A septage hauler was discharging into the lagoon system (photo #9).

Mexicali I Lagoons

Primary lagoons #1 and #2 were at full capacity; their watercolor was black. There was little vegetation along these banks. Primary lagoon #3 will be online soon; it was taken out of service to allow for the installation of a new distribution system. The effluent from this facility was pea green in color (photo #10).

An Aquatech sewer vacuum truck was observed unloading sediment/solids onto a field adjacent to primary lagoon #1. This was one of the trucks that were acquired in the "Quick Fix" Program (photo #11).

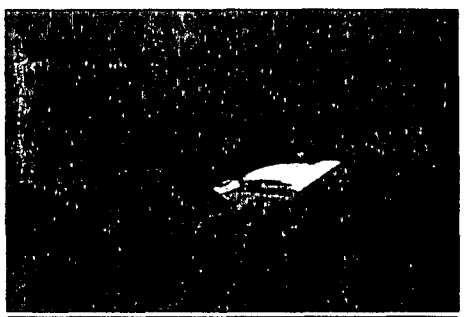

Photo #10 – Effluent from Mexicali I

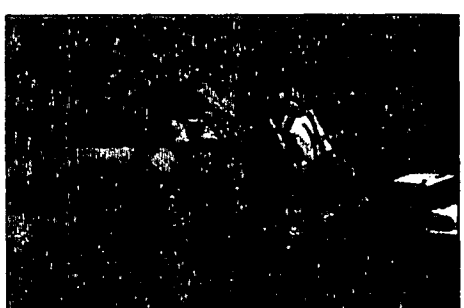

Photo #11 – Aquatech Vacuum Truck

Similarly, most of the secondary lagoons were at full capacity. In general, their watercolor was green. The only exceptions, were lagoons #3 and #4, which were offline, as CESPM was continuing to perform work that will convert these lagoons from a parallel to a series arrangement. This work is approximately 25% complete.

Pump Station #1

Pumps #3 and #5 were operating. Pumps # 1, #2, and #4 were all off, but operable. Pump #6 was not online. The flow meters here are still not reliable. (photo #12)

Pump Station #2

Pump #2 of the upper sump, and pump #3 in the lower section were the only pumps operating. All of the other four pumps were operable, yet off. Similarly, the flow meters at this pump station are not completely reliable. (photo #13)

The right bank pump station was also operational.

Pump Station #3

None of the pumps were on at the time of this tour (photo #14). This can be attributed to the reduced flow resulting from the collapsed South Collector. The flow meters here are still not reliable, as they give false readings. The manufacturer has been promising to correct this matter, but it has not done so yet.

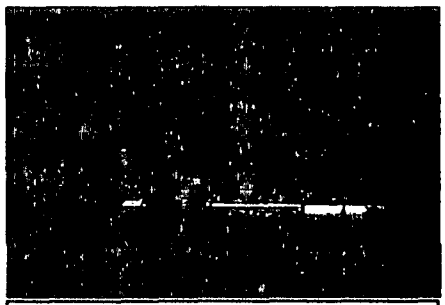

Photo #12 - Pump Station #1

Photo #13 - Pump Station #2

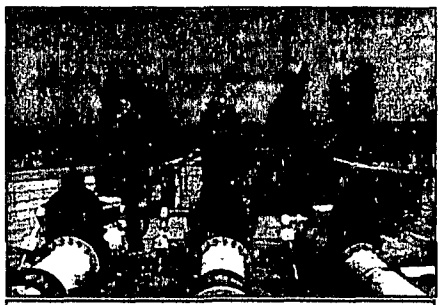

Photo #14 - Pump Station #3

New River Discharges

Location • Amount and Type of Discharge

Photo #15 - South Collector

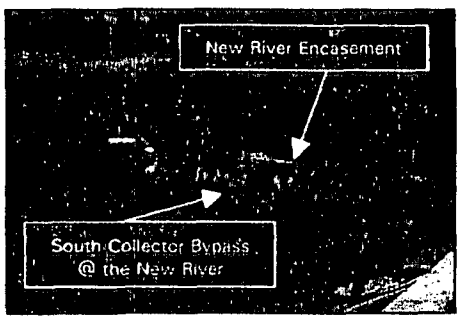

Photo #16 - South Collector @ New River

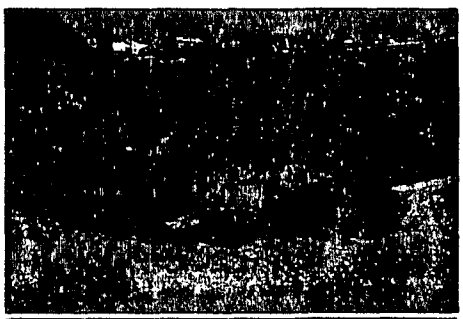

Photo #17 - Nutrimex Bypass

Ken/Mex Plant located at the Old Mexicali Drain; ±1 lps clear trickle of wastewater

Nutrimex bypass; ±65 lps of sewage discharging into the Mexicali Drain. Water color in the drain was brown/green. (photo #17)

48" pipe, Principal Collector discharging to the Mexicali drain; ±75 lps of raw sewage, water color in the drain was brown/green upstream, and black downstream of this discharge.

Photo #18 - Principal Collector

Drain 134, located at the New River; this discharge is no longer visible as a result of the encasement roject

The following sites were also visited, in each case there was no discharge into the New River:

Bypass outlet from pump station, left bank, located at Cardenas Ave.

Bypass outlet - Plant #26 from pump station, located 0.33 miles upstream of Cardenas Ave.

Storm drain, left bank, located 0.50 mile upstream of Cardenas Ave.

Bypass trench, right bank, located 0.75 mile upstream of Cardenas Ave.

Slaughterhouse outlet, ps #11 located 0.25 mile upstream of Anahuac Ave.

New PVC 4" pipe, 0.25 mile upstream of Anahuac Ave.

Storm drain, located 0.25 mile upstream of Anahuac Ave.

Storm drain, left bank, located 200' downstream of Anahuac Ave.

Storm drain, left bank, located 600' downstream of Anahuac Ave.

Storm drain, left bank, located 800' downstream of Anahuac Ave.

Overflowing manhole, left bank, 75' upstream of Pump Station #2

Storm drain, left bank, located 30' downstream of Pump Station #2

Storm drain, left bank, located 200' downstream of Pump Station #2

Storm drain, left bank, located 300' downstream of Jalisco St.

Storm drain, left bank, located downstream of Colima Street.

Interceptor line, left bank, located at Reforma Bridge

Interceptor line, right bank, located at Reforma Bridge

Due to the ongoing construction work on the encasement project of the New River, the historical discharges (approximately a dozen point sources) located between the South Collector and Drain 134 are no longer visible.

Recommendations/Comments

- The South Collector collapsed due to the deteriorated state of the concrete pipe. As a result, 500 lps of sewage were being bypassed into the New River. Pumping the sewage around the collapsed area of the South Collector to Pump Station #2 should have been the preferred alternative, instead of bypassing the entire flow into the New River. (photos #15 & #16).

- As illustrated in photo 19 the Alamo Weir issue needs to be revisited, as the weir is clearly not preventing the dry weather flows from entering the United States. At least 50 lps were overflowing the weir at the time of our visit.

Approximately 125 meters of the collapsed concrete pipe will be replaced with a 54" PVC pipe. Ten pipe segments, each with a length of 4 meters had already been installed at the time of our visit. CESPM anticipated the collector to be functional within the next two weeks.

It is important for the Binational Technical Committee to address equipment needs for operation and maintenance, as well as standby emergency equipment for situations like this one.

- Ventilation ports have been installed throughout the encasement of the New River. These ports, which are located approximately 0.25 mile apart, can be used to monitor the water quality of the New River (photo #20).

- Construction work was observed at Pump Station #4. Work is approaching 20% completion (photos #21 & #22).

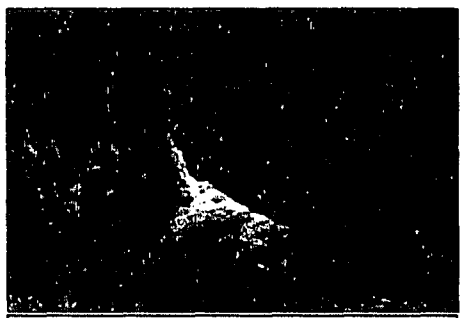

Photo #19 - Alamo River Weir

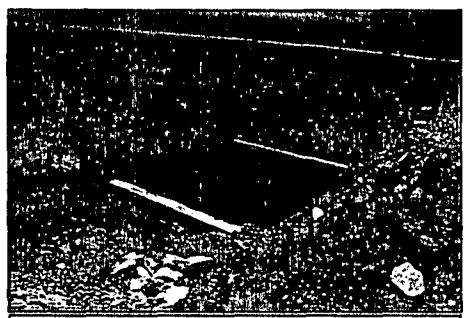

Photo #20 - TWD @ Highway 2

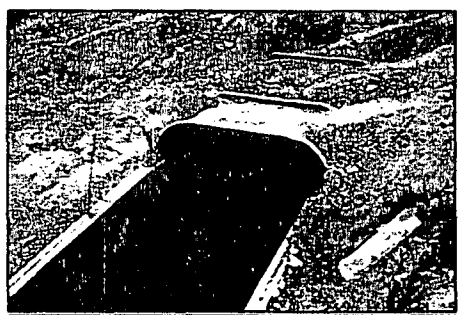

Photo #20 - New River Encasement @ Reforma Bridge

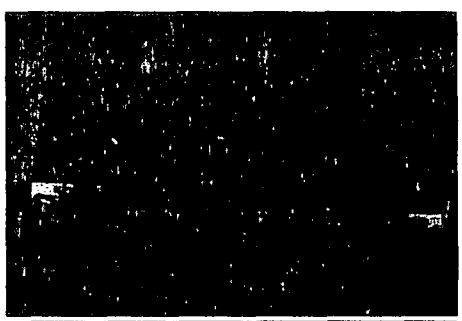

Photo #21 - Pump Station #4

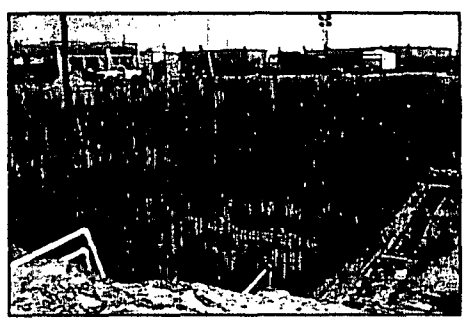

Photo #22 - Pump Station #4

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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Phone (760) 346-7491 · FAX (760) 341-6820

Gray Davis
Governor

To: Jose Angel

From: Daniel McClure

Date: 7/22/99

Signature: Daniel McClure

Subject: May 1999 Binational Observation Tour of the New River Drainage and Wastewater System in the Mexicali Area.

On May 27, 1998, I participated in an observation tour of the New River drainage and the wastewater system in Mexicali, B.C. The following people were the other participants for this tour:

Tanya E. Mikita	USIBWC (Yuma)
Victor Garcia	CNA (Mexicali)
Gerardo Saille	CNA (Mexicali)
Manuel Caldera	CNA (Mexicali)
Juan Riosmoreno	CILA (Mexicali)

The following were my observations:

Industrial Waste

Tula West Drain at Higway 2

Figure 1: Tula West Drain at Highway 2

The water in the Tula West Drain at Highway 2 was opaque, greenish-black, and there was a thin oily film at the water's surface, as shown in Figure 1. The water was also bubbling, indicating anaerobic conditions in the drain. The water level in the drain was high, but the water was flowing relatively slowly (at a rate of approximately 15 liters per second) through the culverts that pass under the highway. The slow rate of flow was due to the large amount of trash present in the drain. Some work had been done to clear trash out of the drain since the previous month's tour. No discharges into the Tula West drain were observed at this location.

Quipac

There were no observable discharges into the Tula West Drain from any of pipes near the Quipac plant, which appears to be closed. The water in the drain at this location was also greenish-black and bubbling.

Hydrogenadora Nacional

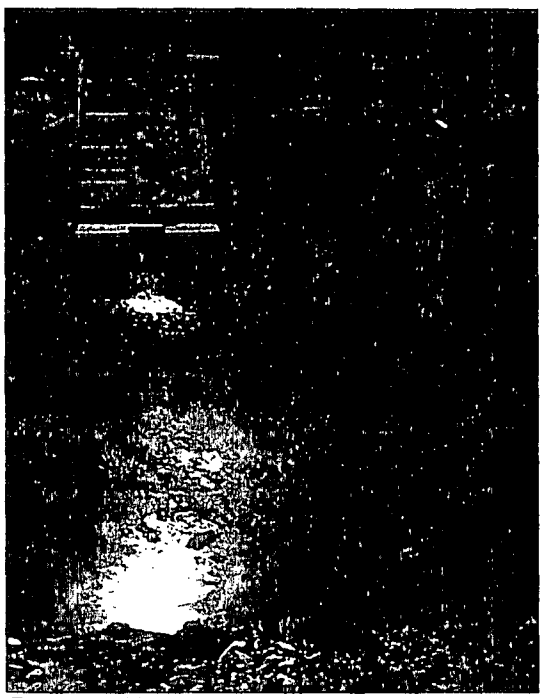

Figure 2: Hydrogenadora Nacional

There were two observable discharges into the Tula West Drain near the Hydrogenadora Nacional vegetable oil plant, approximately one half mile from Highway 2. The 6" pipe located at the foot of the stairs was discharging a clear liquid into the drain at a rate of approximately 5 liters per second (as shown in figure 2). A 4" pipe immediately to the right of (downstream) of the stairs was discharging approximately 1 liter per second of a clear liquid into the drain. The water in the drain at this location was opaque greenish-gray. A layer of scum partially covered the surface of the water in the drain.

Vidriera Mexicali (formerly known as Vitromex)

Figure 3: Vidriera Mexicali Discharge

The Vidriera Mexicali glassware manufacturing plant was discharging a total of approximately 2 liters per second of a clear liquid into the Tula West Drain through three $\pm$ 1"-diameter PVC pipes on the right bank of the drain, one of which is shown in Figure 3. The water in the drain at this location was opaque, deep-green, and flowing at approximately 20 liters per second. The water in the drain just below the outfalls of these discharges was gray in color.

Pump Stations and Wastewater Treatment Plants

Gonzales-Ortega Pump Station

At the time of our observation tour, the Gonzales Ortega Pumping Station appeared to be in good working order. Pump No.3 was in operaton, and the other two pumps were off, but operable. Work was being performed on the odor-suppressant ferric chloride system.

Gonzales-Ortega Lagoons

Figure 4: Construction at the Gonzales-Ortega Lagoons

The eight lagoons at the Gonzales-Ortega wastewater treatment facility continue to be overloaded. The lagoons ranged from gray to black in color, and had about three feet of freeboard. There was a strong septic odor at this facility. Some construction was being performed on the flow distribution pipes connecting the lagoons, as shown in Figure 4. The outfall of this facility was not accessible at the time of our tour. Therefore, we could not observe the quality of the effluent.

Mexicali I Lagoons

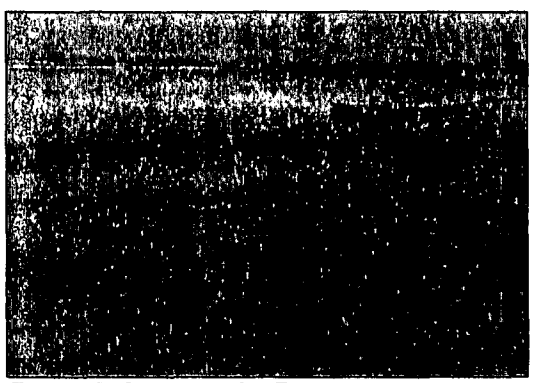

Figure 5: Splitting of a Facultative Lagoon

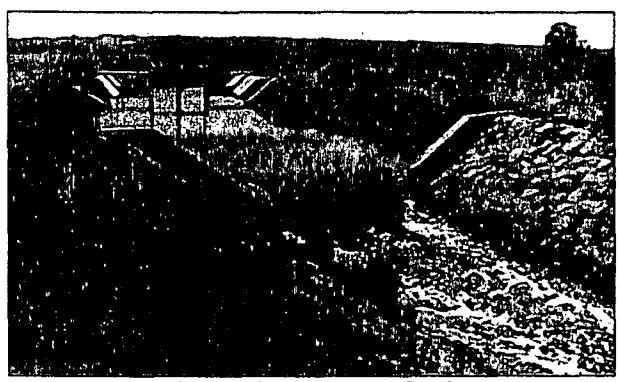

Figure 6: Mexicali I Outfall

The three primary lagoons at the Mexicali I Wastewater Treatment Facility ranged from gray to black in color and had 2, to 5 feet of freeboard. Of the facultative lagoons connected in series on the north side (lagoons F1 through F4), two lagoons (F3 and F4), were not in operation. Lagoons F3 and F4 were almost completely drained. The water in lagoons F1 through F4 was gray in color. Lagoon F2 was being divided into two cells to increase retention time, as shown in Figure 5. The six facultative lagoons connected in series on the south side (lagoons F5 through F10) were all in operation, and ranged from milky whitish-green to pale green in color. The final effluent from the treatment plant was pale-green in color, as shown in Figure 6.

Pump Station No. 1

Figure 7: Installation of a New Pump at Pump Station No.1

At Pump Station No. 1, Pumps No. 1, No. 2 and No. 4 were operating. Pump No .5 was off, but operational. Pump No. 6 was being replaced at the time of our tour, as shown in Figure 7. Members of the Mexican delegation informed us that Pump No. 6 would be operational within a week. Some of the flow meters did not appear to be functioning properly. The standby generator and water purification system were all operational.

Pump Station No. 2

At Pump Station No. 2, Pump No. 3 on the upper level and Pump No. 3 on the lower level were operating. All the other pumps were off but operational. Pump No. 2 on the upper level had recently been replaced. The flow meters for upper level Pumps No. 2 and No. 3 were not working properly. The other flow meters appeared to be functioning properly, and the standby generator was operational.

Pump Station No. 3

At Pump Station No. 3, Pump No. 1 was on, and the other two pumps were off but operational. The flow meters, water softener unit, and standby generator were all operational.

Pump Station No. 4

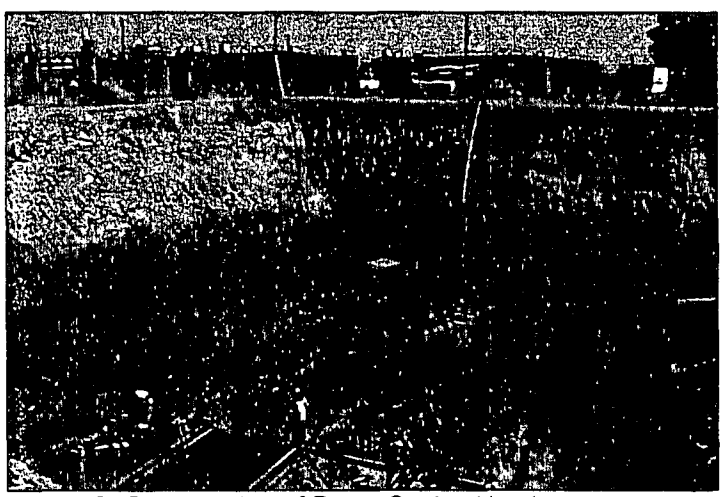

Figure 8: Construction of Pump Station No. 4

Pump Station No. 4, the new pumping station for the proposed Mexicali II Wastewater Treatment Plant, is now under construction near the Nutrimex bypass, as shown in Figure 8.

New River Discharges

Nutrimex Bypass

Figure 9: Nutrimex Bypass

The Nutrimex bypass was discharging ± 60 lps of gray-brown raw sewage into the Mexicali drain, as shown in Figure 9.

48" Mexicali II Collector

Figure 10: 48" Mexicali II Collector

The 48" Mexicali II collector was discharging ± 110 liters per second of gray-brown sewage into the Mexicali drain, as shown in Figure 10.

Other Discharge Points and Observations along the New River

The Ken/Mex Plant was discharging a clear trickle into the Mexicali drain.

The following sites of previous discharges into the New River were also visited, but no discharges were observed:

- Bypass outlet from pump station, left bank, located at Cardenas Ave.
- Bypass outlet – Lift Station No. 26 from pump station, located 0.33-miles upstream of Cardenas Ave.
- Storm drain, left bank, located 0.50-miles upstream of Cardenas Ave.
- Bypass trench, right bank, located 0.75-miles upstream of Cardenas Ave.

- Slaughterhouse outlet, Lift Station No. 11 located 0.25-miles upstream of Anahuac Ave.
- New PVC 4" pipe, 0.25-miles upstream of Anahuac Ave.
- Storm drain, located 0.25-miles upstream of Anahuac Ave.
- Storm drain, left bank, located 200' downstream of Anahuac Ave.
- Storm drain, left bank, located 600' downstream of Anahuac Ave.
- Storm drain, left bank, located 800' downstream of Anahuac Ave.
- Interceptor line, right bank, located at Reforma Bridge
- Interceptor line, left bank, located 50' downstream of Reforma Bridge.

New River Encasement

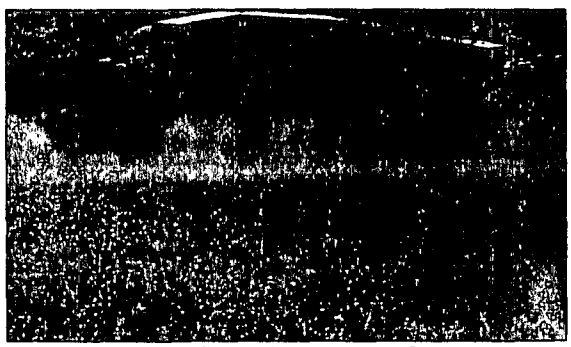

Figure 11: New River Upstream of the Encasement

The water in the New River upstream of the Encasement was gray, as shown in Figure 11, and bubbling in some areas, indicating anaerobic conditions.

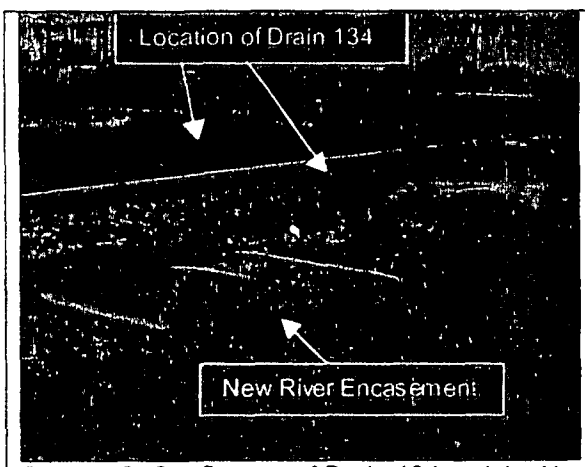

Figure 12: Confluence of Drain 134 and the New River

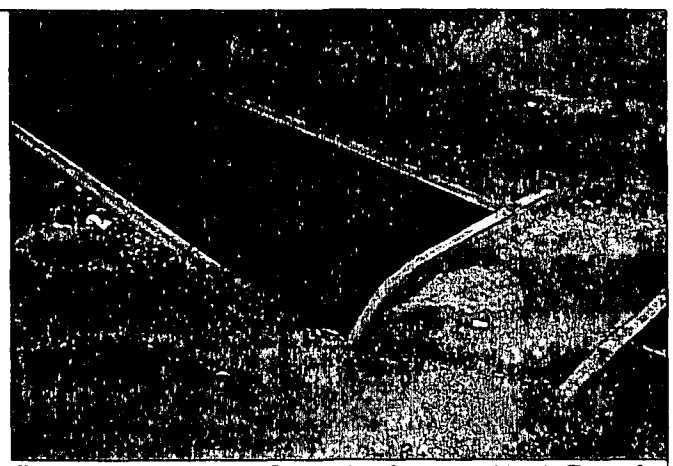

Figure 13: New River Emerging from the North End of the Encasement, Near Reforma Bridge

Due to the ongoing construction work on the encasement project of the New River, the historical discharges (approximately 20 point sources) located between the storm drain 800' downstream of Anahuac Avenue and Reforma Bridge are no longer visible. The largest of these point sources, Drain 134, is now completely covered, as shown in Figure 12. The water in the New River as it emerged from the encasement at Reforma Bridge was dark-gray in color, as shown in Figure 13.

Alamo River Weir

Water was flowing over the Alamo River weir at a rate of approximately 30 to 40 liters per second. The water upstream of the weir was transparent deep-green, as shown in Figure 14.

Figure 14: Alamo River Weir

Comments/Recommendations

- The siphon and canal system upstream of the Alamo River Weir needs to be properly maintained in order to prevent dry weather flows from entering the United States.
- Now that Drain 134 is completely covered and connected to the New River encasement, it is impossible to tell the quality and quantity of water entering the river at this location. The same can be said about the other point source discharges which used to be visible but are now covered by the New River encasement. A sampling and monitoring station should be installed at the junction of the Drain and the New River.