

- II. Influent and Effluent Data Summary.
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A. Mass Emissions

Mass Emissions of Effluent Using 2009 Monthly Averages

DISCHARGE SPECIFICATIONS from NPDES Permit No. CA0109045/RWQCB Order No. 2006-067 effective on January 1st 2007 with limits on pollutant discharges.				
Effluent Limitations Based on Secondary Treatment Standards				
Constituent/Property	Limit: Monthly Average (30 day) (lbs/day)	2009 Mass Emissions (lbs/day) <sup>[1]</sup>	2009 Average Concentration	Units
Flow (MGD)			2.6	MGD
Total Suspended Solids	3,700	123	5.69	mg/L
BOD	3,700	163	7.51	mg/L
Oil & Grease	3,100	50	2.3	mg/L

Effluent Limitations Based on 2005 California Ocean Plan				
Constituent/Property	Limit: Daily Maximum (lbs/day)	2009 Mass Emissions (lbs/day) <sup>[1]</sup>	2009 Average Concentration	Units
Arsenic	350	0.013	0.59	ug/L
Cadmium	48	0.002	0.1	ug/L
Chromium	96	0.011	0.5	ug/L
Copper	120	0.3	13	ug/L
Lead	96	0.013	0.6	ug/L
Mercury	1.9	0.005	0.23	ug/L
Nickel	2.4	0.10	4.52	ug/L
Selenium	720	0.016	0.75	ug/L
Silver	32	0.002	0.1	ug/L
Zinc	860	0.8	35.6	ug/L
Cyanide	48	0.022	0.001	mg/L
Residual Chlorine	96	1.1	0.05	mg/L
Ammonia	29,000	2.2	0.1	mg/L
Non-Chor. Phenols	1,400	0.0	0	ug/L
Chlorinated Phenols	48	0.0	0	ug/L
Endosulfan	0.21	0.00002	1	ng/L
Endrin	0.05	0.00000	0	ng/L
hexachlorocyclohexanes *(HCH)	0.1	0.0000	0	ng/L
* (all as Lindane, the gamma isomer)				

Effluent Limitations Based on 2005 California Ocean Plan				
Constituent/Property	Limit: Daily Maximum (lbs/day)	2009 Mass Emissions (lbs/day) <sup>[1]</sup>	2009 Average Concentration	Units
Acrolein	2,600	0	0	ug/L
Antimony	14,000	0.00	0	ug/L
Bis(2-chloroethoxy) methane	53	0.00	0	ug/L
Bis(2-chloroisopropyl) ether	14,000	0	0	ug/L
Chlorobenzene	6,800	0	0	ug/L
Chromium (III)	--	--	--	
di-n-butyl phthalate	42,000	0	0	ug/L
dichlorobenzenes	61,000	0	0	ug/L
1,1-dichloroethylene	11	0	0	ug/L
Diethyl phthalate	390,000	0.000	0	ug/L
Dimethyl phthalate	9,800,000	0	0	ug/L
4,6-dinitro-2-methylphenol	2,600	0	0	ug/L
2,4-dinitrophenol	480	0	0	ug/L
Ethylbenzene	49,000	0	0	ug/L
Fluoranthene	180	0	0	ug/L
Hexachlorocyclopentadiene	690	0	0	ug/L
Isophorone	70,000	0	0	ug/L
Nitrobenzene	59	0	0	ug/L
Thallium	24	0	0	ug/L
Toluene	1,000,000	0.00	0	ug/L
1,1,2,2-tetrachloroethane	27	0.000	0	ug/L
Tributyltin	0.02	0.00	0	ug/L
1,1,1-trichloroethane	6,500,000	0	0	ug/L
1,1,2-trichloroethane	110	0	0	ug/L
Acrylonitrile	1.2	0.0	0	ug/L
Aldrin	0.00026	0	0	ng/L
Benzene	71	0	0	ug/L
Benzidine	82,000	0	0	ug/L
Beryllium	0.39	0.0	0	ug/L
Bis(2-chloroethyl)ether	0.54	0.0	0	ug/L
Bis(2-ethylhexyl)phthalate	42	0	0	ug/L
Carbon Tetrachloride	11	0	0	ug/L
Chlordane	0.00027	0.00000	0	ng/L
Chlorodibromomethane	100	0	0	ug/L
Chloroform	1,500	0.02	0.9	ug/L
DDT	0.002	0.000000	0	ng/L
1,4-dichlorobenzene	210	0.011	0.5	ug/L
3,3-dichlorobenzidine	0.097	0.00	0	ug/L
1,2-dichloroethane	330	0	0	ug/L
Dichlorobromomethane	74	0.004	0.2	ug/L
Dichloromethane (methylene chloride)	5,400	0.01	0.5	ug/L
1,3-dichloropropene	110	0	0	ug/L
Dieldrin	0.00048	0.00000	0	ng/L

Effluent Limitations Based on 2005 California Ocean Plan				
Constituent/Property	Limit: Daily Maximum (lbs/day)	2009 Mass Emissions (lbs/day) <sup>[1]</sup>	2009 Average Concentration	Units
2,4-dinitrotoluene	31	0	0	ug/L
1,2-diphenylhydrazine	1.9	0.0	0	ug/L
Halomethanes	1,500	0	0	ug/L
Heptachlor	0.0006	0.000000	0	ng/L
Heptachlor epoxide	0.00024	0.0000	0	ng/L
Hexachlorobenzene	0.0025	0.0000	0	ug/L
Hexachlorobutadiene	170	0	0	ug/L
Hexachloroethane	30	0	0	ug/L
N-nitrosodimethylamine	87	0	0	ug/L
N-nitrosodi-N-Propylamine	4.5	0	0	ug/L
N-nitrosodiphenylamine	30	0	0	ug/L
PAHs	0.11	0.00	0	ug/L
PCBs	0.00023	0.000	0	ng/L
TCDD equivalents	0.000000048	0.0000	0	pg/L
Tetrachloroethylene	24	0	0	ug/L
Toxaphene	0.0025	0	0	ng/L
Trichloroethylene	320	0	0	ug/L
2,4,6-trichlorophenol	3.5	0	0	ug/L
Vinyl Chloride	430	0	0	ug/L

<sup>[1]</sup> Metric tons of mass emissions is calculated assuming the density of effluent is 1. The mean constituent value and mean daily flow value over the year is used to compute the mass emissions, assuming that constant concentration over 365 days.

## B. Discharge Limits

DISCHARGE SPECIFICATIONS from NPDES Permit No. CA0109045/RWQCB Order No. 2006-067 effective on January 1<sup>st</sup>, 2007 with limits on pollutant discharges.

The discharge of effluent through the South Bay Ocean Outfall(E-001) shall maintain compliance with the following effluent limitations:

Effluent Limitations based on Secondary Treatment Standards						
Constituent	Units	6-month Median	30-day Average	7-Day Average	Daily Maximum	Instantaneous Maximum
Biochemical Oxygen Demand(BOD <sub>5</sub> )@20°C	mg/L		30	45		50
	lb/day		3,700	5,600		6,200
Total Suspended Solids	mg/L		30	45		50
	lb/day		3,700	5,600		6,200
pH	pH units	Within the limits of 6.0 - 9.0 at all times.				

Effluent Limitations based on 2005 California Ocean Plan						
Constituent	Units	6-month Median	30-day Average	7-Day Average	Daily Maximum	Instantaneous Maximum
Grease & Oil	mg/L		25	40		75
	lb/day		3,100	5,000		9,400
Settleable Solids	mL/L		1	2		3
Turbidity	NTU		75	100		230
Total Residual Chlorine(TRC)	mg/L	0.19			0.76	5.7
	lb/day	24			96	720
Copper	ug/L	97			960	2,700
	lb/day	12			120	330

Constituents that do not have reasonable potential or had inconclusive reasonable potential analysis results are referred to as performance goal constituents and are assigned the performance goals listed in the following table. Performance goal constituents shall also be monitored at E-001.

Performance Goals Based on 2005 California Ocean Plan				
Constituent	Units	6-month Median	Daily Maximum	Instantaneous Maximum
Arsenic	ug/L	480	2,800	7,400
	lb/day	60	350	920
Cadmium	ug/L	96	380	960
	lb/day	12	48	120
Chromium <sup>3</sup> (Hexavalent)	ug/L	190	760	1900
	lb/day	24	96	240
Lead	ug/L	190	760	1,900
	lb/day	24	96	240
Mercury	ug/L	38	15.0	3.8
	lb/day	4.8	1.9	0.48
Nickel	ug/L	480	1,900	4,800
	lb/day	60	240	600
Selenium	ug/L	1,400	5,700	14,000
	lb/day	180	720	1800
Silver	ug/L	52	250	650
	lb/day	6.5	32	82
Zinc	ug/L	1,100	6,900	18,000
	lb/day	140	860	2300
Cyanide	mg/L	0.096	0.38	0.96
	lb/day	12	48	120
Ammonia (expressed as Nitrogen)	mg/L	57	230	570
	lb/day	7200	29,000	72,000
Acute Toxicity	TUa		3.1 <sup>4</sup>	
Chronic Toxicity	TUc		96	
Phenolic Compounds(non-chlorinated)	ug/L	2,900	11,000	29,000
	lb/day	360	1400	3600
Chlorinated Phenolics	ug/L	96	380	960
	lb/day	12	48	120
Endosulfan	ng/L	860	1,700	2,600
	lb/day	0.11	0.21	0.32
Endrin	ng/L	190	380	570
	lb/day	0.02	0.05	0.07
HCH (hexachlorocyclohexanes)	ng/L	380	760	1,100
	lb/day	0.04	0.1	0.14
Radioactivity	Not to exceed limits specified in Title 17 California Code of Regulations Section 30253, Standards for Protection Against Radiation			

<sup>3</sup> Hexavalent Chromium limit met as Total Chromium.

<sup>4</sup> Permit shows  $2.9 \times 10^{-1}$  which reflects an apparent error in calculation as discussed with SDRWQCB staff. Correction to 3.1 TUa referenced by email of Friday, January 26, 2007 4:14 PM, From: Melissa Valdovinos [<mailto:mvaldovinos@waterboards.ca.gov>] To: Stebbins, Tim, [[Tstebbins@sandiego.gov](mailto:Tstebbins@sandiego.gov)]

Performance Goals Based on 2005 California Ocean Plan Continued		
Constituent	Monthly Average (30-Day)	
	ug/L	lbs/day
Acrolein	21,000	2600
Antimony	110,000	14,000
Bis(2-chloroethoxy) methane	420	53
Bis(2-chloroisopropyl) ether	110,000	14,000
Chlorobenzene	54,000	6800
Chromium (III) <sup>5</sup>	18,000,000	2,300,000
di-n-butyl phthalate	330,000	42,000
Dichlorobenzenes	490,000	61,000
Diethyl phthalate	3,100,000	390,000
Dimethyl phthalate	78,000,000	9,800,000
4,6-dinitro-2-methylphenol	21,000	2600
2,4-dinitrophenol	3800	480
Ethylbenzene	390,000	49,000
Fluoranthene	1,400	180
Hexachlorocyclopentadiene	5,500	690
Nitrobenzene	470	59
Thallium	190	24
Toluene	8,100,000	1,000,000
Tributyltin	0.13	0.020
1,1,1-trichloroethane	52,000,000	6,500,000
Acrylonitrile	9.6	1.2
Benzene	560	71
Benzidine	0.0066	82,000
Beryllium	3.1	0.39
Bis(2-chloroethyl)ether	4.3	0.54
Bis(2-ethylhexyl)phthalate	330	42
Carbon Tetrachloride	86	11
Chloroform	12,000	1500
1,4-dichlorobenzene	1,700	210
3,3-dichlorobenzidine	0.77	0.097
1,2-dichloroethane	2,700	330
1,1-dichloroethylene	86	11
Dichlorobormomethane	590	74
Dichloromethane	43,000	5400
1,3-dichloropropene	850	110
2,4-dinitrotoluene	250	31
1,2-diphenylhydrazine	15	1.9
Halomethanes	12,000	1500

<sup>5</sup> Chromium (III) limit is met by Total Chromium.

Performance Goals Based on 2005 California Ocean Plan Continued		
Constituent	Monthly Average (30-Day)	
	ug/L	lbs/day
Hexachlorobenzene	0.02	0.0025
Hexachlorobutadiene	1,300	170
Hexachloroethane	240	30
Isophorone	70,000	8700
N-nitrosodimethylamine	700	87
N-nitrosodi-N-propylamine	36	4.5
N-nitrosodiphenylamine	240	30
PAHs	0.84	0.11
1,1,2,2-tetrachloroethane	220	27
Tetrachloroethylene	190	24
Trichloroethylene	2,600	320
1,1,2-trichloroethane	900	110
2,4,6-trichlorophenol	28	3.5
Vinyl Chloride	3,400	430
	ng/L	lbs/day
Aldrin	2.1	0.00026
Chlordane	2,200,000	0.00027
DDT	16	0.0026
Dieldrin	3.8	0.00048
Heptachlor	48	.00060
Heptachlor Epoxide	1.9	0.00024
PCBs	1.8	0.00023
Toxaphene	200	0.0025
	pg/L	lbs/day
TCDD equivalents	0.37	0.00000047

### C. Influent and Effluent Data Summaries

The results of all analyses performed on the SBWRP influent and effluent are summarized in tables with monthly and annual averages (and in some cases annual totals) calculated. Data that has been reevaluated as discussed in Section 1.E, are explicitly indicated. All other tables and charts include all data.



SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL  
Biochemical Oxygen Demand Concentration  
(24-hour composite)

From 01-JAN-2009 To 31-DEC-2009

	Influent Flow	Daily Influent Value (mg/L)	Daily Influent Value (lbs/Day)	Effluent Flow	Daily Effluent Value (mg/L)	Daily Effluent Value (lbs/Day)	Percent Removal BOD (%)
JANUARY -2009	8.6	335	24028	4.9	5.6	229	98.3
FEBRUARY -2009	8.7	326	23654	5.4	5.4	243	98.3
MARCH -2009	8.6	354	25390	4.5	8.4	315	97.6
APRIL -2009	8.3	348	24089	3.0	8.4	210	97.6
MAY -2009	8.5	367	26017	1.3	7.7	83	97.9
JUNE -2009	8.3	347	24020	1.1	7.8	72	97.8
JULY -2009	8.3	358	24781	0.2	7.3	12	98.0
AUGUST -2009	8.2	365	24962	0.3	5.8	15	98.4
SEPTEMBER-2009	8.2	358	24483	0.2	6.1	10	98.3
OCTOBER -2009	8.2	345	23594	2.1	7.4	130	97.9
NOVEMBER -2009	8.0	377	25153	2.9	8.0	193	97.9
DECEMBER -2009	8.1	347	23441	5.8	12.4	600	96.4
Average	8.3	352	24468	2.6	7.5	176	97.9

Annual Mass Emissions are calculated from monthly averages of flow and BOD, whereas Monthly Report average mass emissions are calculated from average daily mass emissions.

ND=not detected  
NS=not sampled  
NA=not analyzed

SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL

Total Suspended Solids Concentration  
(24-hour composite)

From 01-JAN-2009 To 31-DEC-2009

	Daily Influent Flow (MGD)	Daily Influent TSS (mg/L)	Daily Influent VSS (mg/L)	Percent VSS (%)	Daily Influent Mass Emission (lbs/Day)
JANUARY -2009	8.6	336	298	88.7	24099
FEBRUARY -2009	8.7	299	260	87.0	21695
MARCH -2009	8.6	290	257	88.6	20800
APRIL -2009	8.3	298	261	87.6	20628
MAY -2009	8.5	303	266	87.8	21480
JUNE -2009	8.3	307	273	88.9	21251
JULY -2009	8.3	303	268	88.4	20974
AUGUST -2009	8.2	290	255	87.9	19833
SEPTEMBER-2009	8.2	289	253	87.5	19764
OCTOBER -2009	8.2	282	244	86.5	19285
NOVEMBER -2009	8.0	309	269	87.1	20616
DECEMBER -2009	8.1	296	255	86.1	19996
Average	8.3	300	263		20868

Total Suspended Solids Concentration  
(24-hour composite)

	Daily Effluent Flow (MGD)	Daily Effluent TSS (mg/L)	Daily Effluent VSS (mg/L)	Percent VSS (%)	Daily Effluent Mass Emission (lbs/Day)	Percent Removal TSS (%)	Percent Removal VSS (%)
JANUARY -2009	4.9	2.6	2.0	76.9	106	99.2	99.3
FEBRUARY -2009	5.4	3.1	2.5	80.6	140	99.0	99.0
MARCH -2009	4.5	5.3	4.6	86.8	199	98.2	98.2
APRIL -2009	3.0	7.2	6.3	87.5	180	97.6	97.6
MAY -2009	1.3	6.4	5.4	84.4	69	97.9	98.0
JUNE -2009	1.1	7.5	6.3	84.0	69	97.6	97.7
JULY -2009	0.2	6.4	5.0	78.1	11	97.9	98.1
AUGUST -2009	0.3	5.6	4.7	83.9	14	98.1	98.2
SEPTEMBER-2009	0.2	5.8	4.8	82.8	10	98.0	98.1
OCTOBER -2009	2.1	5.8	4.7	81.0	102	97.9	98.1
NOVEMBER -2009	2.9	5.7	4.8	84.2	138	98.2	98.2
DECEMBER -2009	5.8	7.0	6.0	85.7	339	97.6	97.6
Average	2.6	5.7	4.8		115	98.1	98.2

Annual Mass Emissions are calculated from monthly averages of flow and TSS, whereas Monthly Report average mass emissions are calculated from average daily mass emissions.

VSS = Volatile Suspended Solids  
TSS = Total Suspended Solids

nd=not detected; NS=not sampled; NA=not analyzed

\* The limit is 85% removal on daily running averages.

SOUTH BAY WATER RECLAMATION PLANT  
Effluent to Ocean Outfall

From 01-JAN-2009 To 31-DEC-2009

	Flow (mgd)	pH	Settleable Solids (ml/L)	Biochemical Oxygen Demand (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)	Total Dissolved Solids (mg/L)
Limit:	15						
JANUARY -2009	4.89	7.31	ND	5.56	2.61	1.99	947
FEBRUARY -2009	5.36	7.42	ND	5.37	3.07	2.45	1010
MARCH -2009	4.45	7.45	ND	8.43	5.25	4.60	1120
APRIL -2009	2.97	7.46	ND	8.43	7.23	6.30	994
MAY -2009	1.32	7.54	ND	7.65	6.36	5.36	1010
JUNE -2009	1.07	7.52	ND	7.77	7.46	6.29	1040
JULY -2009	0.25	7.64	ND	7.25	6.35	5.03	950
AUGUST -2009	0.31	7.57	ND	5.79	5.61	4.67	948
SEPTEMBER-2009	0.16	7.59	ND	6.12	5.75	4.82	935
OCTOBER -2009	2.09	7.56	ND	7.41	5.79	4.70	882
NOVEMBER -2009	2.94	7.65	ND	7.95	5.72	4.80	909
DECEMBER -2009	5.79	7.57	ND	12.4	7.04	6.01	933
Average	2.63	7.52	ND	7.51	5.69	4.75	973

	Oil & Grease (mg/L)	Outfall Temperature ( C )	Residual Chlorine (mg/L)	Turbidity (NTU)	Dissolved Oxygen (mg/L)
Limit:					
JANUARY -2009	4.4	21.4	0.08	1.75	5.69
FEBRUARY -2009	2.1	20.6	0.06	1.63	5.78
MARCH -2009	2.1	22.2	0.06	2.13	5.00
APRIL -2009	1.8	23.0	0.04	2.61	4.92
MAY -2009	1.9	23.5	0.05	2.21	5.02
JUNE -2009	2.5	24.8	0.04	2.79	3.72
JULY -2009	<1.2	26.1	0.05	2.43	4.26
AUGUST -2009	1.5	26.7	0.05	1.96	4.30
SEPTEMBER-2009	2.0	26.4	0.05	2.03	4.51
OCTOBER -2009	1.7	23.8	0.05	2.42	4.38
NOVEMBER -2009	3.6	23.9	0.05	2.77	4.36
DECEMBER -2009	3.4	22.0	0.06	4.77	4.21
Average	2.3	24.8	0.05	2.46	4.25

ND=not detected  
NS=not sampled  
NA=not analyzed

SOUTH BAY WATER RECLAMATION PLANT  
From 01-JAN-2009 To 31-DEC-2009

Influent to Plant

	Flow (mgd)	pH*	Total Dissolved Solids (mg/L)	Biochemical Oxygen Demand (mg/L)	Total Suspended Solids (mg/L)	Volatile Suspended Solids (mg/L)	Turbidity* (NTU)
Limit:							
JANUARY -2009	8.61		1000	335	336	298	
FEBRUARY -2009	8.68	7.46	1040	326	299	260	185
MARCH -2009	8.60		1110	354	290	257	
APRIL -2009	8.28		1050	348	298	261	
MAY -2009	8.48	7.69	1040	367	303	266	197
JUNE -2009	8.29		1030	347	307	273	
JULY -2009	8.33		988	358	303	268	
AUGUST -2009	8.24		976	365	290	255	132
SEPTEMBER-2009	8.18	7.82	979	358	289	253	
OCTOBER -2009	8.21		899	345	282	244	166
NOVEMBER -2009	8.03	7.56	952	377	309	269	
DECEMBER -2009	8.09		982	347	296	255	
Average	8.34	7.63	1004	352	300	263	

\* = Monitored Quarterly

ND=not detected  
NS=not sampled  
NA=not analyzed

SOUTH BAY WATER RECLAMATION PLANT  
ANNUAL SEWAGE  
Trace Metals

From: 01-JAN-2009 To: 31-DEC-2009

Analyte:	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic
MAX MDL Units:	47 UG/L	47 UG/L	2.9 UG/L	2.9 UG/L	.4 UG/L	.4 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:				110000		480*
=====						
JANUARY -2009	1220	193	ND	ND	0.90	0.78
FEBRUARY -2009	1180	181	ND	ND	0.56	0.54
MARCH -2009	885	173	ND	ND	0.65	0.45
APRIL -2009	878	116	ND	ND	1.09	0.89
MAY -2009	773	129	ND	ND	0.96	0.71
JUNE -2009	946	148	ND	ND	0.51	<0.40
JULY -2009	1210	142	ND	ND	0.65	0.48
AUGUST -2009	1110	117	ND	ND	1.04	0.85
SEPTEMBER-2009	977	114	ND	ND	1.08	0.69
OCTOBER -2009	1320	108	ND	ND	0.63	0.63
NOVEMBER -2009	1070	111	3.30	ND	0.90	0.48
DECEMBER -2009	1090	115	ND	ND	0.80	0.61
=====						
AVERAGE	1055	137	0.28	ND	0.81	0.59

Analyte:	Barium	Barium	Beryllium	Beryllium	Boron	Boron
MAX MDL Units:	.039 UG/L	.039 UG/L	.022 UG/L	.022 UG/L	7 UG/L	7 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:				3.1		
=====						
JANUARY -2009	104	63.3	NR	ND	322	316
FEBRUARY -2009	105	66.7	ND	ND	313	345
MARCH -2009	97	61.6	NR	ND	308	302
APRIL -2009	128	88.9	ND	ND	309	214
MAY -2009	101	78.1	ND	ND	321	357
JUNE -2009	103	62.6	ND	ND	314	308
JULY -2009	109	72.3	ND	ND	318	319
AUGUST -2009	101	62.1	ND	ND	321	355
SEPTEMBER-2009	104	68.2	ND	ND	307	302
OCTOBER -2009	99.7	65.8	ND	ND	309	318
NOVEMBER -2009	81.7	51.3	ND	ND	327	315
DECEMBER -2009	103	61.3	ND	ND	306	165
=====						
AVERAGE	103	66.9	ND	ND	315	301

Analyte:	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt
MAX MDL Units:	.53 UG/L	.53 UG/L	1.2 UG/L	1.2 UG/L	0.85 UG/L	0.85 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		96*		190*		
=====						
JANUARY -2009	ND	ND	3.0	ND	NR	ND
FEBRUARY -2009	ND	ND	4.2	1.4	ND	ND
MARCH -2009	ND	ND	3.7	ND	NR	ND
APRIL -2009	ND	ND	3.5	1.3	NR	ND
MAY -2009	ND	ND	2.7	1.6	ND	ND
JUNE -2009	1.1	1.0	4.5	ND	NR	ND
JULY -2009	ND	ND	3.3	ND	NR	ND
AUGUST -2009	ND	ND	2.8	<1.2	ND	ND
SEPTEMBER-2009	ND	ND	3.4	1.7	NR	ND
OCTOBER -2009	ND	ND	3.8	ND	ND	ND
NOVEMBER -2009	ND	ND	3.4	ND	NR	ND
DECEMBER -2009	ND	ND	3.4	ND	NR	ND
=====						
AVERAGE	0.1	0.1	3.5	0.5	ND	ND

\* = 6 Month Median performance goal. All others are monthly average performance goals.

ND= not detected, NA= not analyzed, NS= not sampled

SOUTH BAY WATER RECLAMATION PLANT  
ANNUAL SEWAGE  
Trace Metals

From: 01-JAN-2009 To: 31-DEC-2009

Analyte:	Copper	Copper	Iron	Iron	Lead	Lead
MAX MDL Units:	2 UG/L	2 UG/L	37 UG/L	37 UG/L	2 UG/L	2 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		97				19*
=====	=====	=====	=====	=====	=====	=====
JANUARY -2009	64	22	681	58	ND	2.3
FEBRUARY -2009	81	14	639	44	4.3	ND
MARCH -2009	74	9	486	45	ND	ND
APRIL -2009	85	16	570	138	3.1	4.7
MAY -2009	68	11	431	62	ND	ND
JUNE -2009	74	12	554	40	4.6	ND
JULY -2009	80	17	668	ND	3.3	ND
AUGUST -2009	77	24	593	98	ND	ND
SEPTEMBER-2009	68	7	540	ND	2.5	ND
OCTOBER -2009	67	9	530	47	ND	ND
NOVEMBER -2009	81	6	838	38	2.4	ND
DECEMBER -2009	81	13	513	81	ND	ND
=====	=====	=====	=====	=====	=====	=====
AVERAGE	75	13	587	54	1.7	0.6

Analyte:	Manganese	Manganese	Mercury	Mercury	Molybdenum	Molybdenum
MAX MDL Units:	.24 UG/L	.24 UG/L	.09 UG/L	.09 UG/L	.89 UG/L	.89 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:				38*		
=====	=====	=====	=====	=====	=====	=====
JANUARY -2009	58.5	20.7	0.24	ND	NR	4.5
FEBRUARY -2009	54.3	31.0	ND	ND	5.9	3.5
MARCH -2009	50.9	28.0	ND	ND	NR	3.0
APRIL -2009	56.7	48.2	0.22	ND	NR	3.5
MAY -2009	49.8	20.2	ND	ND	6.7	3.7
JUNE -2009	45.3	17.8	ND	ND	NR	4.9
JULY -2009	38.3	17.6	0.13	ND	NR	3.5
AUGUST -2009	32.9	16.7	0.17	ND	7.5	3.5
SEPTEMBER-2009	30.8	14.5	0.11	ND	NR	4.5
OCTOBER -2009	30.9	16.4	0.10	ND	7.4	3.4
NOVEMBER -2009	31.3	12.6	0.10	ND	NR	3.0
DECEMBER -2009	29.3	15.9	0.61	0.23	NR	4.0
=====	=====	=====	=====	=====	=====	=====
AVERAGE	42.4	21.6	0.14	0.02	6.9	3.8

\* = 6 Month Median performance goal. All others are monthly average performance goals.

ND= not detected  
NA= not analyzed  
NS= not sampled

SOUTH BAY WATER RECLAMATION PLANT  
ANNUAL SEWAGE  
Trace Metals

From: 01-JAN-2009 To: 31-DEC-2009

Analyte:	Nickel	Nickel	Selenium	Selenium	Silver	Silver
MAX MDL UNITS:	.53	.53	.28	.28	.4	.4
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		480*		1400*		52*
=====						
JANUARY -2009	6.66	9.00	2.04	0.84	1.2	ND
FEBRUARY -2009	6.40	3.58	1.77	0.57	0.4	ND
MARCH -2009	4.14	3.04	1.59	0.69	1.1	ND
APRIL -2009	4.82	4.28	2.33	1.53	0.7	ND
MAY -2009	4.34	3.74	2.13	0.74	0.9	ND
JUNE -2009	8.53	4.43	1.66	0.71	0.9	ND
JULY -2009	7.17	5.87	1.61	0.74	1.4	ND
AUGUST -2009	5.04	5.81	1.81	0.76	1.3	ND
SEPTEMBER-2009	5.89	5.14	1.97	0.63	1.3	0.5
OCTOBER -2009	4.83	3.66	1.54	0.60	0.9	ND
NOVEMBER -2009	7.66	2.78	1.42	0.39	2.2	0.4
DECEMBER -2009	3.81	2.96	2.01	0.85	2.3	ND
=====						
AVERAGE	5.77	4.52	1.82	0.75	1.2	0.1

Analyte:	Thallium	Thallium	Vanadium	Vanadium	Zinc	Zinc
MAX MDL Units:	3.9 UG/L	3.9 UG/L	.64 UG/L	.64 UG/L	2.5 UG/L	2.5 UG/L
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:						1100*
=====						
JANUARY -2009	ND	ND	NR	ND	158	39.8
FEBRUARY -2009	ND	ND	1.6	ND	185	45.3
MARCH -2009	ND	ND	NR	0.8	131	27.8
APRIL -2009	ND	ND	NR	0.8	152	46.6
MAY -2009	ND	ND	1.3	ND	143	38.8
JUNE -2009	ND	ND	NR	ND	135	32.5
JULY -2009	ND	ND	NR	ND	156	32.7
AUGUST -2009	ND	ND	1.2	<0.64	175	37.5
SEPTEMBER-2009	ND	ND	NR	1.1	150	31.1
OCTOBER -2009	ND	ND	1.9	0.9	153	32.1
NOVEMBER -2009	ND	ND	NR	1.0	157	31.8
DECEMBER -2009	ND	ND	NR	1.1	155	30.9
=====						
AVERAGE	ND	ND	1.5	0.5	154	35.6

\* = 6 Month Median performance goal. All others are monthly average performance goals.

ND= not detected  
NA= not analyzed  
NS= not sampled

SOUTH BAY WATER RECLAMATION PLANT 2009 Annual Report

Cations

From 01-JAN-2009 To 31-DEC-2009

MDL:	Calcium		Magnesium		Lithium	
	.04 Inf.	mg/L Eff.	.1 Inf.	mg/L Eff.	.002 Inf.	mg/L Eff.
JANUARY -2009	75.2	75.8	30.6	29.8	0.036	0.035
FEBRUARY -2009	71.8	73.4	31.7	31.9	0.028	0.028
MARCH -2009	74.7	77.9	33.4	32.8	0.031	0.033
APRIL -2009	86.4	85.1	31.7	30.9	0.052	0.049
MAY -2009	80.7	79.6	32.9	31.1	0.042	0.041
JUNE -2009	72.6	80.8	28.8	29.9	0.038	0.038
JULY -2009	71.8	75.4	26.3	26.2	0.042	0.042
AUGUST -2009	67.4	68.4	27.2	26.2	0.039	0.038
SEPTEMBER-2009	64.7	71.7	24.9	26.2	0.039	0.039
OCTOBER -2009	68.0	70.1	27.3	27.3	0.041	0.041
NOVEMBER -2009	65.2	66.8	31.1	30.2	0.029	0.028
DECEMBER -2009	74.1	74.3	29.1	28.0	0.050	0.049
Average:	72.7	74.9	29.6	29.2	0.039	0.038

MDL:	Sodium		Potassium	
	1 Inf.	mg/L Eff.	.3 Inf.	mg/L Eff.
JANUARY -2009	189	185	19.1	17.5
FEBRUARY -2009	174	182	17.9	17.1
MARCH -2009	193	191	20.6	18.5
APRIL -2009	181	179	21.1	18.2
MAY -2009	190	189	20.7	18.7
JUNE -2009	179	189	22.1	20.8
JULY -2009	172	181	21.6	18.6
AUGUST -2009	172	178	21.9	18.6
SEPTEMBER-2009	152	176	18.9	19.5
OCTOBER -2009	182	198	22.3	19.6
NOVEMBER -2009	185	194	21.5	20.8
DECEMBER -2009	180	191	22.1	20.6
Average:	179	186	20.8	19.0

ND=not detected  
 NS=not sampled  
 NA=not analyzed



SOUTH BAY WATER RECLAMATION PLANT  
ANNUAL SEWAGE

Anions

From: 01-JAN-2009 To: 31-DEC-2009

Analyte:	Bromide	Bromide	Chloride	Chloride	Fluoride	Fluoride
MDL:	.1	.1	7	7	.05	.05
Units:	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
Month	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT
=====	=====	=====	=====	=====	=====	=====
JANUARY -2009	NR	0.415	NR	223	NR	0.520
FEBRUARY -2009	0.360	0.430	239	246	0.540	0.620
MARCH -2009	NR	0.460	NR	264	NR	0.550
APRIL -2009	0.290	0.405	214	235	0.495	0.790
MAY -2009	0.349	0.450	220	235	0.493	0.720
JUNE -2009	0.258	0.355	203	217	0.619	0.520
JULY -2009	0.300	0.365	213	209	0.443	0.475
AUGUST -2009	0.205	ND	202	105	0.401	0.210
SEPTEMBER -2009	0.247	0.240	204	198	0.408	0.450
OCTOBER -2009	0.234	0.218	201	222	0.485	0.488
NOVEMBER -2009	0.314	0.336	224	240	0.640	0.550
DECEMBER -2009	0.258	0.307	213	217	0.527	0.609
=====	=====	=====	=====	=====	=====	=====
AVERAGE	0.282	0.332	213	218	0.505	0.542

Analyte:	Nitrate	Nitrate	Ortho Phosph	Ortho Phosphate	Sulfate	Sulfate
MDL:	.04	.04	.2	.2	9	9
Units:	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
Month	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT	INFLUENT	EFFLUENT
=====	=====	=====	=====	=====	=====	=====
JANUARY -2009	NR	24.4	NR	5.15	NR	202
FEBRUARY -2009	0.2	29.2	12.1	9.48	150	200
MARCH -2009	NR	25.1	NR	2.56	NR	202
APRIL -2009	3.3	32.6	11.4	5.64	199	267
MAY -2009	1.4	38.0	12.6	2.95	196	254
JUNE -2009	2.0	22.6	12.5	1.63	189	209
JULY -2009	3.7	29.4	12.2	1.80	181	221
AUGUST -2009	0.1	30.7	12.1	0.82	173	103
SEPTEMBER -2009	0.7	29.4	11.9	1.33	169	201
OCTOBER -2009	1.7	38.3	13.1	1.26	142	219
NOVEMBER -2009	2.7	30.6	12.9	3.36	180	190
DECEMBER -2009	2.6	24.9	12.3	3.63	199	227
=====	=====	=====	=====	=====	=====	=====
AVERAGE	1.8	29.6	12.3	3.30	178	208

ND= not detected  
NA= not analyzed  
NS= not sampled

SOUTH BAY WATER RECLAMATION PLANT  
ANNUAL SEWAGE

Ammonia-Nitrogen and Total Cyanides

From 01-JAN-2009 To 31-DEC-2009

	Ammonia-N .3 Influent	Ammonia-N .3 Effluent	Cyanides,Total .002 MG/L Influent	Cyanides,Total .002 MG/L Effluent
Limit:		570		0.096
JANUARY -2009	33.4	0.7	ND	ND
FEBRUARY -2009	34.5	ND	ND	0.003
MARCH -2009	29.0	ND	ND	ND
APRIL -2009	31.0	0.8	ND	ND
MAY -2009	28.2	ND	ND	ND
JUNE -2009	36.4	ND	ND	0.002
JULY -2009	33.0	ND	ND	ND
AUGUST -2009	34.4	ND	ND	ND
SEPTEMBER-2009	31.9	ND	ND	ND
OCTOBER -2009	35.2	ND	ND	ND
NOVEMBER -2009	28.2	ND	ND	ND
DECEMBER -2009	35.7	ND	ND	0.002
Average:	32.6	0.1	ND	0.001

ND= not detected  
NA= not analyzed  
NS= not sampled

SOUTH BAY WATER RECLAMATION PLANT  
Radioactivity  
Effluent to the Ocean

Analyzed by: TestAmerica Laboratories Richland

From 01-JAN-2009 To 31-DEC-2009

Source	Month	Gross Alpha Radiation	Gross Beta Radiation
Effluent	JANUARY -2009	0.0 ± 0.6	22.8 ± 4.0
Effluent	FEBRUARY -2009	2.2 ± 2.0	19.5 ± 4.0
Effluent	MARCH -2009	3.7 ± 2.3	17.5 ± 4.0
Effluent	APRIL -2009	2.6 ± 1.7	20.0 ± 4.0
Effluent	MAY -2009	1.3 ± 2.0	19.2 ± 4.4
Effluent	JUNE -2009	1.5 ± 1.9	22.4 ± 4.2
Effluent	JULY -2009	2.4 ± 1.7	19.2 ± 4.1
Effluent	AUGUST -2009	1.4 ± 1.6	18.4 ± 3.7
Effluent	SEPTEMBER-2009	2.2 ± 2.0	21.4 ± 4.1
Effluent	OCTOBER -2009	1.2 ± 1.8	21.6 ± 4.3
Effluent	NOVEMBER -2009	1.0 ± 1.2	22.5 ± 4.4
Effluent	DECEMBER -2009	-0.6 ± 1.5	24.7 ± 6.2
AVERAGE		1.6 ± 1.7	20.8 ± 4.3

ND= not detected  
NA= not analyzed  
NS= not sampled

Units in picocuries/liter (pCi/L)

SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL - Chlorinated Pesticide Analysis

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	Avg
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
Aldrin	7	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	7	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p-DDD	3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p-DDE	4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p-DDT	8	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o,p-DDD	4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o,p-DDE	5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o,p-DDT	3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	8	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	6	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis Nonachlor	3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta Endosulfan	2	NG/L	ND	ND	ND	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
Endosulfan Sulfate	6	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	2	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	9	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	10	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	10	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	330	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1016	4000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1221	4000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1232	360	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1242	4000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1248	2000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1254	2000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1260	2000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1262	930	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	7	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hexachlorocyclohexanes	7	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DDT and derivatives	8	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chlordane + related cmpds.	6	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Polychlorinated biphenyls	4000	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Endosulfans	6	NG/L	0	0	0	8	0	0	0	0	0	0	0	0	0	1
Heptachlors	8	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chlorinated Hydrocarbons	4000	NG/L	0	0	0	8	0	0	0	0	0	0	0	0	0	1

ND= not detected  
NA= not analyzed  
NS= not sampled

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL - Chlorinated Pesticide Analysis

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	INF	INF	INF	INF	INF
			FEB	MAY	AUG	OCT	Avg
Aldrin	7	NG/L	ND	ND	ND	ND	ND
Dieldrin	3	NG/L	ND	ND	ND	ND	ND
BHC, Alpha isomer	7	NG/L	ND	ND	ND	ND	ND
BHC, Beta isomer	3	NG/L	ND	ND	ND	ND	ND
BHC, Gamma isomer	5	NG/L	ND	ND	ND	ND	ND
BHC, Delta isomer	3	NG/L	ND	ND	ND	ND	ND
p,p-DDD	3	NG/L	ND	ND	ND	ND	ND
p,p-DDE	4	NG/L	ND	ND	5	ND	1
p,p-DDT	8	NG/L	ND	ND	ND	ND	ND
o,p-DDD	4	NG/L	ND	ND	ND	ND	ND
o,p-DDE	5	NG/L	ND	ND	ND	ND	ND
o,p-DDT	3	NG/L	ND	ND	ND	ND	ND
Heptachlor	8	NG/L	ND	ND	ND	ND	ND
Heptachlor epoxide	4	NG/L	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	3	NG/L	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	4	NG/L	ND	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA	NA
Oxychlordane	6	NG/L	ND	ND	ND	ND	ND
Trans Nonachlor	5	NG/L	ND	ND	ND	ND	ND
Cis Nonachlor	3	NG/L	ND	ND	ND	ND	ND
Alpha Endosulfan	4	NG/L	ND	ND	ND	ND	ND
Beta Endosulfan	2	NG/L	ND	ND	ND	ND	ND
Endosulfan Sulfate	6	NG/L	ND	ND	ND	ND	ND
Endrin	2	NG/L	ND	ND	ND	ND	ND
Endrin aldehyde	9	NG/L	ND	ND	ND	ND	ND
Mirex	10	NG/L	ND	ND	ND	ND	ND
Methoxychlor	10	NG/L	ND	ND	ND	ND	ND
Toxaphene	330	NG/L	ND	ND	ND	ND	ND
PCB 1016	4000	NG/L	ND	ND	ND	ND	ND
PCB 1221	4000	NG/L	ND	ND	ND	ND	ND
PCB 1232	360	NG/L	ND	ND	ND	ND	ND
PCB 1242	4000	NG/L	ND	ND	ND	ND	ND
PCB 1248	2000	NG/L	ND	ND	ND	ND	ND
PCB 1254	2000	NG/L	ND	ND	ND	ND	ND
PCB 1260	2000	NG/L	ND	ND	ND	ND	ND
PCB 1262	930	NG/L	ND	ND	ND	ND	ND
=====							
Aldrin + Dieldrin	7	NG/L	0	0	0	0	0
Hexachlorocyclohexanes	7	NG/L	0	0	0	0	0
DDT and derivatives	8	NG/L	0	0	5	0	1
Chlordane + related cmpds.	6	NG/L	0	0	0	0	0
Polychlorinated biphenyls	4000	NG/L	0	0	0	0	0
Endosulfans	6	NG/L	0	0	0	0	0
=====							
Heptachlors	8	NG/L	0	0	0	0	0
=====							
Chlorinated Hydrocarbons	4000	NG/L	0	0	5	0	1

ND= not detected  
NA= not analyzed  
NS= not sampled

Standards for alpha and gamma chlordene are no longer available in the U.S. for the analysis of these compounds.

SOUTH BAY WATER RECLAMATION PLANT  
Organophosphorus Pesticides EPA Method 614/622 (with additions)

INFLUENT & EFFLUENT

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL Units	Effluent	Effluent	Influent	Influent
		05-MAY-2009 P468787	06-OCT-2009 P490588	05-MAY-2009 P468782	06-OCT-2009 P490583
Demeton O	.15 UG/L	ND	ND	ND	ND
Demeton S	.08 UG/L	ND	ND	ND	ND
Diazinon	.03 UG/L	ND	ND	ND	ND
Guthion	.15 UG/L	ND	ND	ND	ND
Malathion	.03 UG/L	ND	ND	ND	ND
Parathion	.03 UG/L	ND	ND	ND	ND
Dichlorvos	.05 UG/L	ND	ND	ND	0.1
Dibrom	.2 UG/L	ND	ND	ND	ND
Ethoprop	.04 UG/L	ND	ND	ND	ND
Phorate	.04 UG/L	ND	ND	ND	ND
Sulfotepp	.04 UG/L	ND	ND	ND	ND
Disulfoton	.02 UG/L	ND	ND	ND	ND
Dimethoate	.04 UG/L	ND	ND	ND	ND
Ronnel	.03 UG/L	ND	ND	ND	ND
Trichloronate	.04 UG/L	ND	ND	ND	ND
Merphos	.09 UG/L	ND	ND	ND	ND
Dichlofenthion	.03 UG/L	ND	ND	ND	ND
Tokuthion	.06 UG/L	ND	ND	ND	ND
Stirophos	.03 UG/L	ND	ND	ND	ND
Bolstar	.07 UG/L	ND	ND	ND	ND
Fensulfothion	.07 UG/L	ND	ND	ND	ND
EPN	.09 UG/L	ND	ND	ND	ND
Coumaphos	.15 UG/L	ND	ND	ND	ND
Mevinphos, e isomer	.05 UG/L	ND	ND	ND	ND
Mevinphos, z isomer	.3 UG/L	ND	ND	ND	ND
Chlorpyrifos	.03 UG/L	ND	ND	ND	ND
Thiophosphorus Pesticides	.15 UG/L	0.0	0.0	0.0	0.0
Demeton -O, -S	.15 UG/L	0.0	0.0	0.0	0.0
Total Organophosphorus Pesticides	.3 UG/L	0.0	0.0	0.0	0.1

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT  
ANNUAL SEWAGE - Tributyl Tin Analysis

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	EFF	EFF	EFF	EFF	Average
			FEB	MAY	AUG	OCT	
Dibutyltin	7	UG/L	ND	ND	ND	ND	ND
Monobutyltin	16	UG/L	ND	ND	ND	ND	ND
Tributyltin	2	UG/L	ND	ND	ND	ND	ND

Analyte	MDL	Units	INF	INF	INF	INF	Average
			FEB	MAY	AUG	OCT	
Dibutyltin	7	UG/L	ND	ND	ND	ND	ND
Monobutyltin	16	UG/L	ND	ND	ND	ND	ND
Tributyltin	2	UG/L	ND	ND	ND	ND	ND

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL - Acid Extractables

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	EFF	Average
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
2-chlorophenol	1.32	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-dichlorophenol	1.01	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-trichlorophenol	1.65	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-nitrophenol	1.55	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-dimethylphenol	2.01	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-dinitrophenol	2.16	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-nitrophenol	1.14	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Additional analytes determined;

2-methylphenol	2.15	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-methylphenol(3-MP is unresolved)	2.11	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-trichlorophenol	1.66	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Analyte	MDL	Units	INF	INF	INF	INF	Average
			FEB	MAY	AUG	OCT	
2-chlorophenol	1.32	UG/L	ND	ND	ND	ND	ND
2,4-dichlorophenol	1.01	UG/L	ND	ND	ND	ND	ND
4-chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND	ND
2,4,6-trichlorophenol	1.65	UG/L	ND	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND	ND
Phenol	1.76	UG/L	35.0	32.6	40.5	38.0	36.5
2-nitrophenol	1.55	UG/L	ND	ND	ND	ND	ND
2,4-dimethylphenol	2.01	UG/L	ND	ND	ND	ND	ND
2,4-dinitrophenol	2.16	UG/L	ND	ND	ND	ND	ND
4-nitrophenol	1.14	UG/L	ND	ND	ND	ND	ND
2-methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	35.0	32.6	40.5	38.0	36.5
Total Phenols	2.16	UG/L	35.0	32.6	40.5	38.0	36.5

Additional analytes determined;

2-methylphenol	2.15	UG/L	ND	ND	ND	ND	ND
3-methylphenol(4-MP is unresolved)		UG/L	NA	NA	NA	NA	NA
4-methylphenol(3-MP is unresolved)	2.11	UG/L	124	108	109	110	112
2,4,5-trichlorophenol	1.66	UG/L	ND	ND	ND	ND	ND

ND=not detected  
NS=not sampled  
NA=not analyzed



SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL Priority Pollutants Base/Neutrals

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	EFF	EFF	EFF	EFF	EFF
			FEB	MAY	AUG	OCT	Average
			Avg	Avg	Avg	Avg	
bis(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND	ND
bis(2-chloroethoxy)methane	1.01	UG/L	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND	ND
2,6-dinitrotoluene	1.53	UG/L	ND	ND	ND	ND	ND
Acenaphthene	1.8	UG/L	ND	ND	ND	ND	ND
2,4-dinitrotoluene	1.36	UG/L	ND	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND	ND
4-chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND	ND
Diethyl phthalate	3.05	UG/L	ND	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND	ND
4-bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND	ND
Benzo[A]anthracene	1.1	UG/L	ND	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	ND	ND	ND	ND	ND
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND	ND
3,3-dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND	ND
Benzo[K]fluoranthene	1.49	UG/L	ND	ND	ND	ND	ND
3,4-benzo(B)fluoranthene	1.35	UG/L	ND	ND	ND	ND	ND
Benzo[A]pyrene	1.25	UG/L	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND	ND
Dibenzo(A,H)anthracene	1.01	UG/L	ND	ND	ND	ND	ND
Benzo[G,H,I]perylene	1.09	UG/L	ND	ND	ND	ND	ND
1,2-diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	0.0	0.0	0.0	0.0	0.0
1-methylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
2-methylnaphthalene	2.14	UG/L	ND	ND	ND	ND	ND
2,6-dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND	ND
2,3,5-trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
1-methylphenanthrene	1.46	UG/L	ND	ND	ND	ND	ND
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND	ND

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL Priority Pollutants Base/Neutrals

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	INF	INF	INF	INF	INF
			FEB	MAY	AUG	OCT	Average
			Avg	Avg	Avg	Avg	
bis(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND	ND	ND	ND	ND
bis(2-chloroethoxy)methane	1.01	UG/L	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND	ND
2,6-dinitrotoluene	1.53	UG/L	ND	ND	ND	ND	ND
Acenaphthene	1.8	UG/L	ND	ND	ND	ND	ND
2,4-dinitrotoluene	1.36	UG/L	ND	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND	ND
4-chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND	ND
Diethyl phthalate	3.05	UG/L	12.0	12.1	13.3	9.8	11.8
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND	ND
4-bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND	ND	ND	ND	ND
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND	ND
Benzo[A]anthracene	1.1	UG/L	ND	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	18.1	17.6	15.2	9.0	15.0
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND	ND
3,3-dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND	ND
Benzo[K]fluoranthene	1.49	UG/L	ND	ND	ND	ND	ND
3,4-benzo(B)fluoranthene	1.35	UG/L	ND	ND	ND	ND	ND
Benzo[A]pyrene	1.25	UG/L	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND	ND
Dibenzo(A,H)anthracene	1.01	UG/L	ND	ND	ND	ND	ND
Benzo[G,H,I]perylene	1.09	UG/L	ND	ND	ND	ND	ND
1,2-diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	30.1	29.7	28.5	18.8	26.8
1-methylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
2-methylnaphthalene	2.14	UG/L	ND	ND	ND	ND	ND
2,6-dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND	ND
2,3,5-trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND	ND
1-methylphenanthrene	1.46	UG/L	ND	ND	ND	ND	ND
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND	ND

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL Priority Pollutants Purgeables

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	EFF	EFF	EFF	EFF	EFF
			FEB	MAY	AUG	OCT	Average
Dichlorodifluoromethane	.66	UG/L	ND	ND	ND	ND	ND
Chloromethane	.5	UG/L	ND	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND	ND
Acrolein	1.3	UG/L	ND	ND	ND	ND	ND
1,1-dichloroethane	.4	UG/L	ND	ND	ND	ND	ND
Methylene chloride	.3	UG/L	0.67*	0.5	0.4	0.8*	0.5
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND	ND
1,1-dichloroethene	.4	UG/L	ND	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND	ND
Chloroform	.2	UG/L	1.4	0.8	0.6	0.9	0.9
1,1,1-trichloroethane	.4	UG/L	ND	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND	ND
1,2-dichloroethane	.5	UG/L	ND	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND	ND
1,2-dichloropropane	.3	UG/L	ND	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	0.6	ND	ND	ND	0.2
2-chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.3	UG/L	ND	ND	ND	ND	ND
Toluene	.4	UG/L	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND	ND
1,1,2-trichloroethane	.5	UG/L	ND	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	ND	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND	ND
Ethylbenzene	.3	UG/L	ND	ND	ND	ND	ND
Bromoform	.5	UG/L	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	.5	UG/L	ND	ND	ND	ND	ND
1,3-dichlorobenzene	.5	UG/L	ND	ND	ND	ND	ND
1,4-dichlorobenzene	.4	UG/L	ND	0.5	1.4	ND	0.5
1,2-dichlorobenzene	.4	UG/L	ND	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0	0.0
Total Chloromethanes	.5	UG/L	1.4	1.3	1.0	0.9	1.2

Additional analytes determined

Analyte	MDL	Units	EFF FEB	EFF MAY	EFF AUG	EFF OCT	EFF Average
Purgeable Compounds	1.3	UG/L	2.0	1.8	2.4	0.9	1.8
Methyl Iodide	.6	UG/L	ND	ND	ND	ND	ND
Carbon disulfide	.6	UG/L	ND	ND	ND	ND	ND
Acetone	4.5	UG/L	ND	ND	ND	ND	ND
Allyl chloride	.6	UG/L	ND	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	ND	ND	ND	ND
Chloroprene	.4	UG/L	ND	ND	ND	ND	ND
1,2-dibromoethane	.3	UG/L	ND	ND	ND	ND	ND
2-butanone	6.3	UG/L	ND	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND	ND
2-nitropropane	12	UG/L	ND	ND	ND	ND	ND
4-methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND	ND
meta,para xylenes	.6	UG/L	ND	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND	ND
Isopropylbenzene	.3	UG/L	ND	ND	ND	ND	ND
Styrene	.3	UG/L	ND	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND

ND=not detected

\* = Batch did not meet QC criteria, blank contamination, the blank value for this batch was above MDL. Data is not included in averages.

SOUTH BAY WATER RECLAMATION PLANT  
SEWAGE ANNUAL Priority Pollutants Purgeables

From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	INF FEB	INF MAY	INF AUG	INF OCT	INF Average
Dichlorodifluoromethane	.66	UG/L	ND	ND	ND	ND	ND
Chloromethane	.5	UG/L	ND	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND	ND
Acrolein	1.3	UG/L	ND	ND	ND	ND	ND
1,1-dichloroethane	.4	UG/L	ND	ND	ND	ND	ND
Methylene chloride	.3	UG/L	ND*	1.3	1.7	1.4*	1.5
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND	ND
1,1-dichloroethene	.4	UG/L	ND	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND	ND
Chloroform	.2	UG/L	3.7	3.0	2.3	1.7	2.7
1,1,1-trichloroethane	.4	UG/L	ND	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND	ND
1,2-dichloroethane	.5	UG/L	ND	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND	ND
1,2-dichloropropane	.3	UG/L	ND	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	0.8	0.7	ND	ND	0.4
2-chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.3	UG/L	ND	ND	ND	ND	ND
Toluene	.4	UG/L	0.6	12.1	0.7	0.6	3.5
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND	ND
1,1,2-trichloroethane	.5	UG/L	ND	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	0.9	0.8	ND	ND	0.4
Chlorobenzene	.4	UG/L	ND	ND	ND	ND	ND
Ethylbenzene	.3	UG/L	ND	ND	ND	ND	ND
Bromoform	.5	UG/L	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	.5	UG/L	ND	ND	ND	ND	ND
1,3-dichlorobenzene	.5	UG/L	ND	ND	ND	ND	ND
1,4-dichlorobenzene	.4	UG/L	1.1	1.5	1.2	0.8	1.2
1,2-dichlorobenzene	.4	UG/L	ND	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0	0.0
Total Chloromethanes	.5	UG/L	3.7	4.3	4.0	1.7	3.4

Additional analytes determined

Purgeable Compounds	1.3	UG/L	7.1	19.4	5.9	3.1	8.9
Methyl Iodide	.6	UG/L	ND	ND	ND	ND	ND
Carbon disulfide	.6	UG/L	2.0	1.3	5.6	2.1	2.8
Acetone	4.5	UG/L	279	200	292	176	237
Allyl chloride	.6	UG/L	ND	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	ND	ND	ND	ND
Chloroprene	.4	UG/L	ND	ND	ND	ND	ND
1,2-dibromoethane	.3	UG/L	ND	ND	ND	ND	ND
2-butanone	6.3	UG/L	ND	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND	ND
2-nitropropane	12	UG/L	ND	ND	ND	ND	ND
4-methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND	ND
meta,para xylenes	.6	UG/L	ND	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND	ND
Isopropylbenzene	.3	UG/L	ND	ND	ND	ND	ND
Styrene	.3	UG/L	ND	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND	ND
1,2,4-trichlorobenzene	1.52	UG/L	ND	ND	ND	ND	ND

ND=not detected

\* = Batch did not meet QC criteria, blank contamination, the blank value for this batch was above MDL. Data is not included in averages.

SOUTH BAY WATER RECLAMATION PLANT  
Annual Sewage Dioxin and Furan Analysis  
From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				JAN	FEB	MAR	APR
				P454813	P458506	P463351	P467234
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				MAY	JUN	JUL	AUG
				P468782	P473440	P477633	P481319
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				SEP	OCT	NOV	DEC
				P485365	P490583	P494473	P498358
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Above are permit required CDD/CDF isomers. ND= not detected

SOUTH BAY WATER RECLAMATION PLANT  
Annual Sewage Dioxin and Furan Analysis  
From 01-JAN-2009 To 31-DEC-2009

Effluent Limit (TCDD): 0.37 pg/L (30-day Average)

Analyte	MDL	Units	Equiv	EFF	EFF	EFF	EFF
				JAN	FEB	MAR	APR
				P454817	P458511	P463355	P467238
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	EFF	EFF	EFF	EFF
				MAY	JUN	JUL	AUG
				P468787	P473444	P477637	P481324
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	EFF	EFF	EFF	EFF
				SEP	OCT	NOV	DEC
				P485369	P490588	P494477	P498362
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Above are permit required CDD/CDF isomers. ND= not detected

SOUTH BAY WATER RECLAMATION PLANT  
Annual Sewage Dioxin and Furan Analysis  
From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				TCCD	TCCD	TCCD	TCCD
				JAN	FEB	MAR	APR
				P454813	P458506	P463351	P467234
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				TCCD	TCCD	TCCD	TCCD
				MAY	JUN	JUL	AUG
				P468782	P473440	P477633	P481319
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				TCCD	TCCD	TCCD	TCCD
				SEP	OCT	NOV	DEC
				P485365	P490583	P494473	P498358
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Above are permit required CDD/CDF isomers. ND= not detected

SOUTH BAY WATER RECLAMATION PLANT  
Annual Sewage Dioxin and Furan Analysis  
From 01-JAN-2009 To 31-DEC-2009

Analyte	MDL	Units	Equiv	EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
				JAN	FEB	MAR	APR
				P454817	P458511	P463355	P467238
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
				MAY	JUN	JUL	AUG
				P468787	P477637	P481324	
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Analyte	MDL	Units	Equiv	EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
				SEP	OCT	NOV	DEC
				P485369	P490588	P494477	P498362
2,3,7,8-tetra CDD	125	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	123	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	113	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	98	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	111	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	137	PG/L	0.010	ND	ND	ND	ND
octa CDD	247	PG/L	0.001	ND	ND	ND	ND
2,3,7,8-tetra CDF	115	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	140	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	118	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	147	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	107	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	152	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	148	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	90	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	166	PG/L	0.010	ND	ND	ND	ND
octa CDF	222	PG/L	0.001	ND	ND	ND	ND

Above are permit required CDD/CDF isomers. ND= not detected

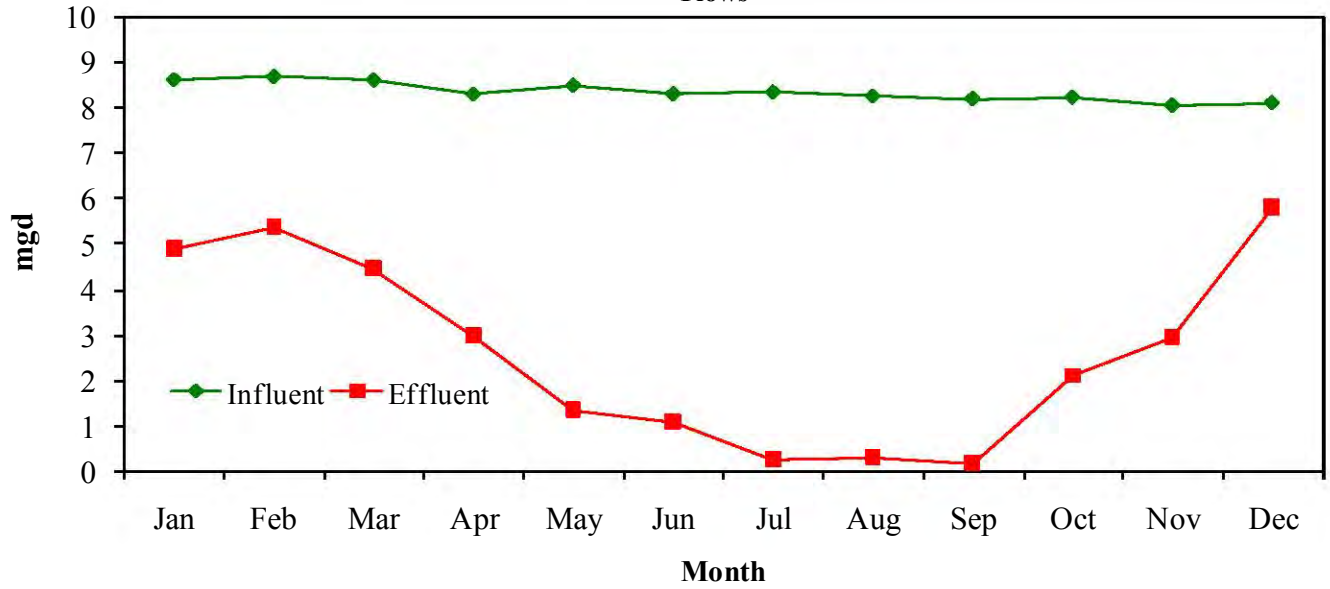


#### D. Influent and Effluent Graphs

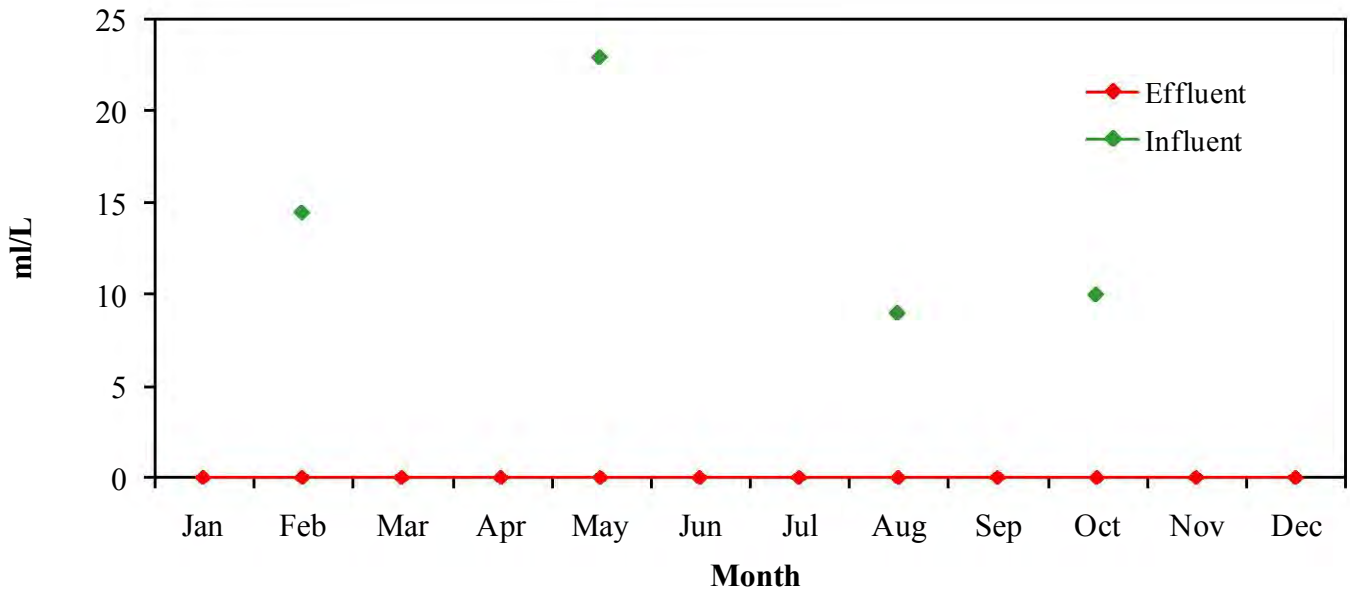
Graphs of monthly averages for permit parameters with measurable concentration averages.

Where possible, the influent and effluent values of a given parameter have been included on the same graph so that removals and other relationships are readily apparent. Please note that many of the graphs are on expanded scales. That is, they normally don't go to zero concentrations but show, in magnified scale, that range of concentrations where variation takes place. This makes differences and some trends obvious that might normally not be noticed. However, it also provides the temptation to interpret minor changes or trends as being of more significance than they are. Frequent reference to the scales and the actual differences in concentrations is therefore necessary.

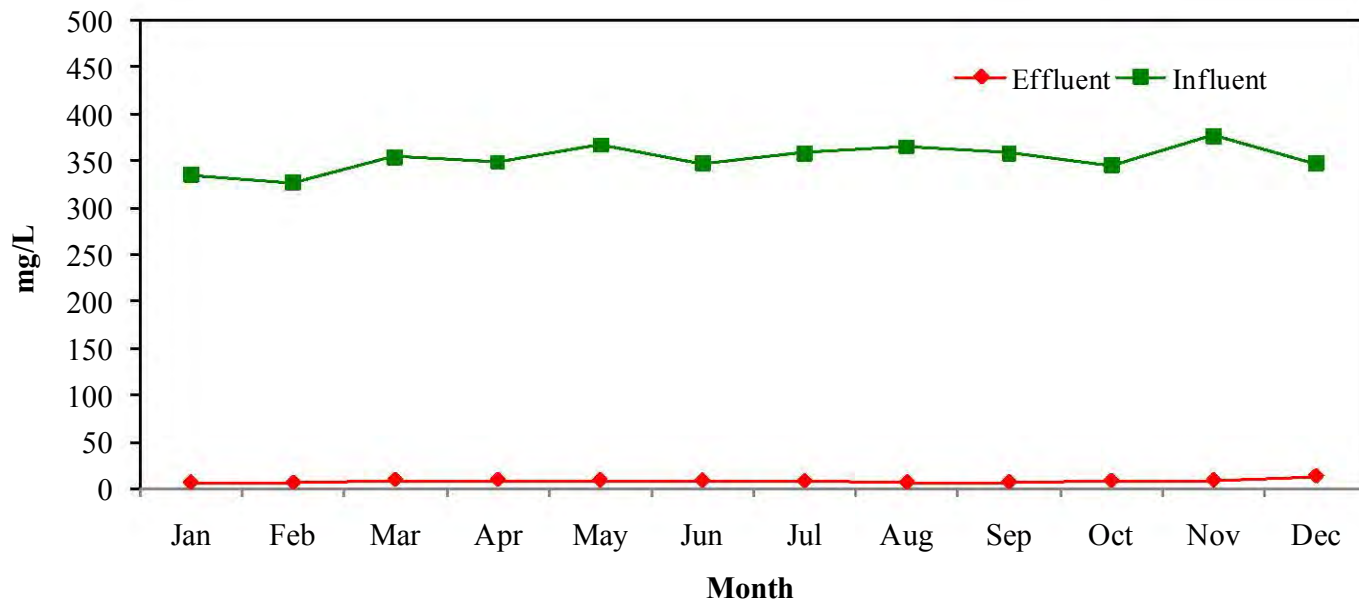
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Flows**



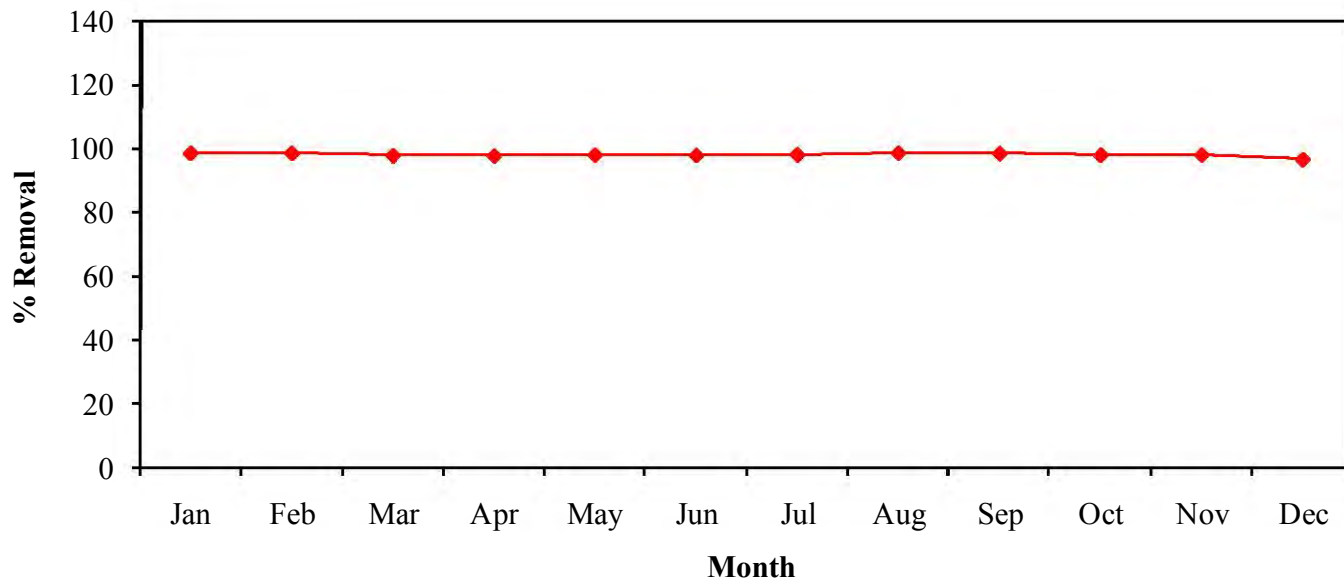
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Settleable Solids**



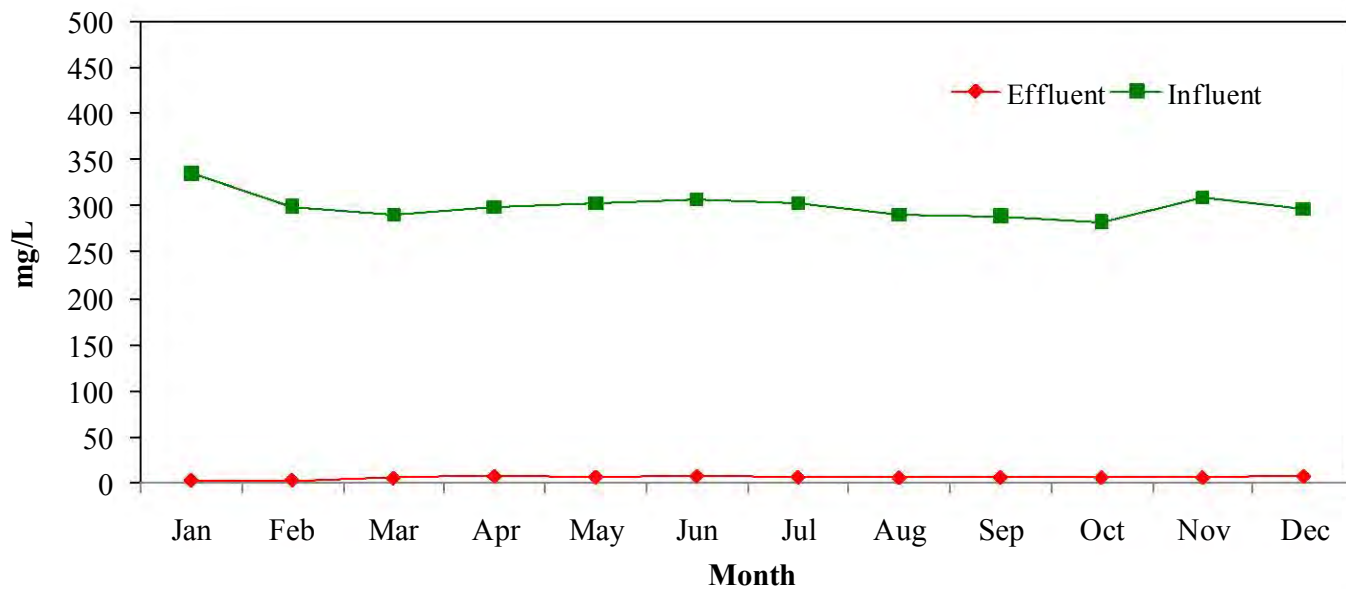
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
BOD**



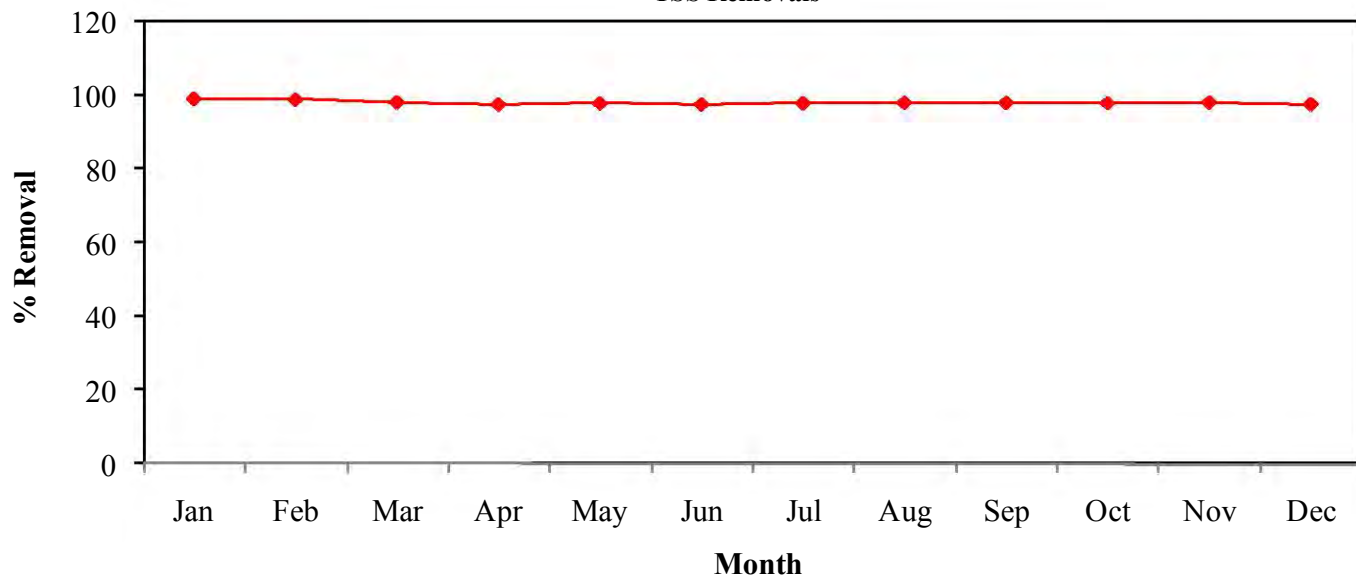
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
BOD Removals**



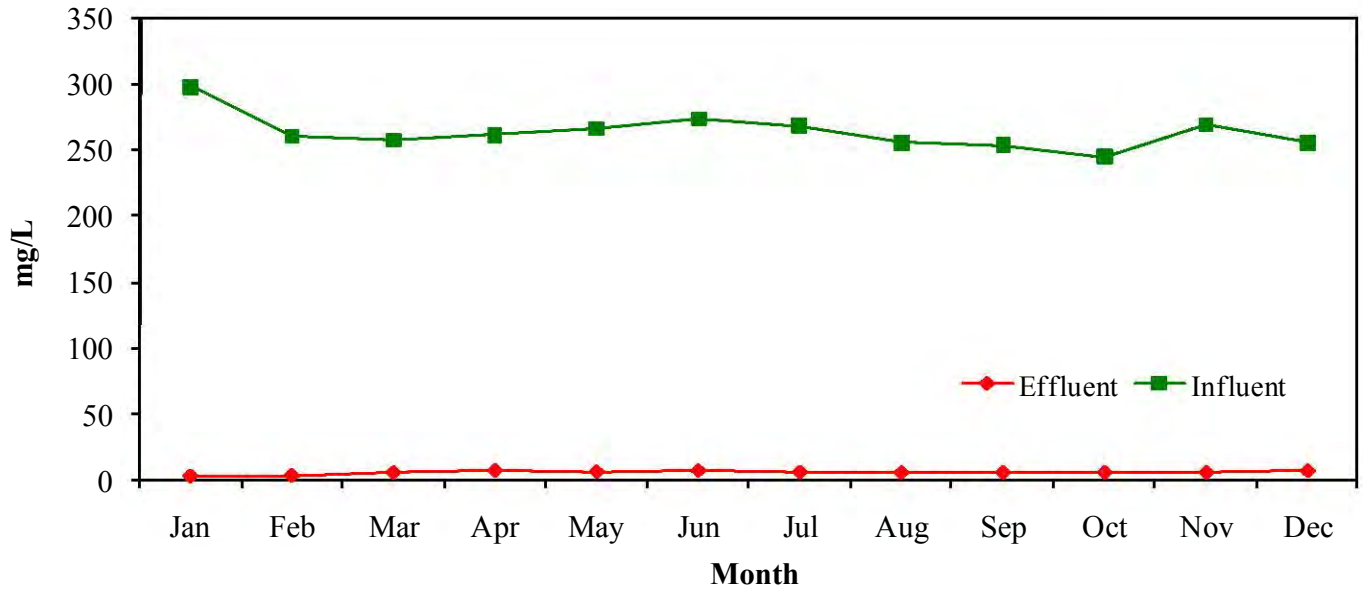
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
TSS**



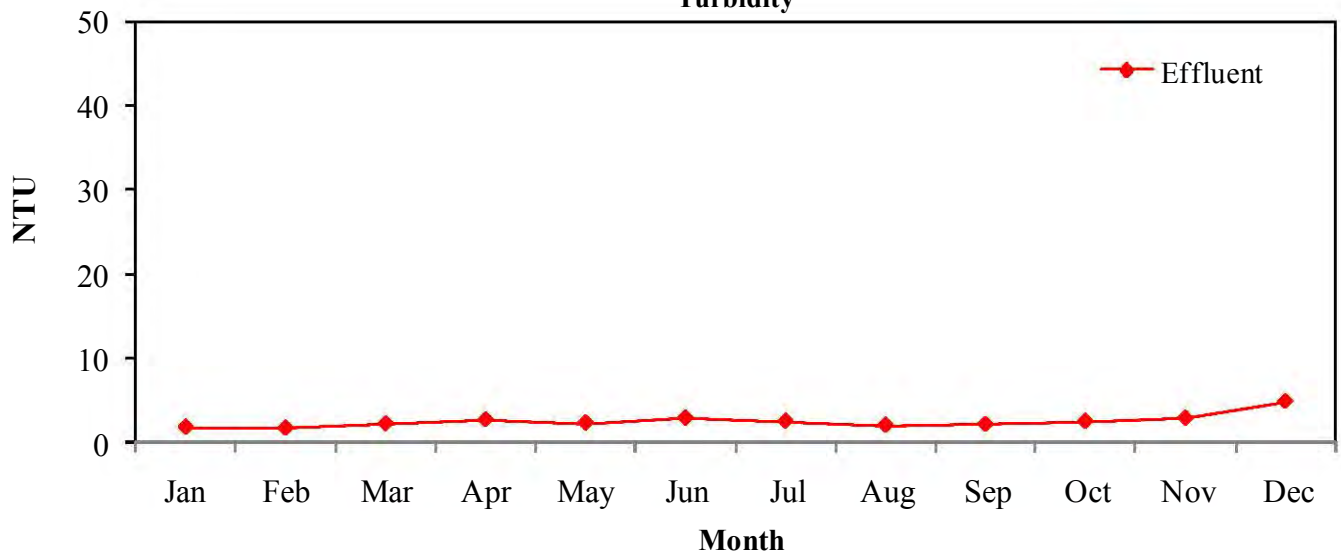
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
TSS Removals**



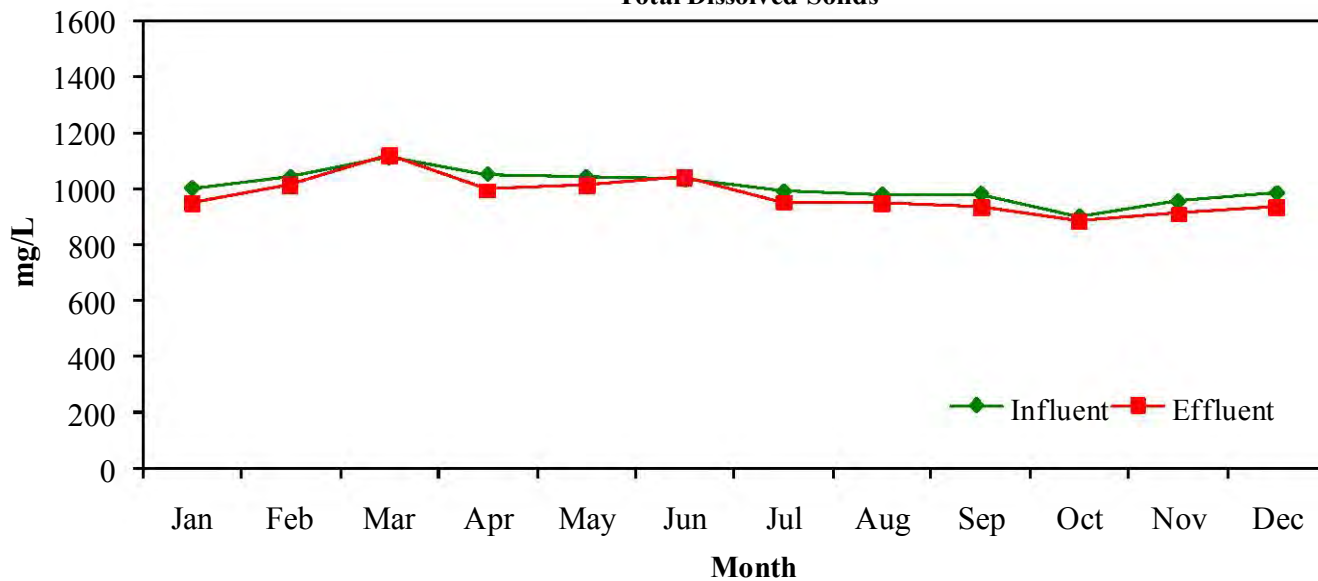
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
VSS**



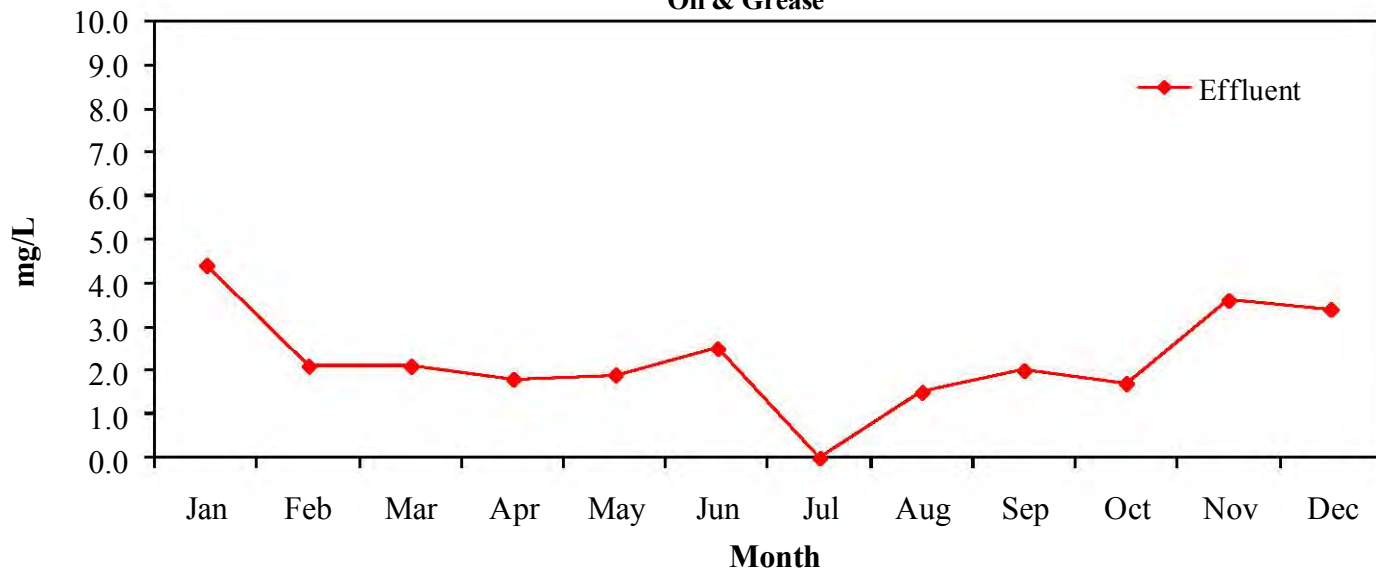
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Turbidity**



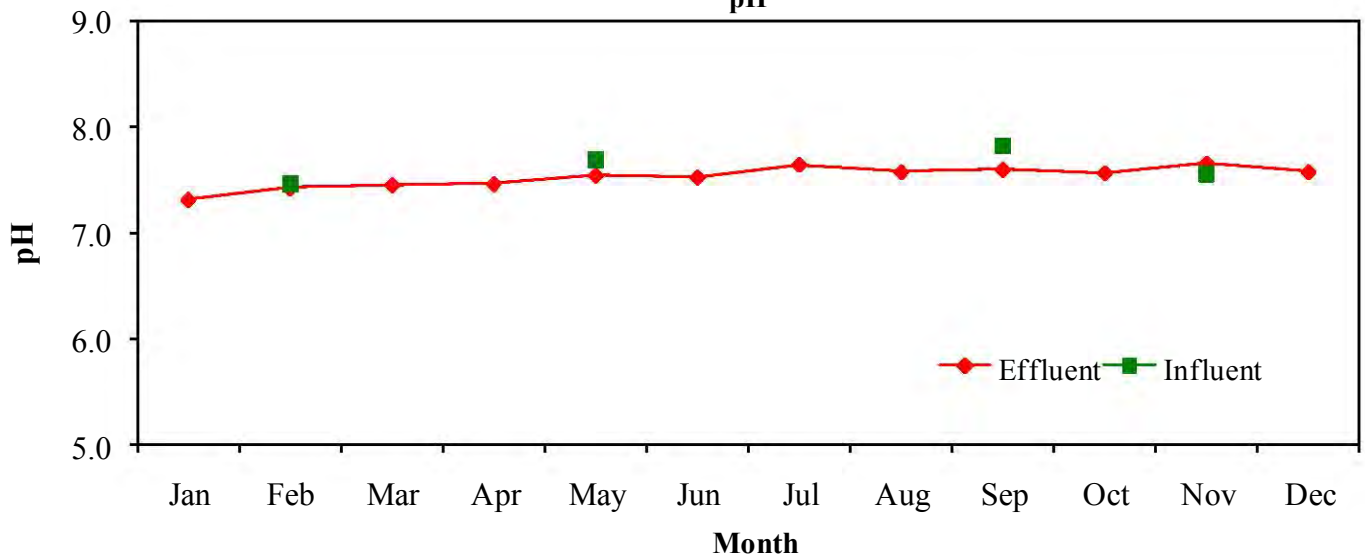
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Total Dissolved Solids**



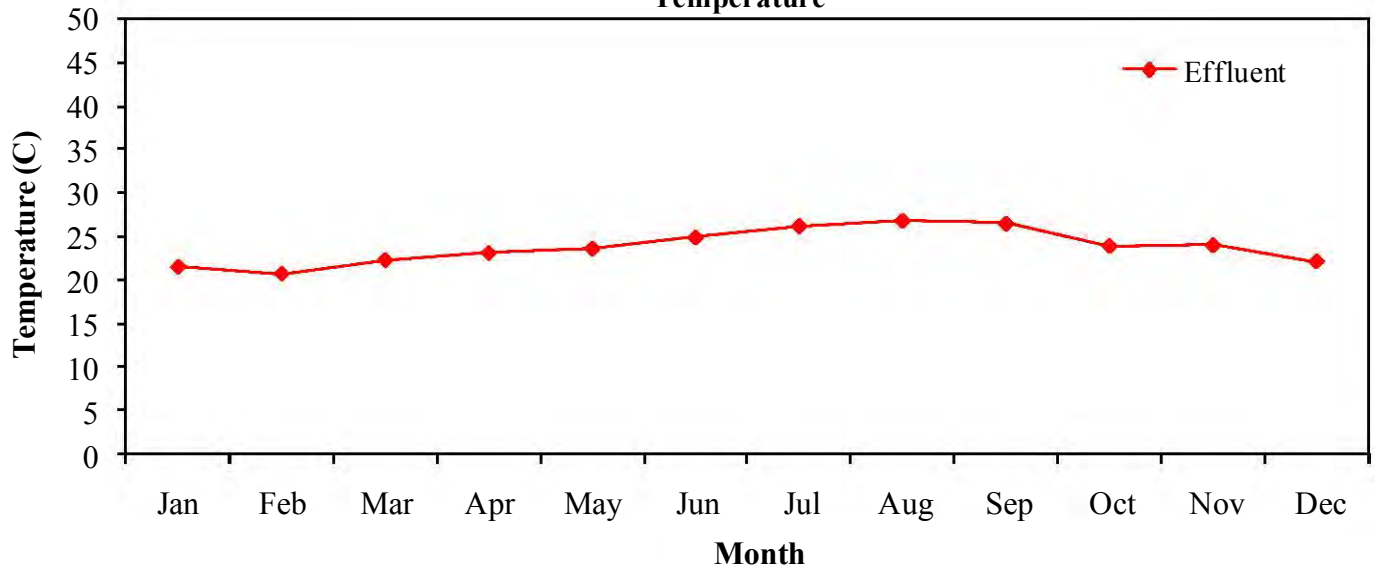
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Oil & Grease**



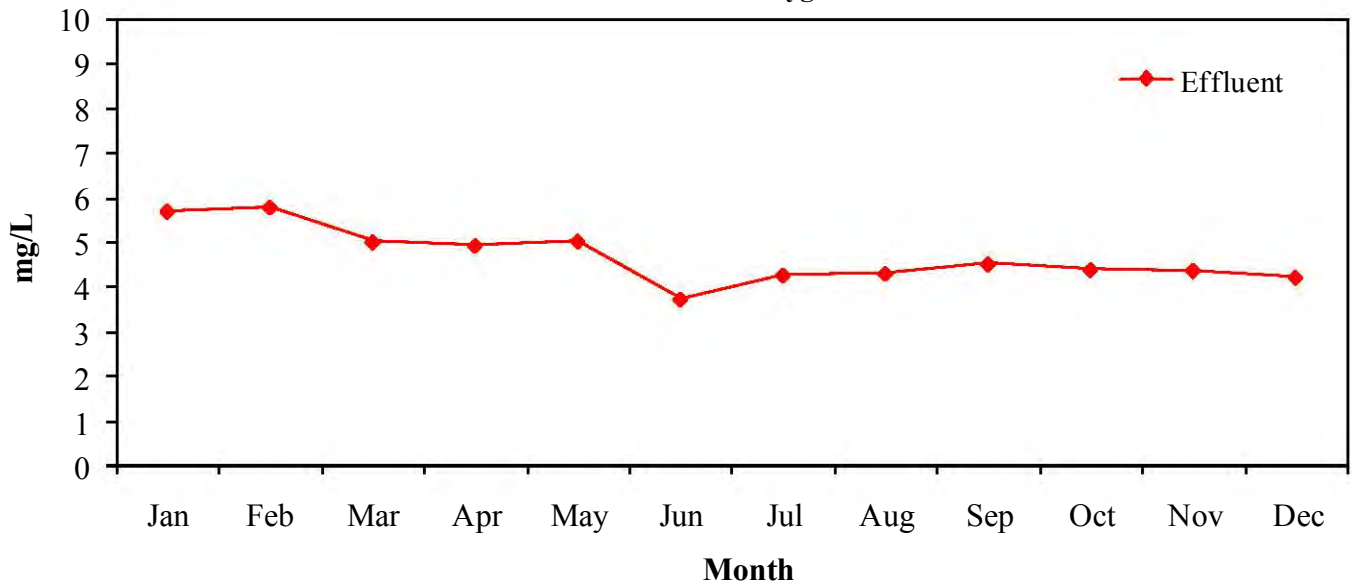
2009 South Bay Water Reclamation Plant  
Monthly Averages  
pH



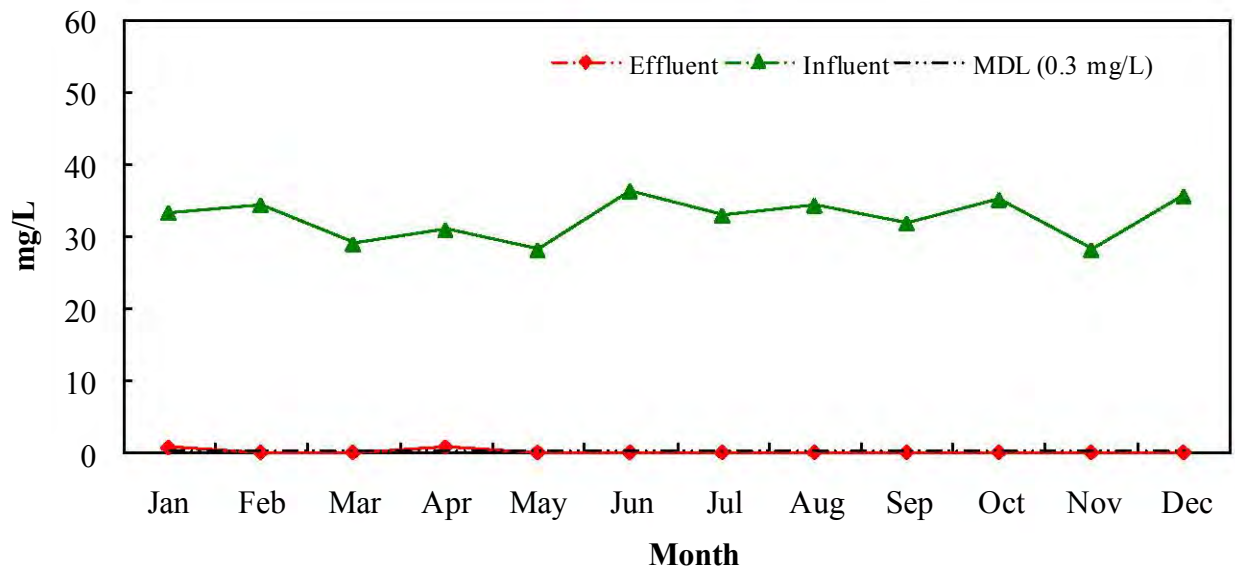
2009 South Bay Water Reclamation Plant  
Monthly Averages  
Temperature



**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Dissolved Oxygen**

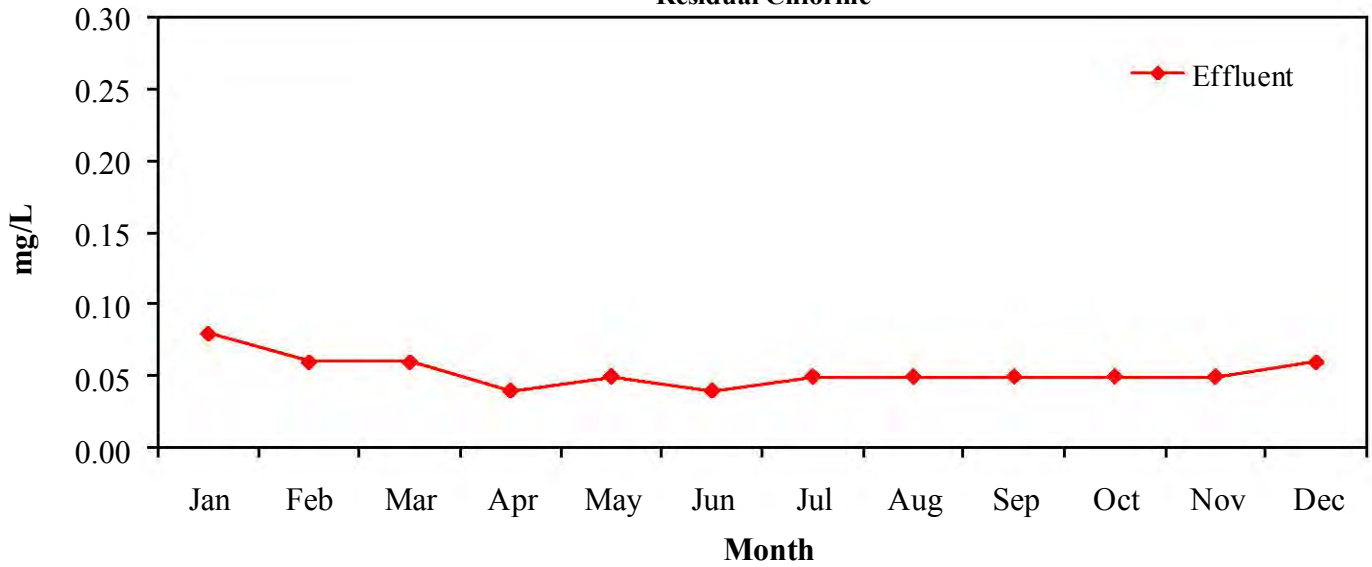


**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Ammonia-N**

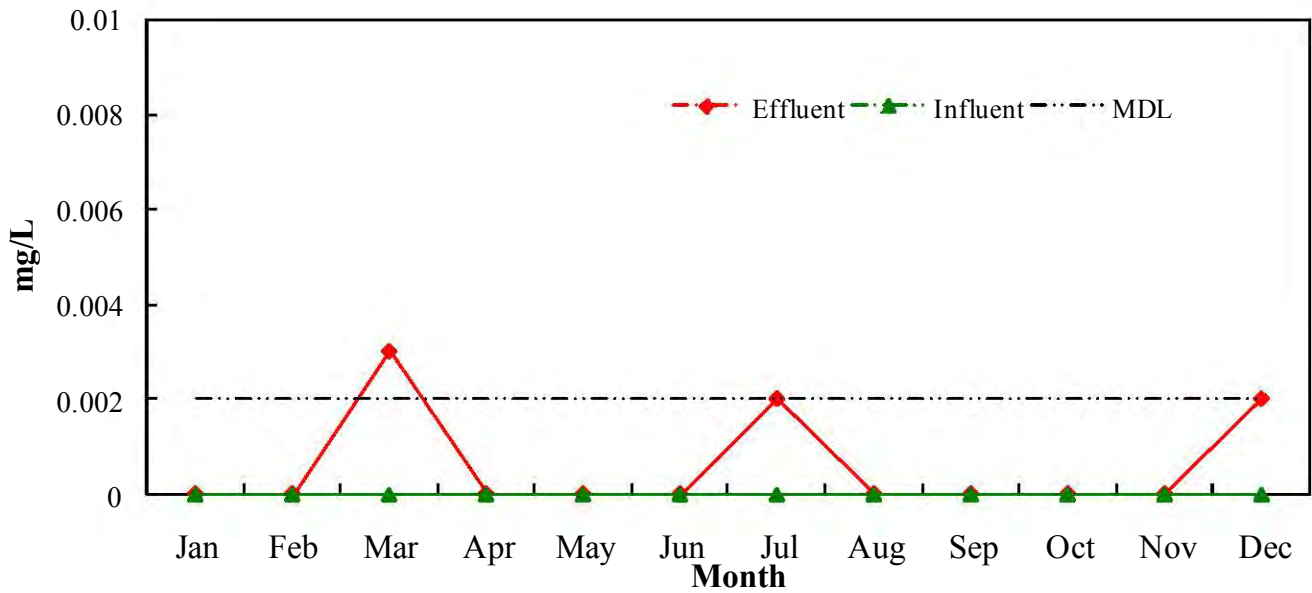




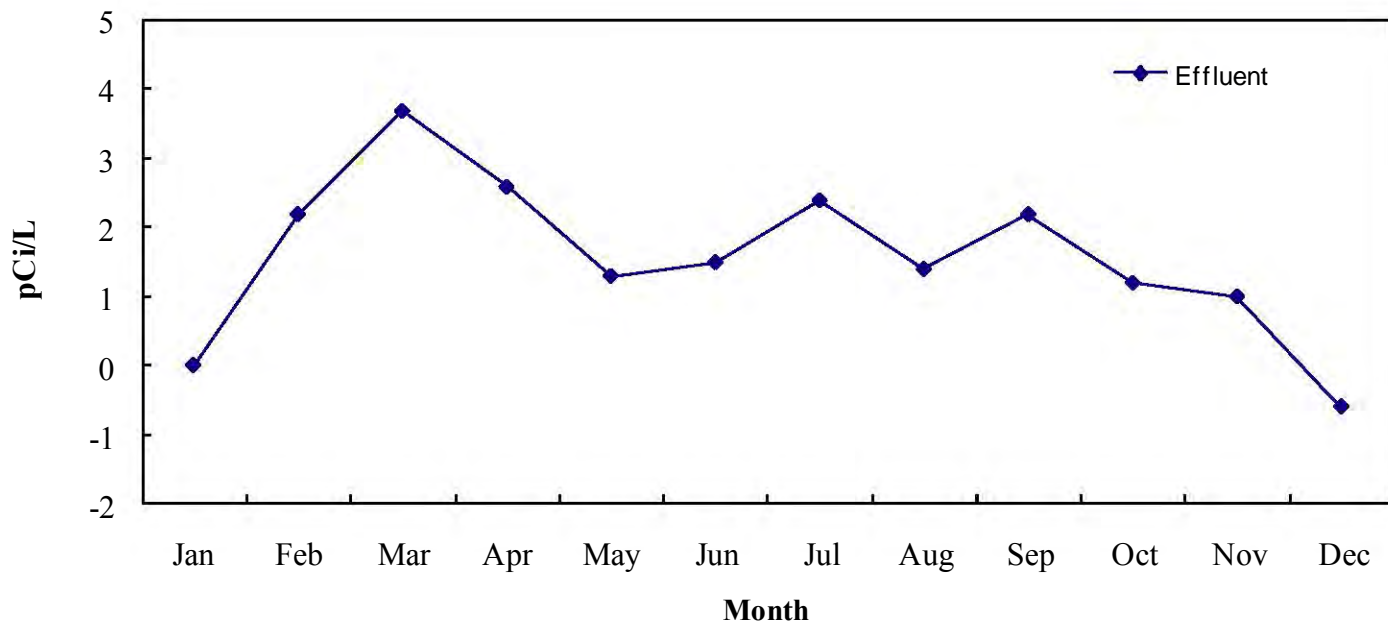
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Residual Chlorine**



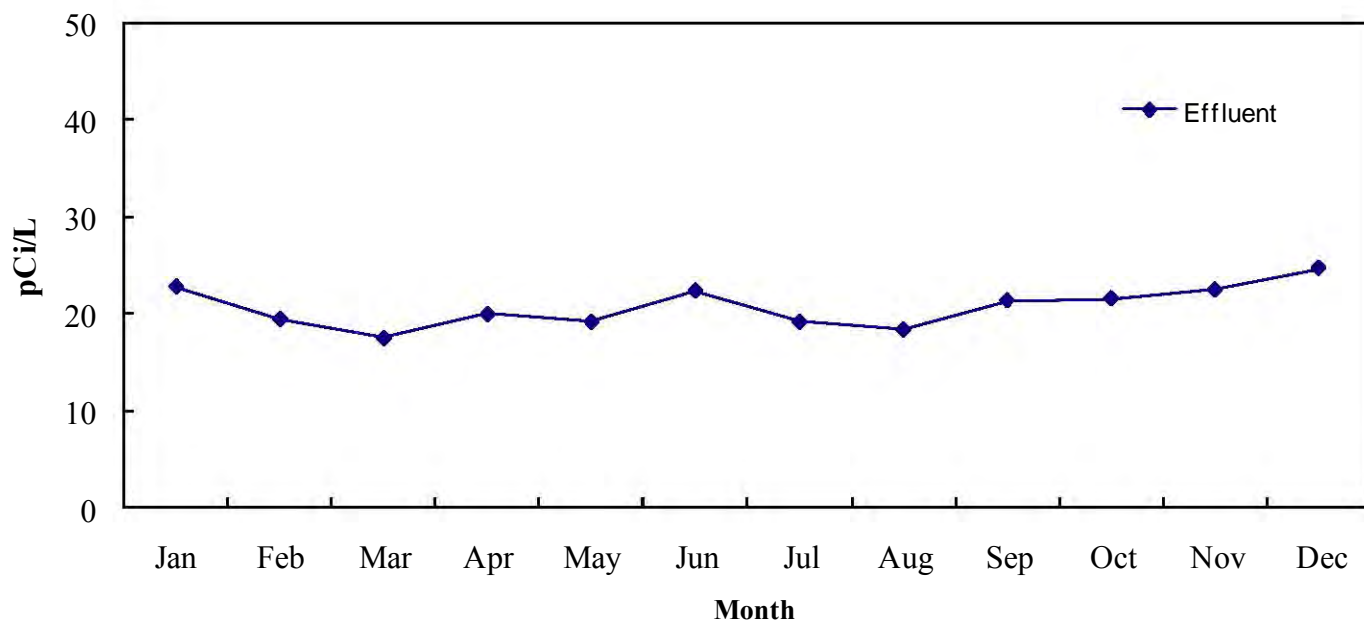
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Total Cyanides**



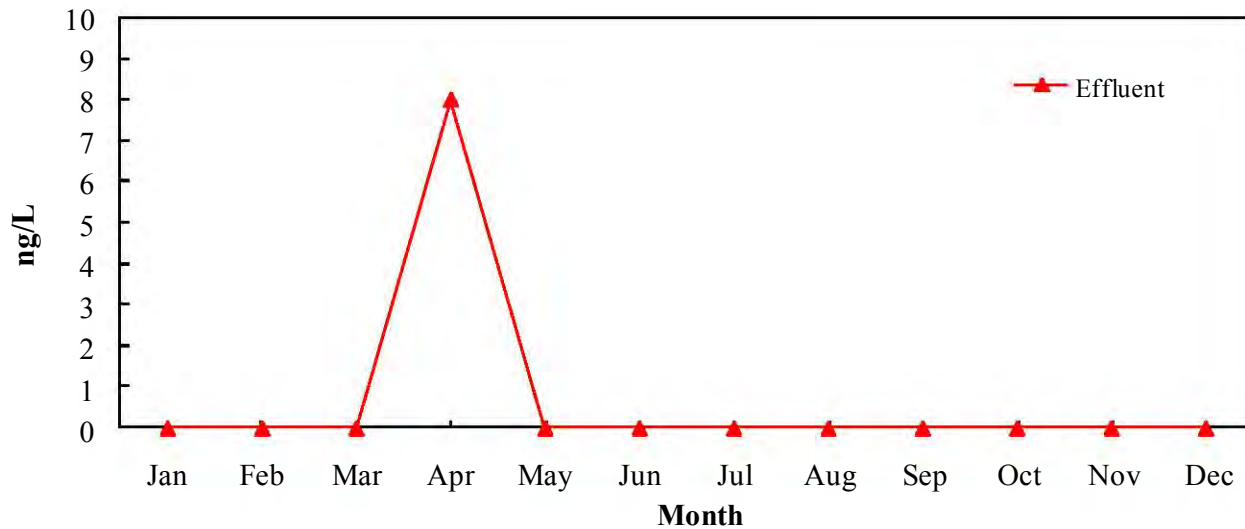
2009 South Bay Water Reclamation Plant  
Monthly Averages  
Alpha Radiation



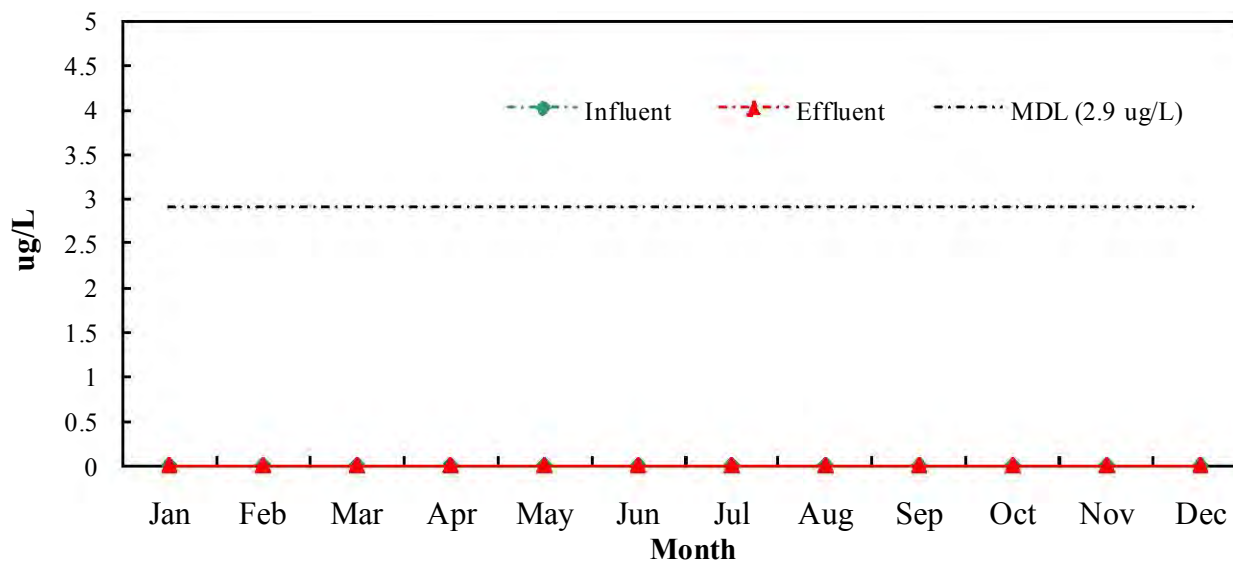
2009 South Bay Water Reclamation Plant  
Monthly Averages  
Beta Radiation



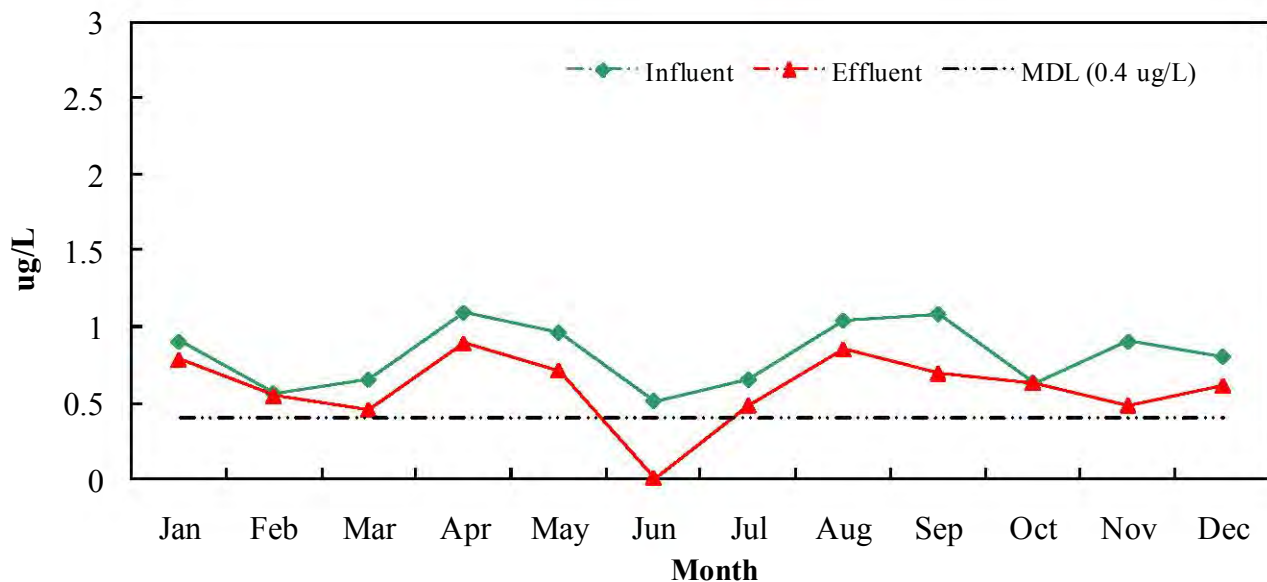
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Total Chlorinated Hydrocarbons**



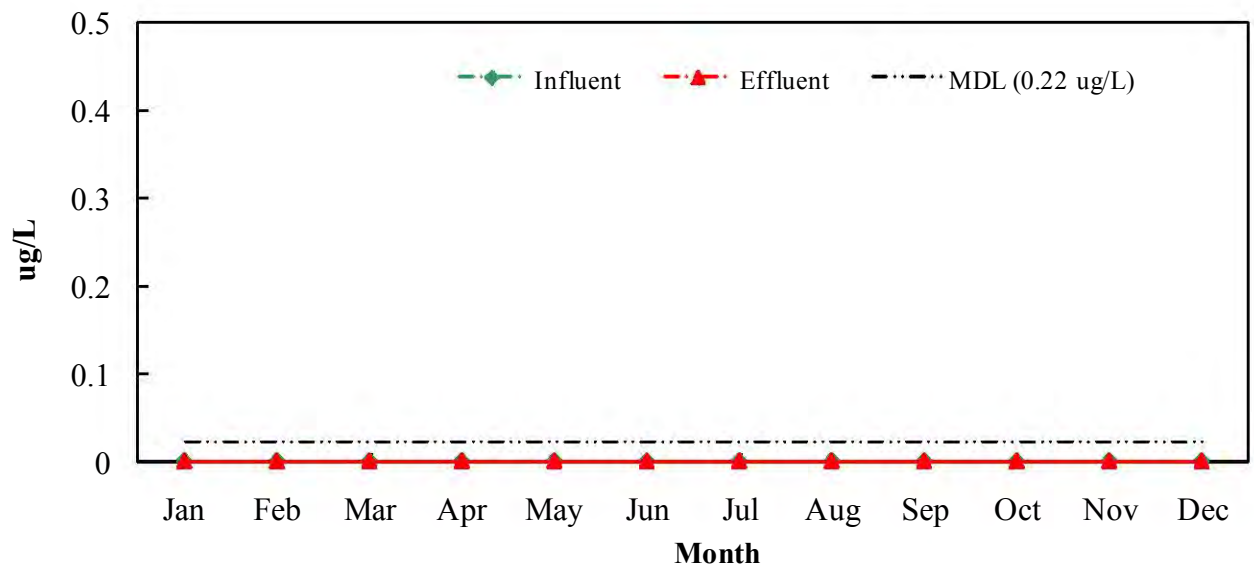
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Antimony**



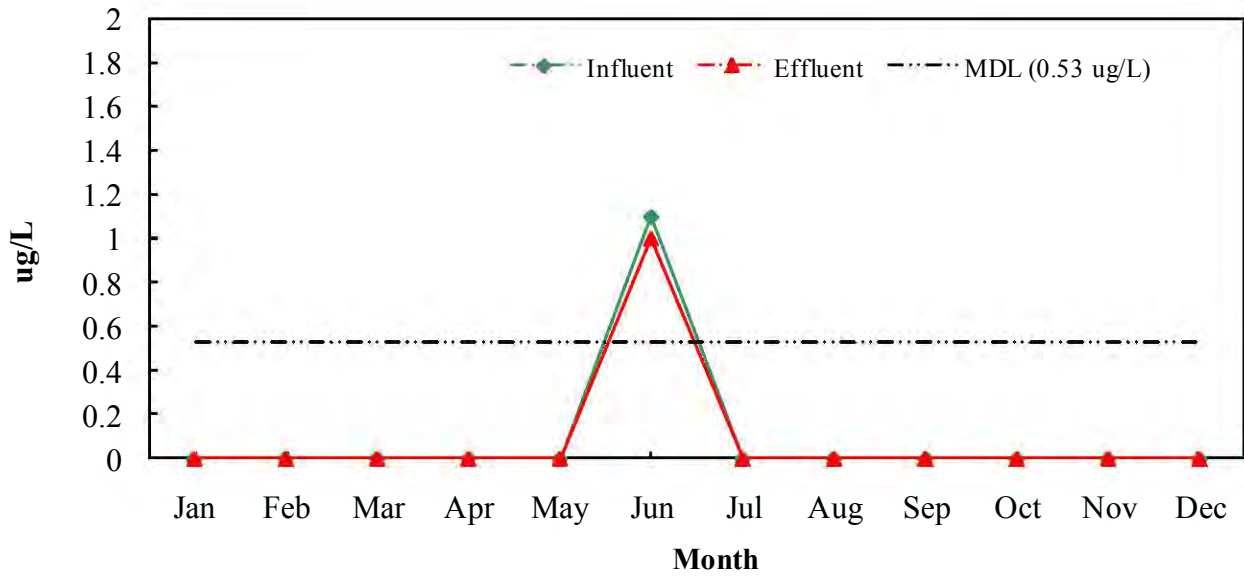
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Arsenic**



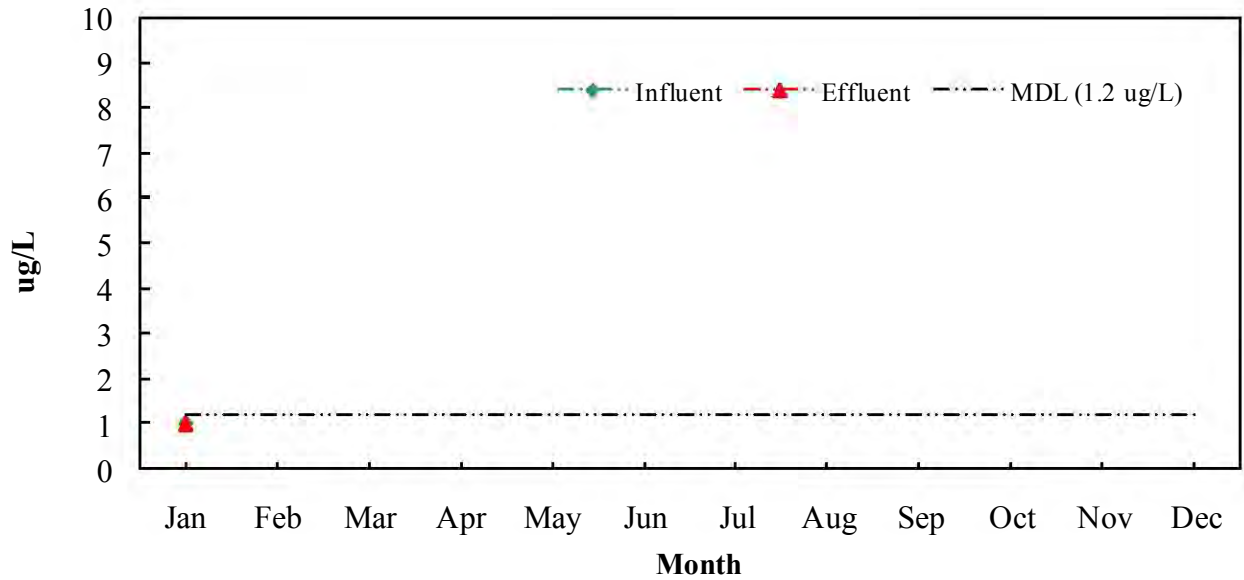
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Beryllium**



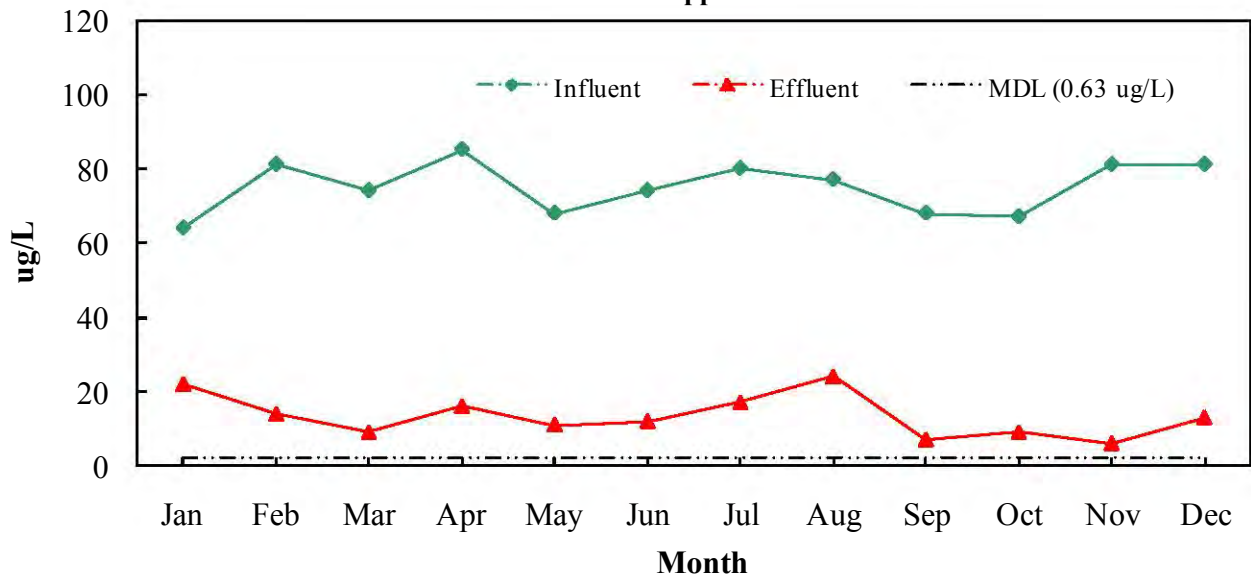
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Cadmium**



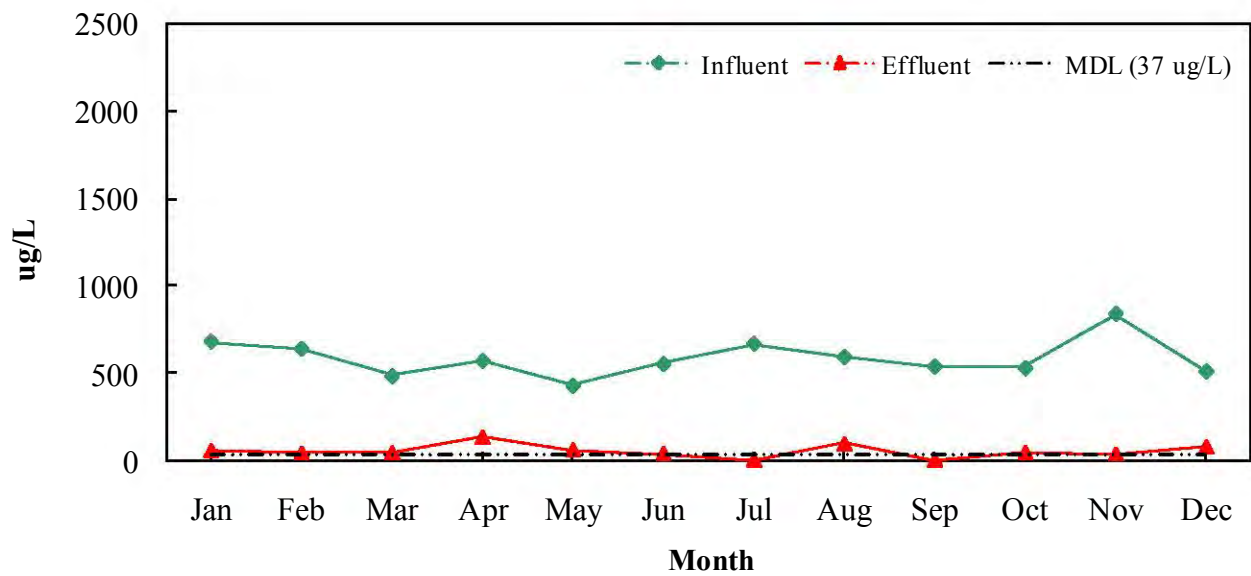
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Chromium**



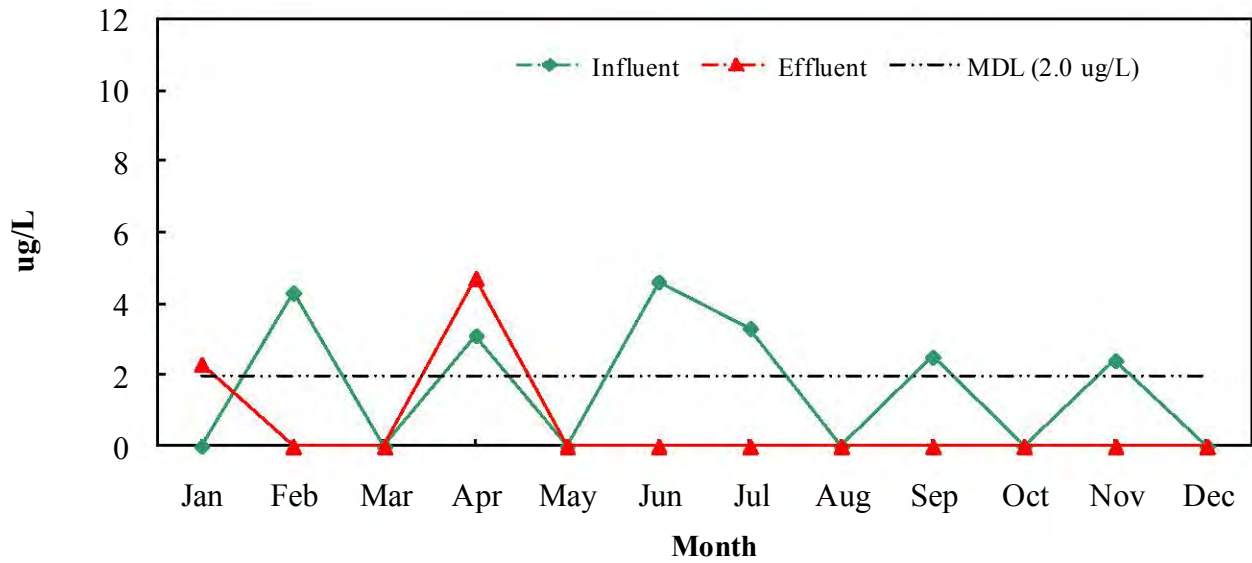
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Copper**



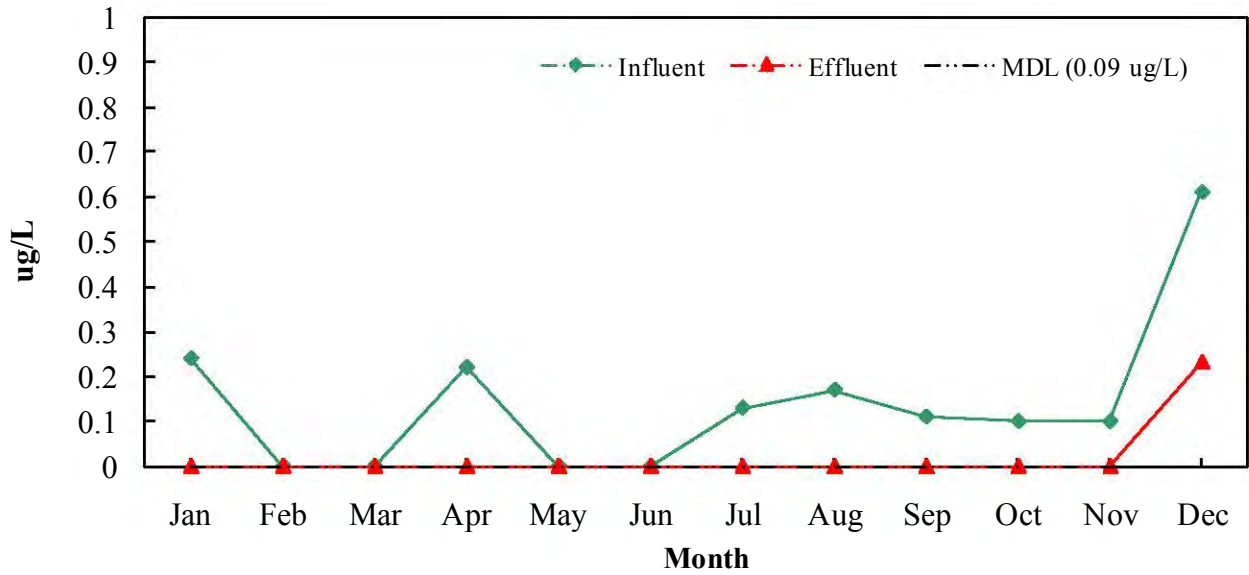
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Iron**



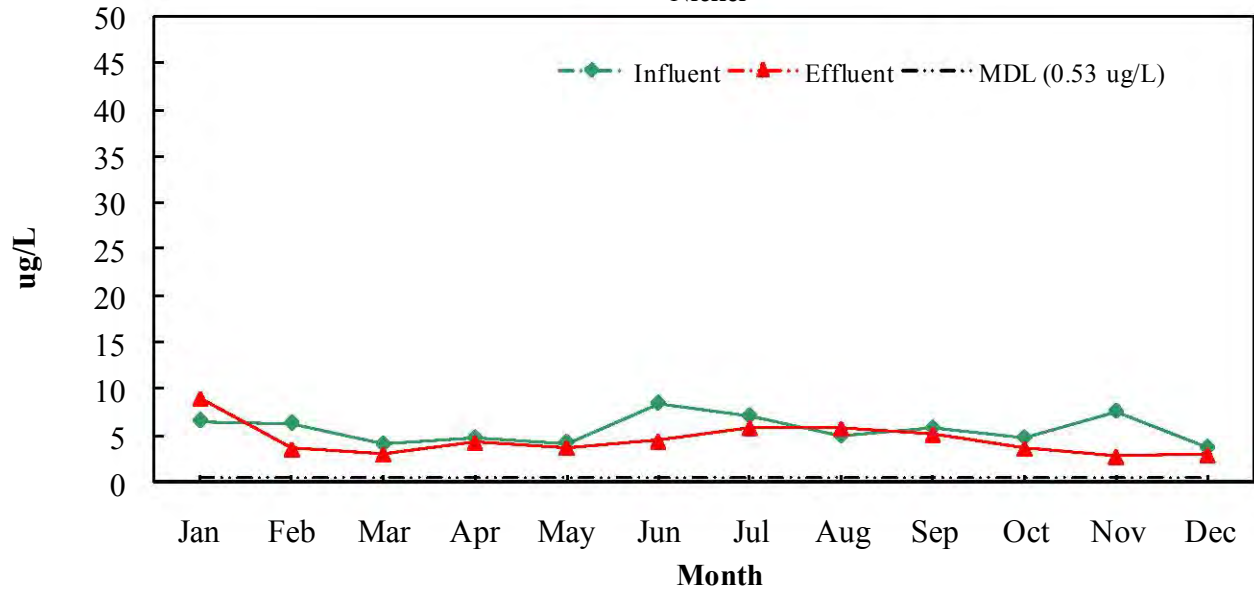
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Lead**



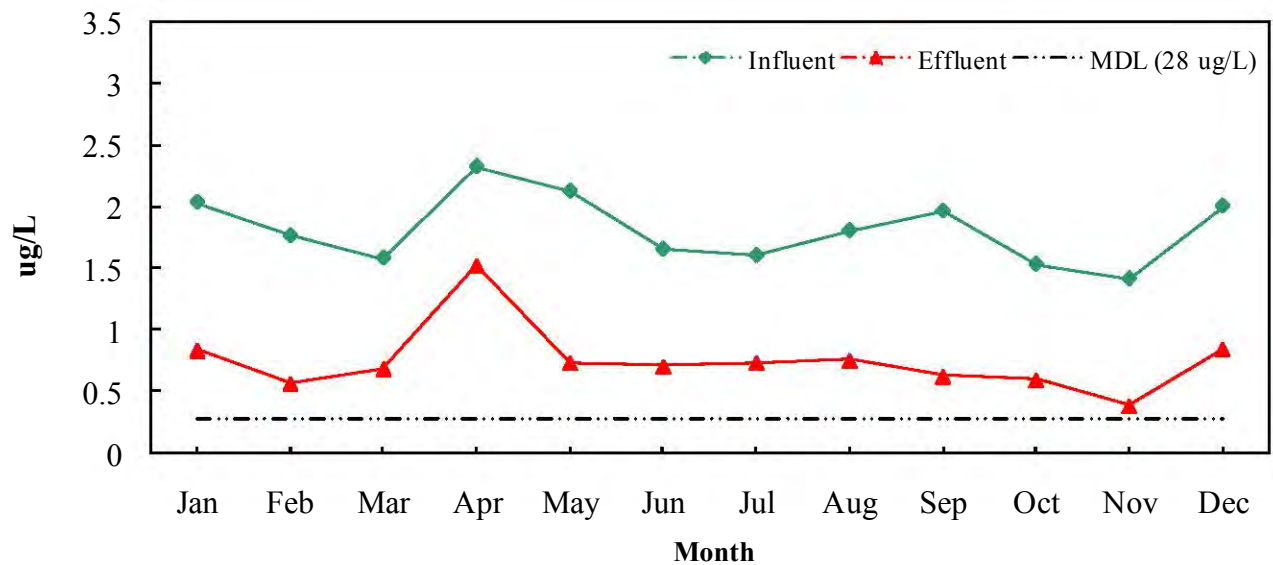
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Mercury**



**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Nickel**

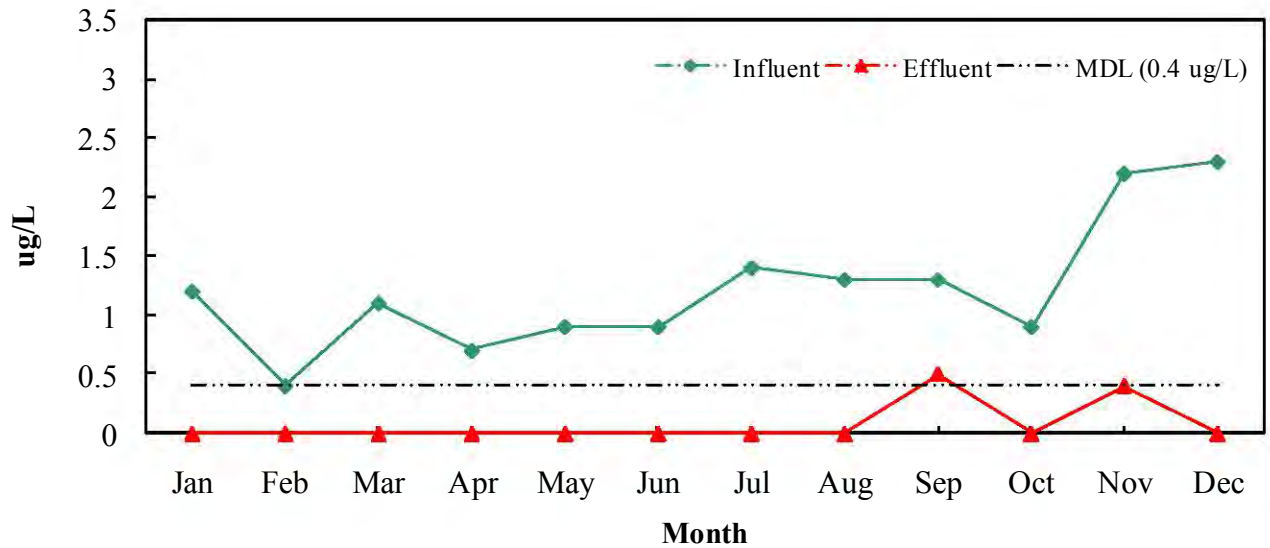


**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Selenium**

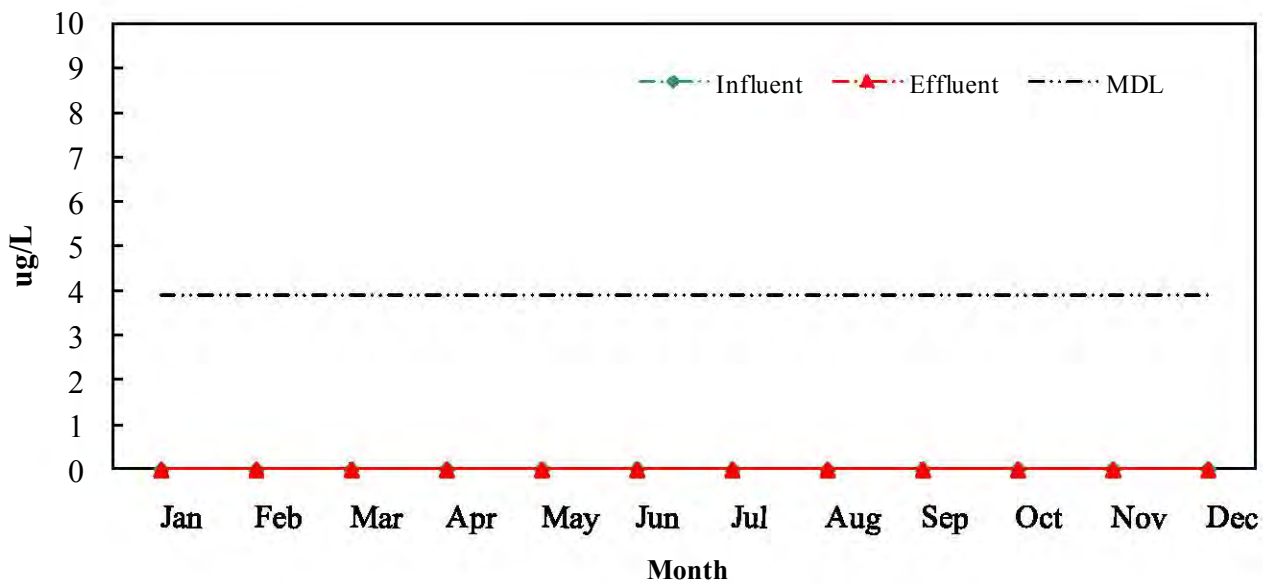




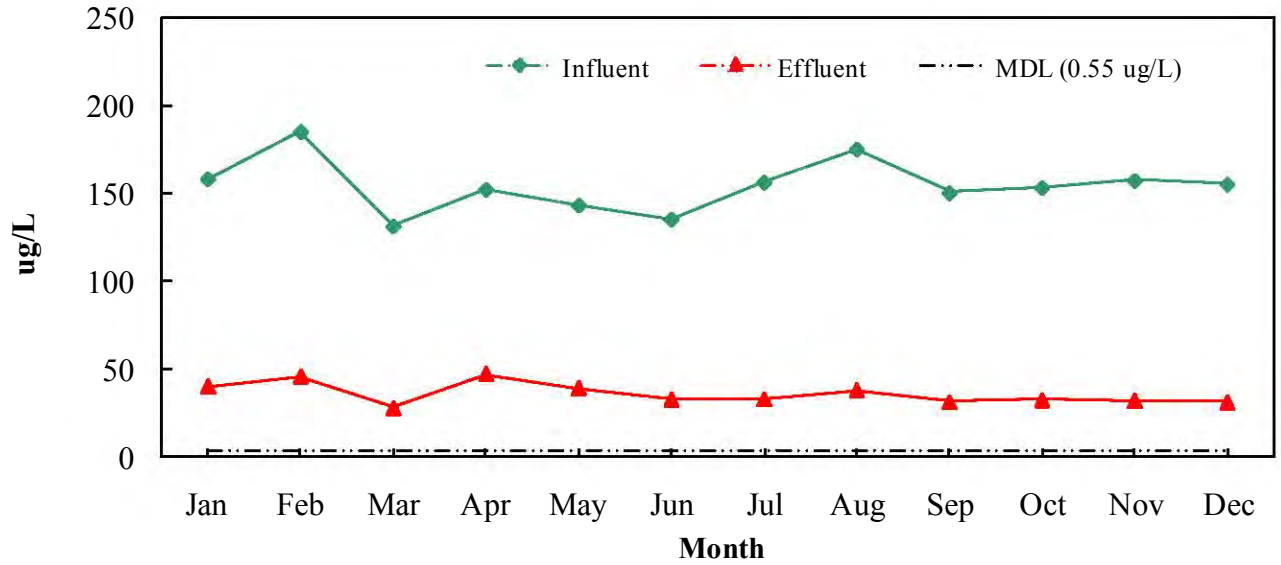
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Silver**



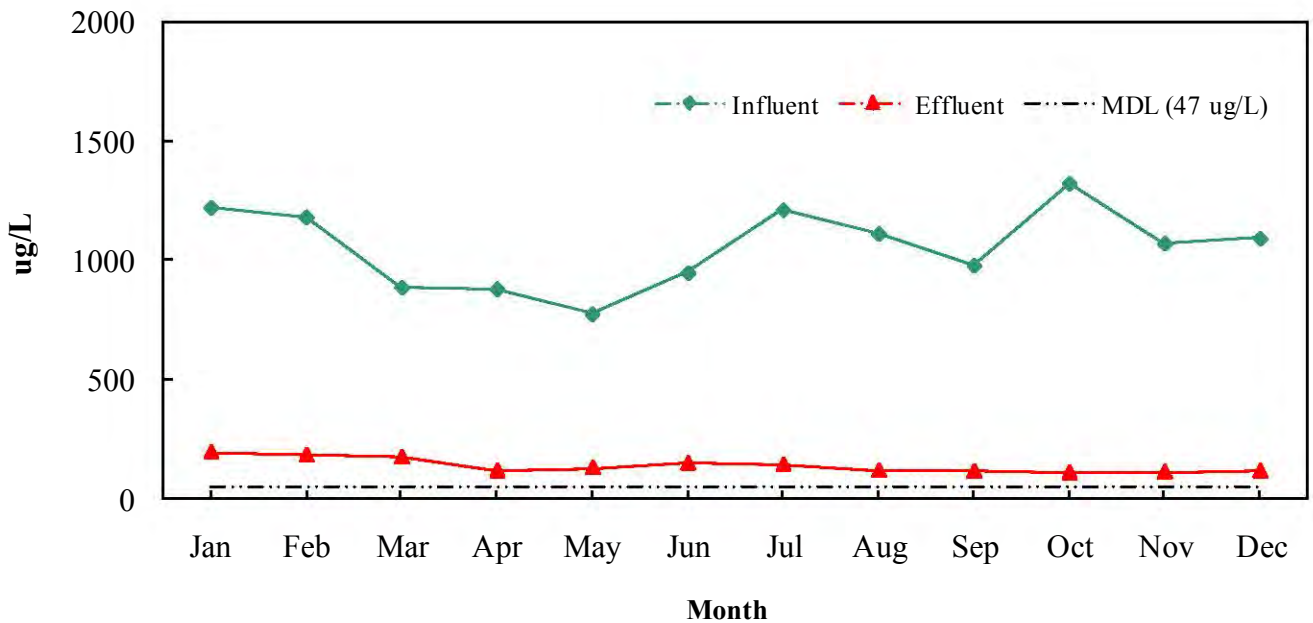
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Thallium**



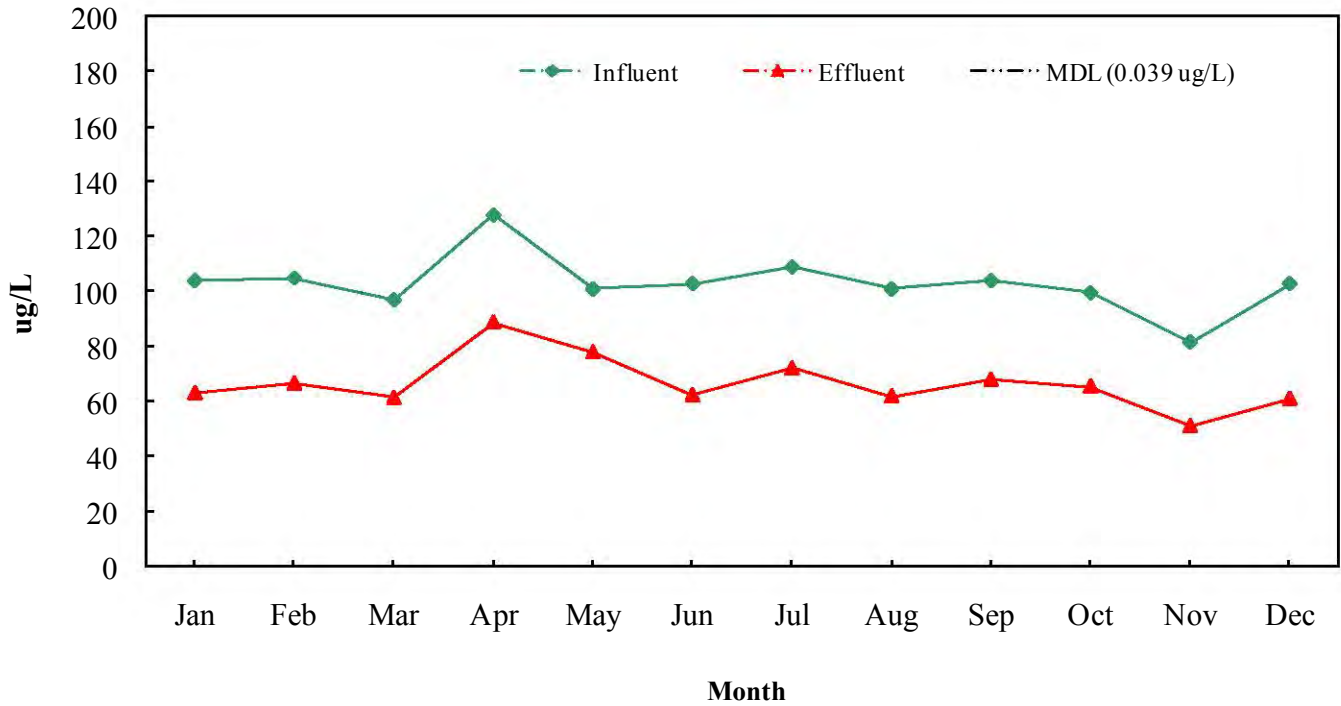
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Zinc**



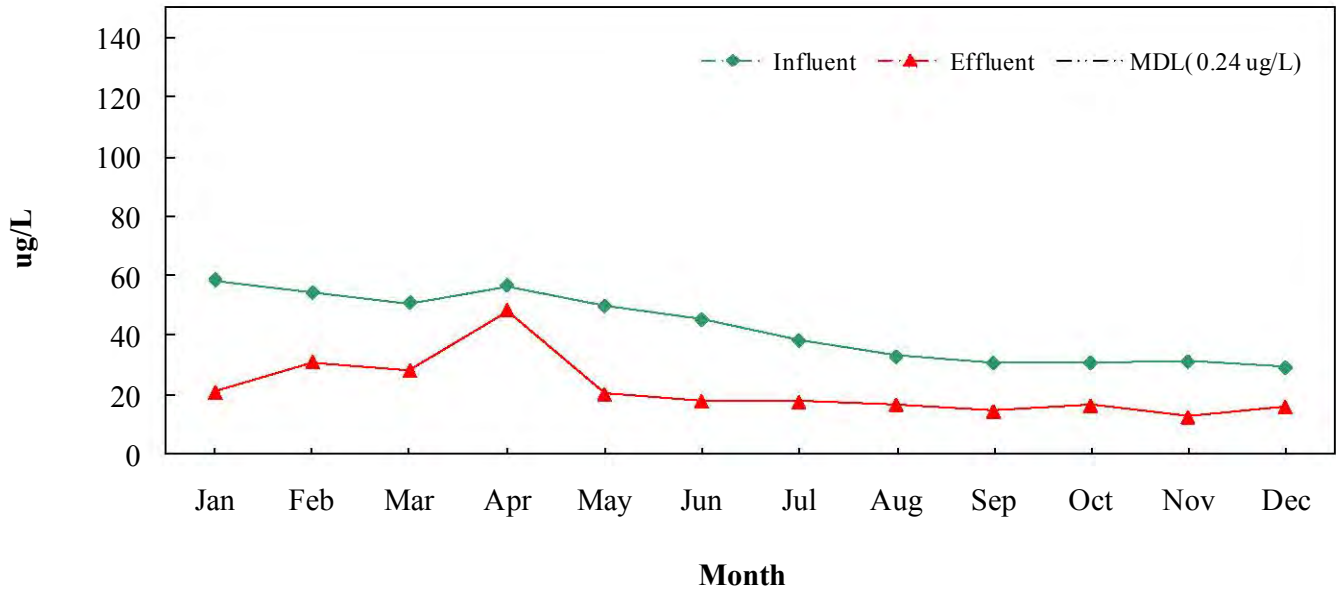
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Aluminum**



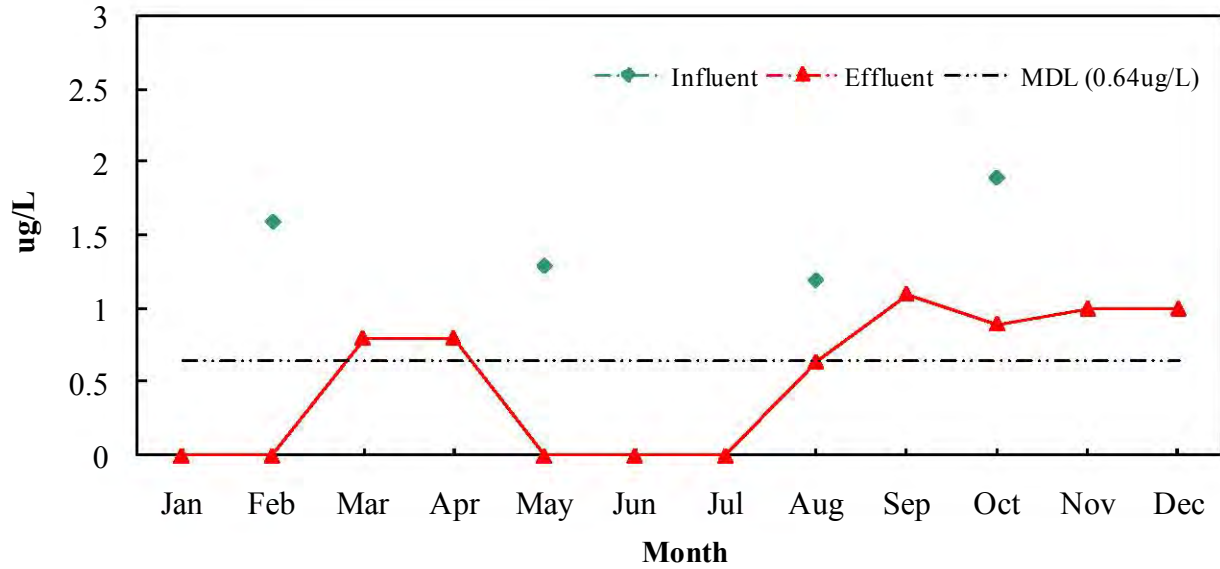
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Barium**



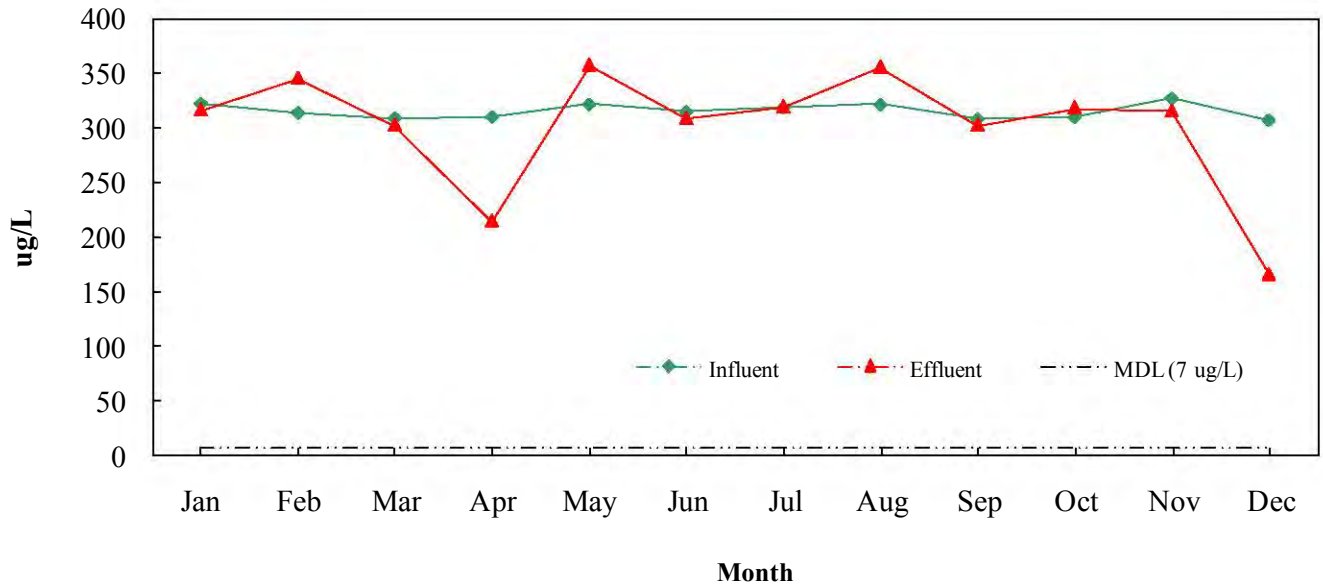
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Manganese**



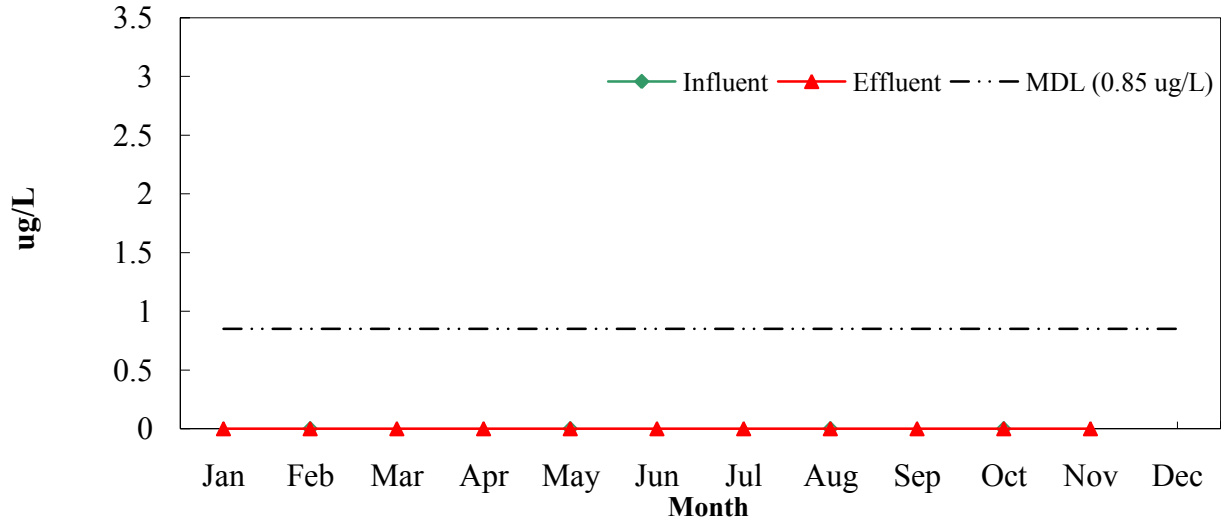
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Vanadium**



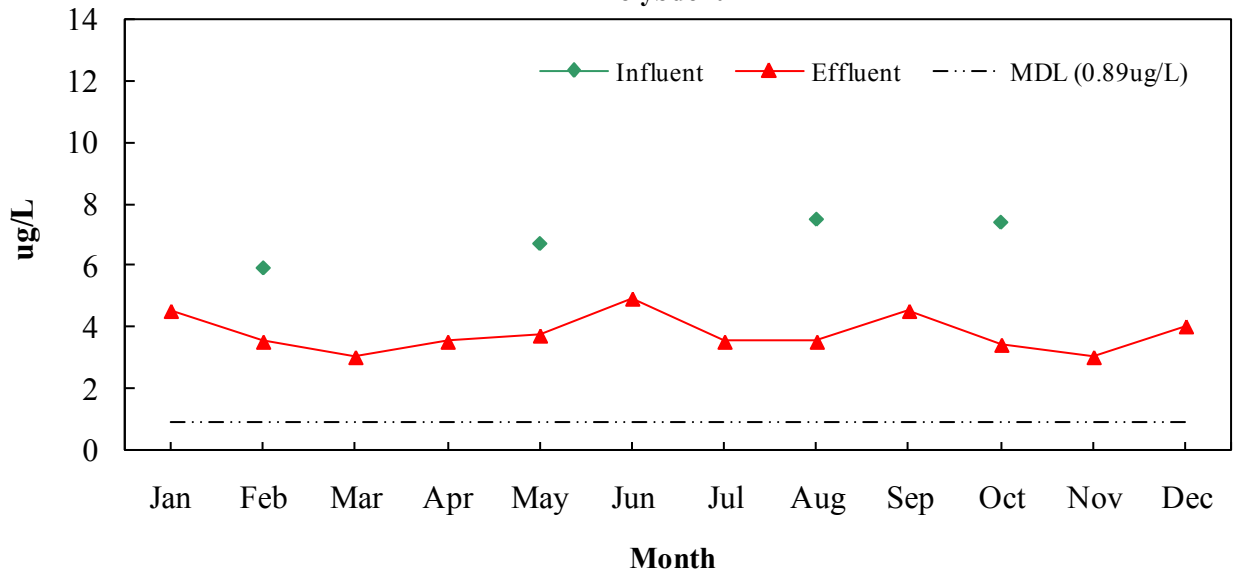
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Boron**



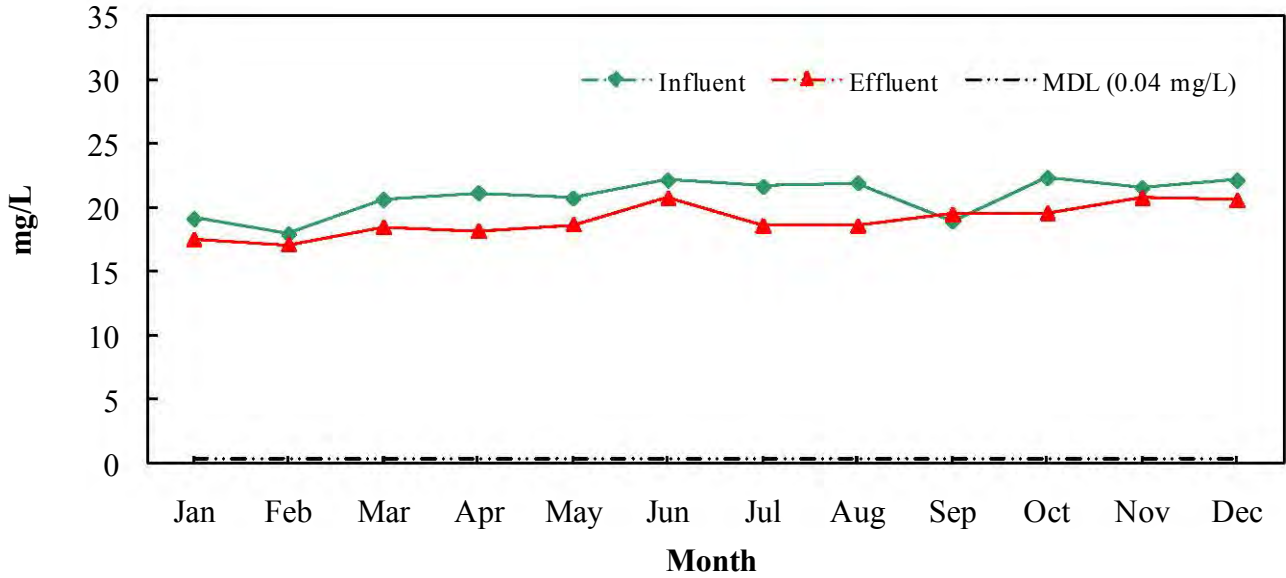
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Cobalt**



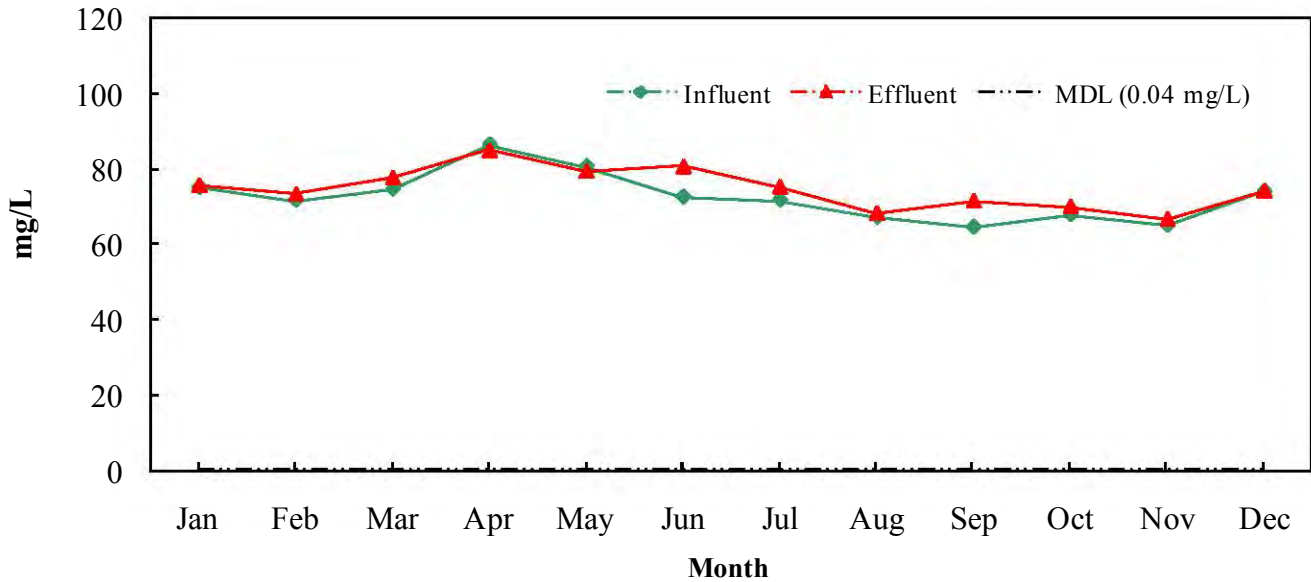
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Molybdenum**



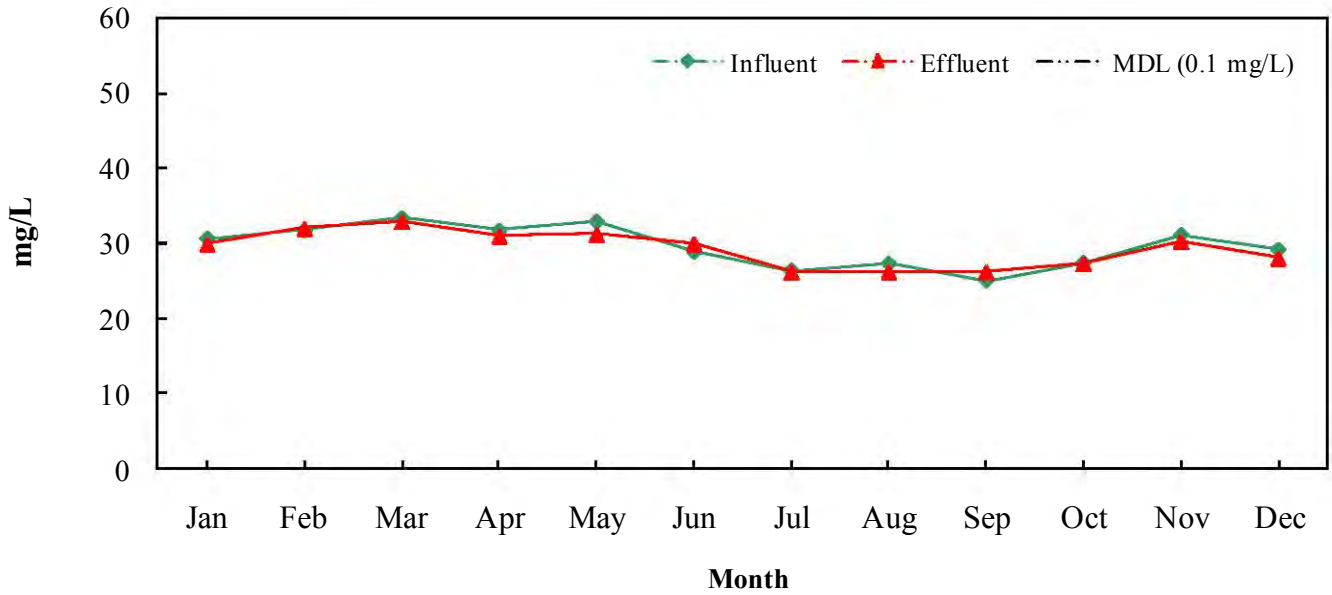
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Potassium**



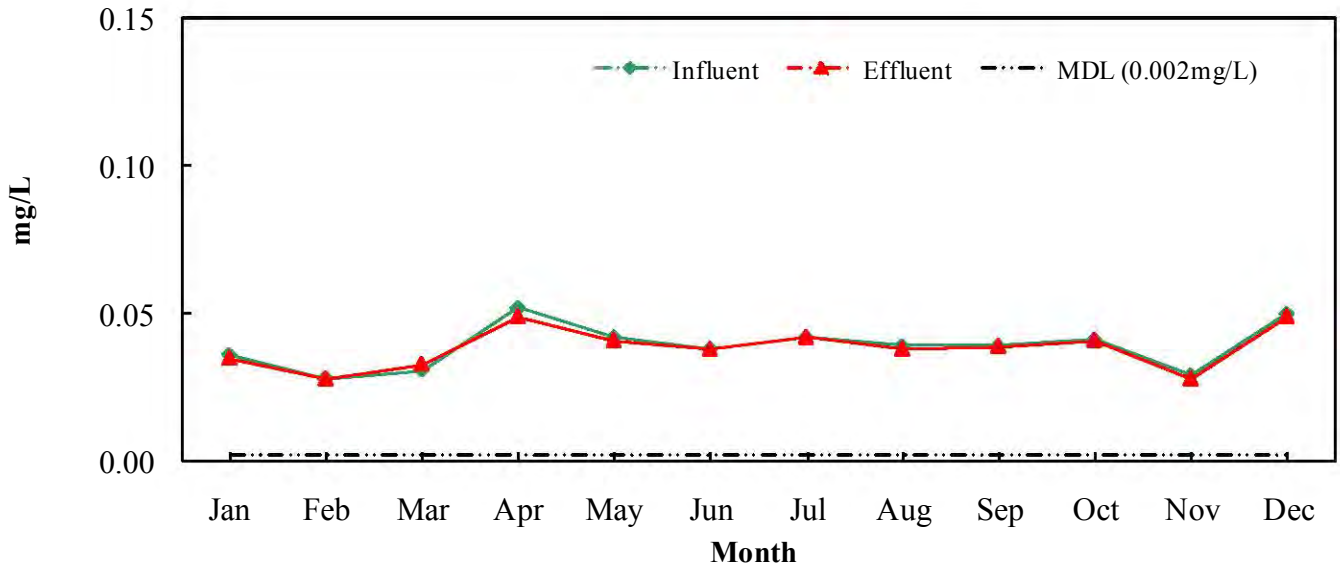
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Calcium**



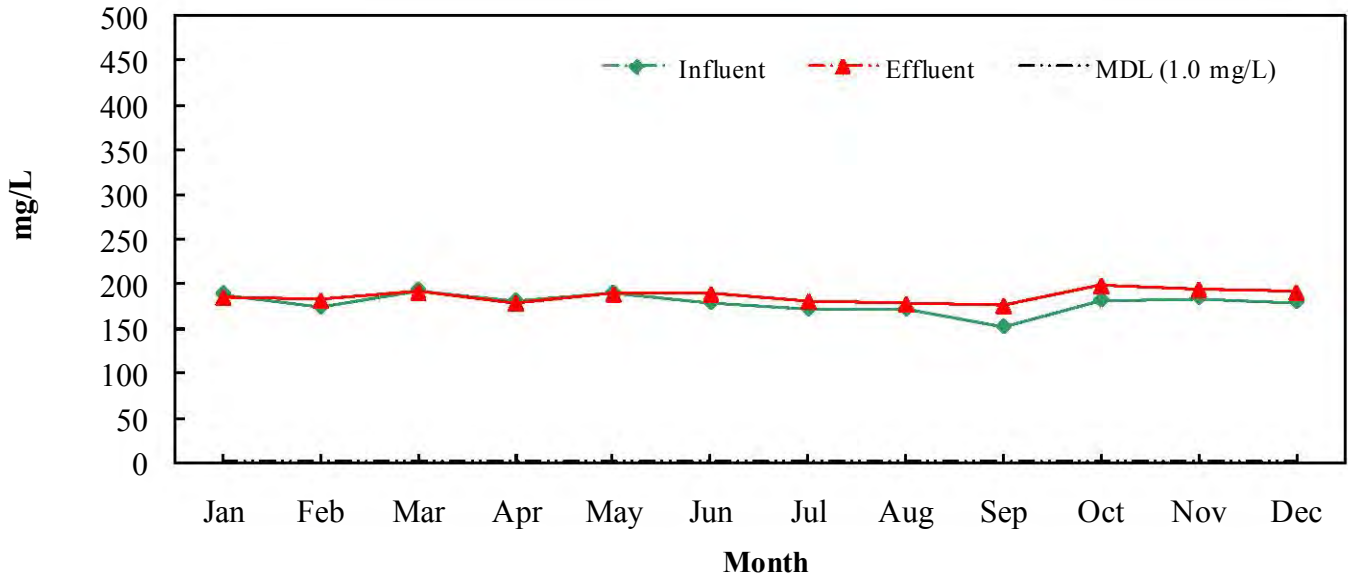
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Magnesium**



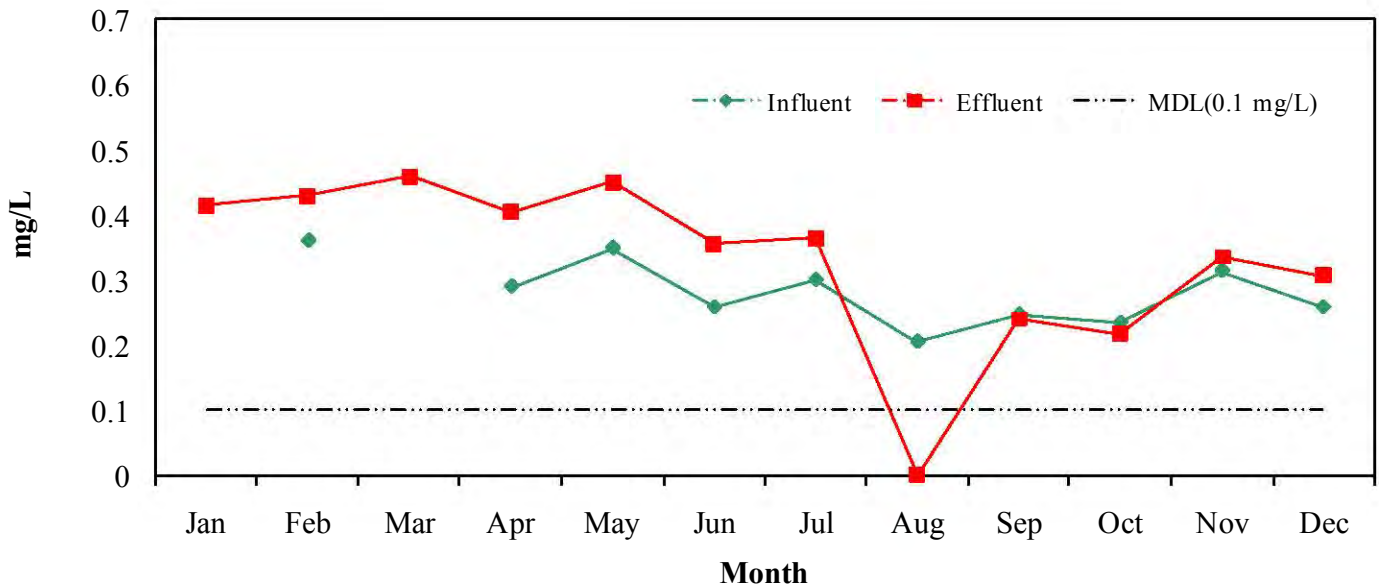
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Lithium**



**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Sodium**

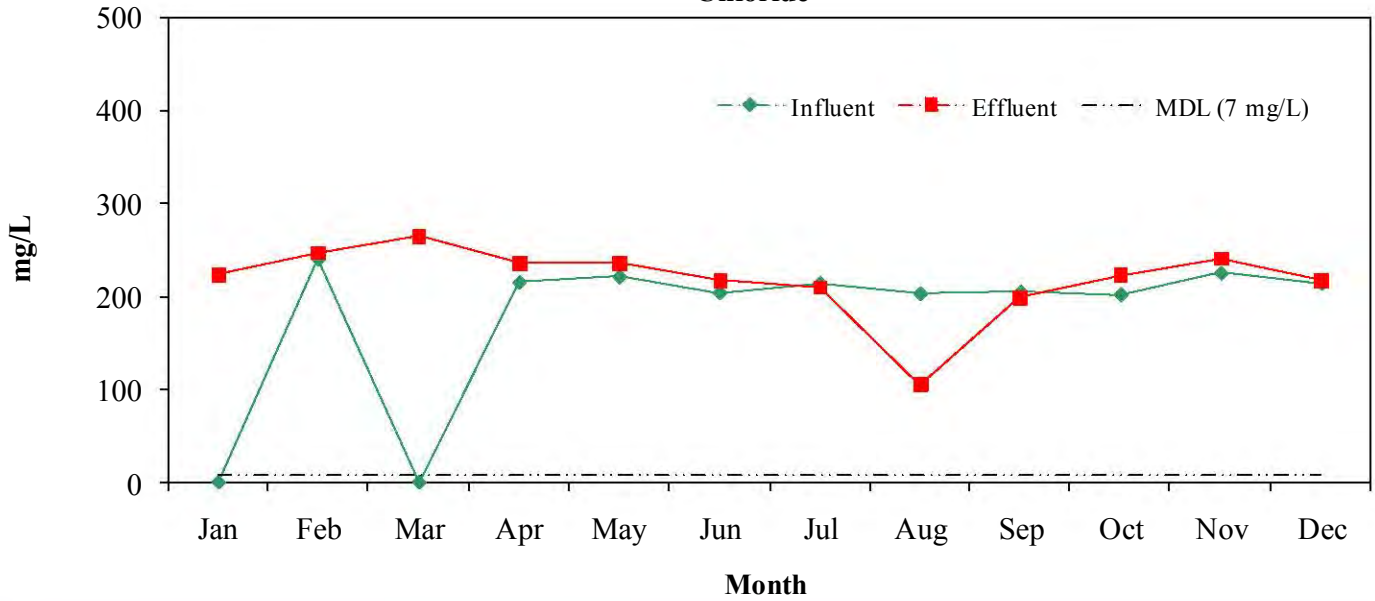


**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Bromide**

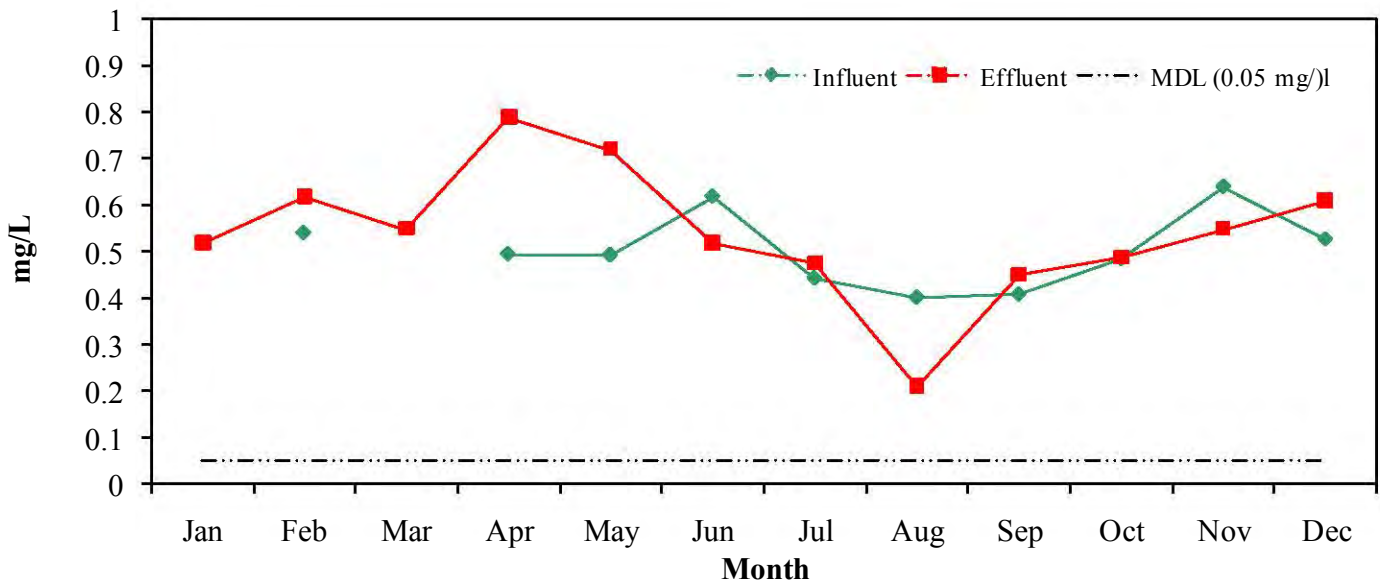




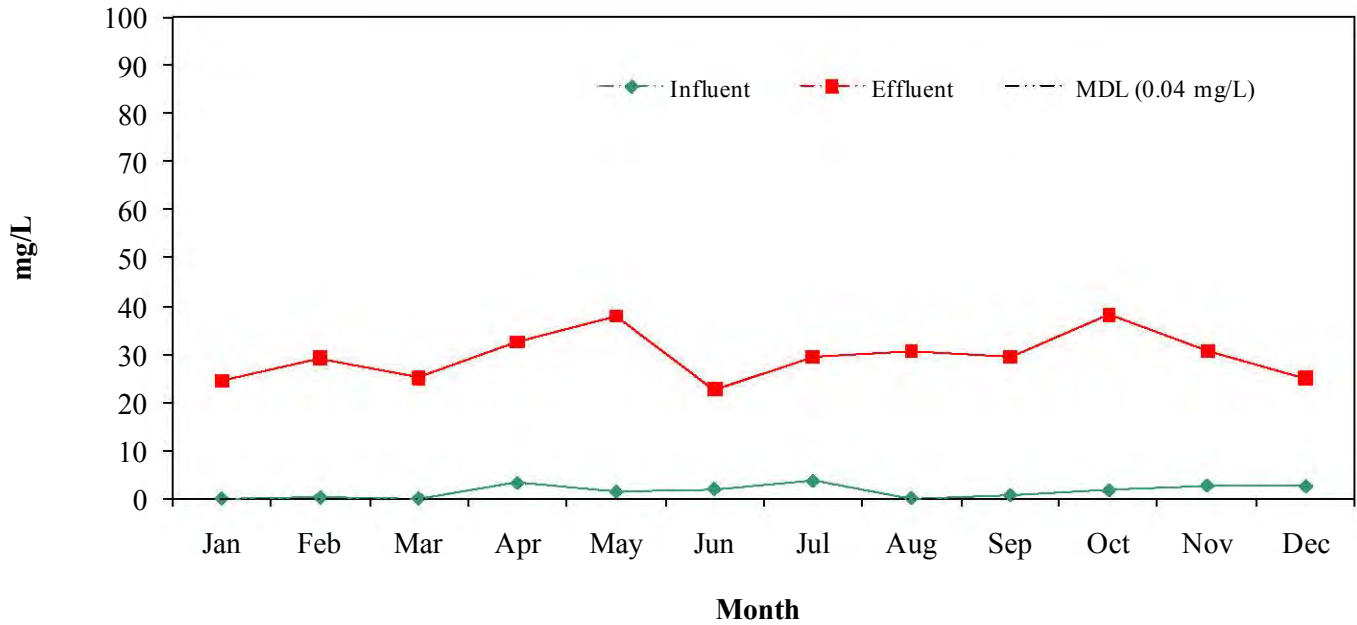
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Chloride**



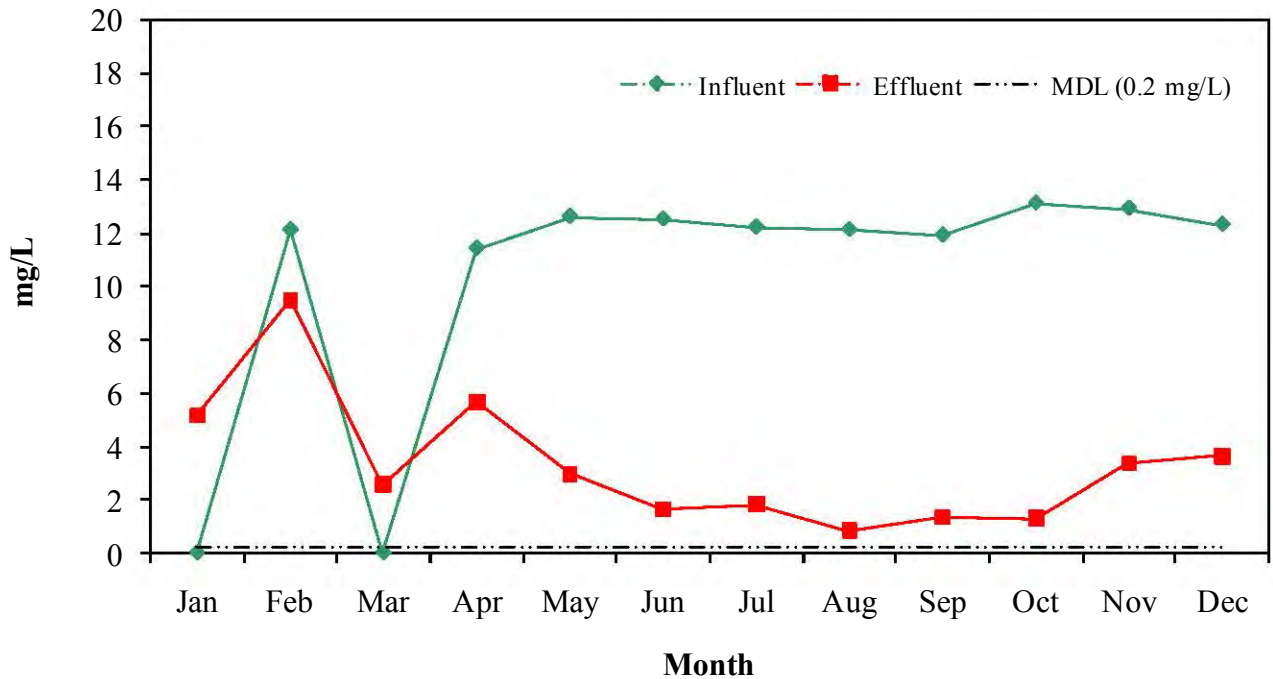
**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Fluoride**



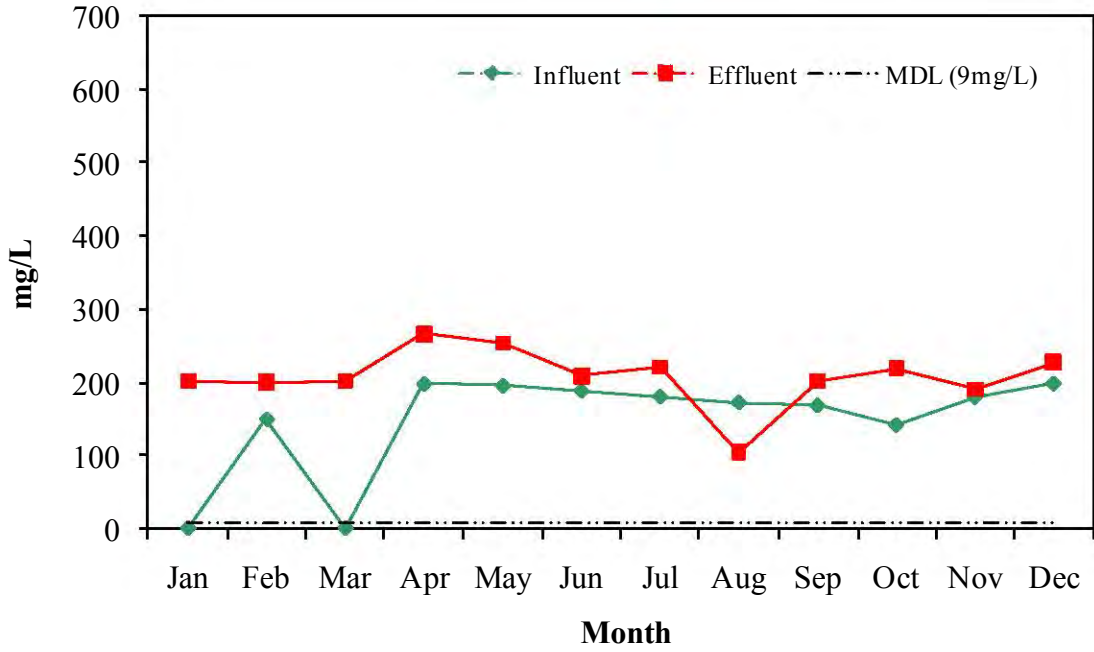
**2009 South Bay Water Reclamation Plant  
Monthly Average  
Nitrate**



**2009 South Bay Water Reclamation Plant  
Monthly Averages  
O-Phosphate**



**2009 South Bay Water Reclamation Plant  
Monthly Averages  
Sulfate**

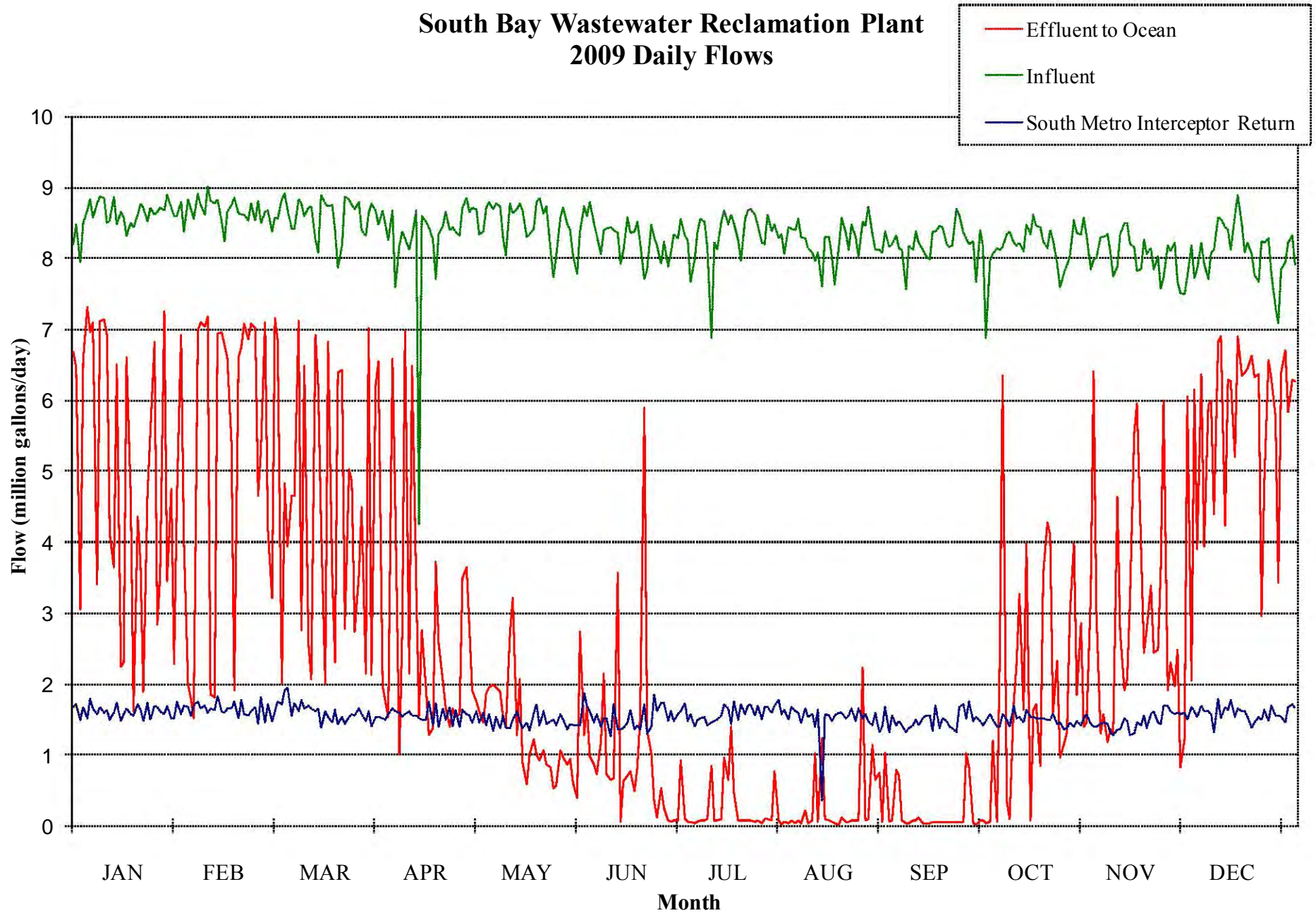


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E. Daily Values of Selected Parameters.

Daily values of selected parameters (e.g. TSS, Flow, TSS Removals, etc.) are tabulated and presented graphically; statistical summary information is provided.

# South Bay Wastewater Reclamation Plant 2009 Daily Flows



### Daily Effluent to Ocean Flows (mgd) 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	6.68	4.60	3.22	6.21	1.75	2.75	0.93	0.06	0.06	0.05	6.41	6.16	
2	6.47	6.93	7.17	6.56	1.62	1.29	0.09	0.04	0.08	1.20	3.02	3.90	
3	3.05	4.00	6.85	1.97	1.46	1.67	0.06	0.07	0.78	0.06	1.31	6.37	
4	6.57	1.99	2.01	1.75	1.88	0.99	0.06	0.03	0.72	2.43	1.57	3.95	
5	7.32	1.79	4.84	1.54	1.95	0.87	0.04	0.07	0.08	6.36	1.19	5.94	
6	6.97	1.52	3.95	6.59	1.99	0.74	0.06	0.04	0.04	0.35	1.37	6.00	
7	7.11	6.99	4.66	4.58	1.95	1.19	0.08	0.22	0.04	0.09	1.33	4.40	
8	3.41	7.10	4.66	1.01	1.90	2.15	0.07	0.04	0.07	1.75	4.63	6.82	
9	7.12	7.04	7.13	2.72	1.53	0.73	0.09	0.07	0.07	2.28	2.75	6.91	
10	7.15	7.19	2.77	6.99	1.40	0.66	0.85	1.03	0.11	3.27	1.92	4.25	
11	6.92	1.85	6.49	2.16	2.72	0.67	0.08	0.06	0.04	1.63	2.08	6.30	
12	4.13	1.81	2.57	6.50	3.22	3.57	0.07	1.25	0.04	3.99	3.20	6.28	
13	3.66	6.94	2.08	3.41	1.28	0.05	0.10	0.09	0.04	0.08	5.52	5.21	
14	6.52	6.96	6.93	1.56	2.08	0.63	0.97	0.07	0.06	1.63	5.96	6.90	
15	2.25	6.79	6.19	2.77	0.88	0.71	0.66	0.06	0.06	1.71	3.89	6.35	
16	2.30	6.60	4.26	1.93	0.59	0.77	1.40	0.04	0.06	0.85	2.44	6.40	
17	7.29	5.79	2.02	1.28	1.01	0.49	0.47	0.02	0.05	3.55	2.78	6.45	
18	4.68	1.92	6.83	1.38	1.22	0.83	0.07	0.12	0.05	4.28	3.40	6.63	
19	1.61	6.61	3.58	3.73	1.00	1.52	0.08	0.06	0.05	4.11	2.45	6.34	
20	4.36	6.75	2.30	2.58	0.92	5.89	0.07	0.06	0.06	1.59	2.48	6.38	
21	3.71	7.08	6.40	2.05	1.07	1.35	0.08	0.07	0.05	2.33	3.64	2.96	
22	1.89	6.86	6.43	1.67	0.86	1.02	0.07	0.07	0.05	0.96	5.99	4.87	
23	4.69	7.09	2.78	1.41	0.83	0.36	0.05	0.08	0.05	1.16	1.92	6.57	
24	5.55	7.03	5.03	1.65	0.54	0.11	0.08	2.23	1.03	1.33	2.31	6.31	
25	6.82	4.65	4.86	1.54	0.57	0.54	0.03	0.07	0.82	2.96	1.98	5.79	
26	2.85	5.28	2.75	1.58	1.07	0.26	0.10	0.10	0.04	3.99	2.48	3.44	
27	3.51	7.10	3.53	3.49	0.96	0.07	0.09	1.15	0.02	1.85	0.82	6.40	
28	7.27	4.19	4.49	3.65	0.87	0.05	0.07	0.66	0.07	2.86	1.22	6.71	
29	3.45		2.15	2.80	0.94	0.07	0.76	0.75	0.08	1.40	6.06	5.85	
30	4.76		7.02	1.91	0.62	0.08	0.08	0.05	0.04	1.46	2.05	6.30	
31	2.28		2.14		0.39		0.02	1.03		3.28		6.27	Annual Summary
<b>Average</b>	4.91	5.37	4.45	2.97	1.32	1.07	0.25	0.31	0.16	2.09	2.94	5.79	2.62
<b>Minimum</b>	1.61	1.52	2.01	1.01	0.39	0.05	0.02	0.02	0.02	0.05	0.82	2.96	0.02
<b>Maximum</b>	7.32	7.19	7.17	6.99	3.22	5.89	1.40	2.23	1.03	6.36	6.41	6.91	7.32
<b>Total</b>	152.35	150.45	138.09	88.97	41.07	32.08	7.73	9.76	4.81	64.84	88.17	179.41	958

### Daily Influent Flows (mgd) – 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	8.20	8.60	8.38	8.67	8.69	8.38	8.55	8.07	8.17	7.97	7.98	7.73	
2	8.47	8.80	8.57	8.48	8.34	8.74	8.33	8.44	8.20	8.07	8.00	7.85	
3	7.95	8.38	8.55	8.67	8.39	8.59	8.27	8.42	8.32	8.14	8.31	8.23	
4	8.50	8.83	8.83	8.47	8.71	8.79	7.67	8.41	8.14	8.12	8.31	7.92	
5	8.68	8.69	8.92	8.27	8.79	8.49	7.99	8.56	8.12	8.17	8.35	7.72	
6	8.83	8.55	8.69	8.68	8.69	8.33	8.38	8.31	7.57	8.35	8.09	8.08	
7	8.58	8.91	8.42	7.59	8.78	8.07	8.56	8.29	8.18	8.39	7.76	8.13	
8	8.77	8.75	8.42	8.19	8.73	8.40	8.52	8.14	8.13	8.22	7.89	8.58	
9	8.87	8.61	8.83	8.38	8.30	8.42	8.17	8.09	8.39	8.18	8.35	8.55	
10	8.86	9.01	8.77	8.28	8.04	8.43	6.89	7.97	8.22	8.22	8.50	8.44	
11	8.50	8.82	8.59	8.13	8.78	8.40	8.23	8.09	8.13	8.11	8.49	8.40	
12	8.54	8.77	8.71	8.30	8.64	8.37	8.13	7.61	8.05	8.48	8.20	8.13	
13	8.88	8.83	8.74	8.67	8.69	7.92	8.51	8.30	7.99	8.35	8.17	8.60	
14	8.47	8.51	8.27	4.27	8.77	8.11	8.68	8.30	8.39	8.61	7.83	8.90	
15	8.65	8.24	8.09	8.59	8.68	8.58	8.48	8.03	8.39	8.46	7.85	8.48	
16	8.57	8.66	8.90	8.51	8.31	8.37	8.61	7.63	8.45	8.43	8.26	8.08	
17	8.33	8.76	8.77	8.43	8.34	8.38	8.49	8.17	8.44	8.25	8.07	8.23	
18	8.49	8.85	8.73	8.27	8.42	8.51	8.26	8.57	8.21	8.15	8.15	8.06	
19	8.43	8.64	8.75	7.72	8.80	8.23	7.96	8.36	8.17	8.41	7.85	7.77	
20	8.62	8.62	8.41	8.35	8.86	7.72	8.55	8.13	8.18	8.26	8.03	7.68	
21	8.77	8.62	7.86	8.46	8.63	7.84	8.68	8.47	8.70	7.92	7.58	8.24	
22	8.71	8.54	8.18	8.65	8.74	8.47	8.70	8.31	8.61	7.59	7.73	8.23	
23	8.51	8.78	8.88	8.41	8.12	8.31	8.62	8.02	8.37	7.82	8.19	8.28	
24	8.72	8.54	8.84	8.43	7.74	8.18	8.47	8.52	8.28	7.90	8.11	7.79	
25	8.62	8.82	8.76	8.39	8.02	7.92	8.22	8.46	8.20	8.03	8.22	7.31	
26	8.65	8.49	8.69	8.32	8.57	8.24	8.20	8.73	8.24	8.54	7.68	7.09	
27	8.72	8.65	8.79	8.71	8.71	7.88	8.62	8.34	7.68	8.37	7.51	7.84	
28	8.68	8.68	8.41	8.85	8.47	8.09	8.39	8.12	8.40	8.35	7.50	7.95	
29	8.89	8.38	8.32	8.66	8.41	8.35	8.47	8.13	8.17	8.57	7.75	8.23	
30	8.72		8.63	8.72	8.05	8.28	8.28	8.09	6.88	8.33	8.19	8.33	
31	8.60		8.77		7.80		8.35	8.39		7.85		7.91	Annual Summary
<b>Average</b>	8.61	8.68	8.60	8.28	8.48	8.29	8.33	8.24	8.18	8.21	8.03	8.09	8.33
<b>Minimum</b>	7.95	8.24	7.86	4.27	7.74	7.72	6.89	7.61	6.88	7.59	7.50	7.09	4.27
<b>Maximum</b>	8.89	9.01	8.92	8.85	8.86	8.79	8.70	8.73	8.70	8.61	8.50	8.90	9.01
<b>Total</b>	266.78	251.33	266.47	248.52	263.01	248.79	258.23	255.47	245.37	254.61	240.90	250.76	3,050

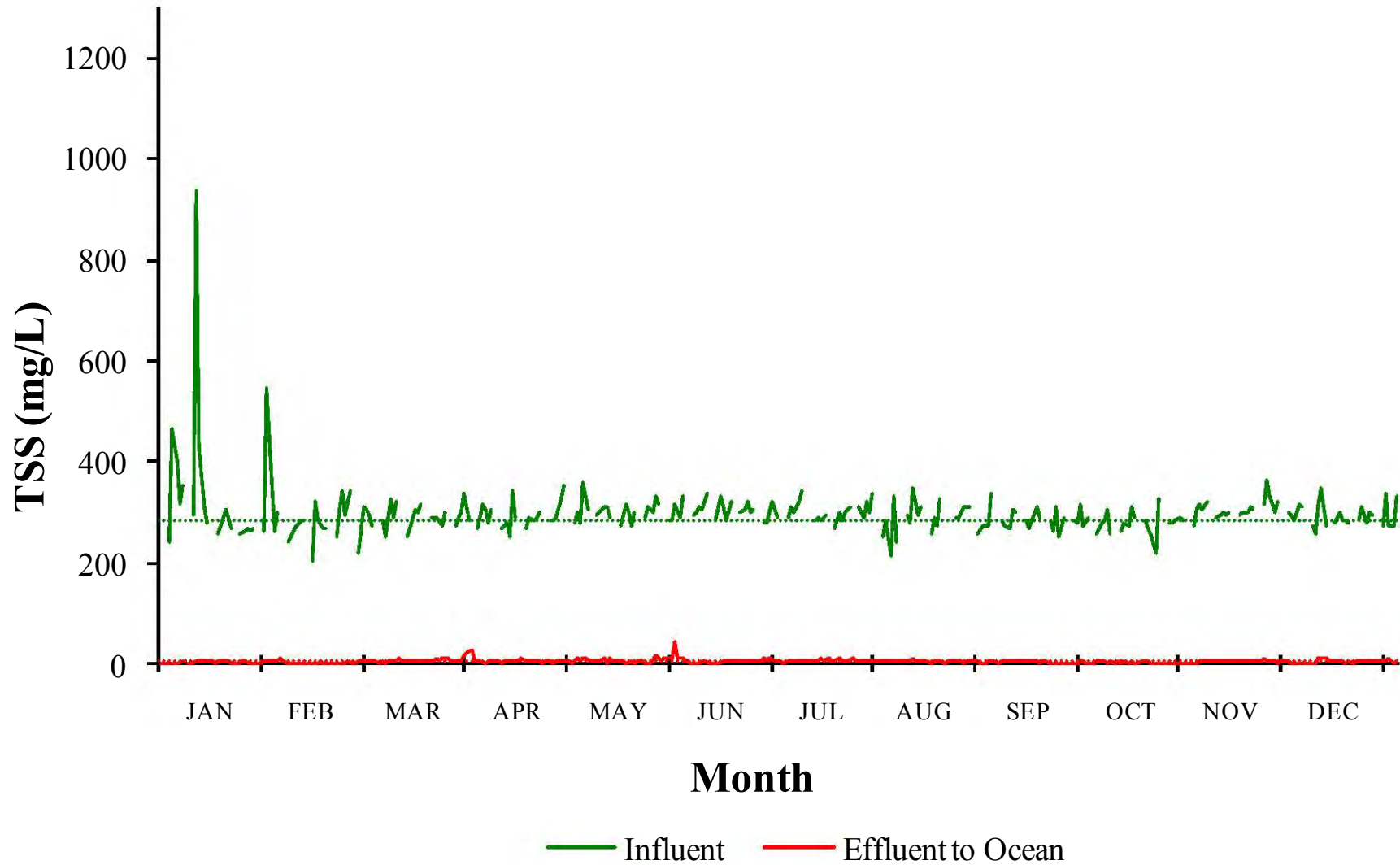


### South Metro Interceptor<sup>6</sup> Flows (mgd) 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	1.67	1.75	1.48	1.54	1.62	1.42	1.61	1.64	1.31	1.57	1.39	1.62	
2	1.72	1.57	1.62	1.54	1.46	1.88	1.74	1.49	1.56	1.49	1.40	1.53	
3	1.49	1.70	1.75	1.52	1.60	1.69	1.48	1.67	1.42	1.39	1.44	1.69	
4	1.68	1.68	1.71	1.49	1.41	1.62	1.58	1.61	1.47	1.40	1.46	1.62	
5	1.51	1.56	1.92	1.57	1.57	1.45	1.40	1.60	1.42	1.58	1.44	1.61	
6	1.79	1.69	1.95	1.65	1.33	1.58	1.49	1.46	1.32	1.50	1.31	1.57	
7	1.65	1.75	1.55	1.61	1.53	1.40	1.52	1.65	1.38	1.39	1.28	1.32	
8	1.57	1.66	1.74	1.60	1.37	1.52	1.54	1.53	1.42	1.70	1.36	1.79	
9	1.67	1.69	1.62	1.53	1.55	1.51	1.42	1.58	1.50	1.51	1.35	1.52	
10	1.60	1.59	1.77	1.57	1.38	1.25	1.45	1.39	1.41	1.53	1.52	1.67	
11	1.64	1.66	1.66	1.62	1.38	1.71	1.48	1.64	1.52	1.45	1.47	1.63	
12	1.49	1.64	1.69	1.56	1.49	1.36	1.50	0.35	1.55	1.63	1.28	1.78	
13	1.59	1.83	1.65	1.55	1.62	1.36	1.56	1.58	1.56	1.54	1.30	1.54	
14	1.74	1.61	1.61	1.51	1.48	1.37	1.72	1.56	1.33	1.54	1.46	1.65	
15	1.48	1.60	1.66	1.49	1.38	1.46	1.66	1.48	1.69	1.52	1.41	1.61	
16	1.57	1.66	1.38	1.50	1.46	1.64	1.43	1.55	1.38	1.52	1.56	1.61	
17	1.66	1.65	1.61	1.75	1.34	1.35	1.76	1.60	1.51	1.51	1.37	1.53	
18	1.57	1.76	1.53	1.41	1.59	1.41	1.50	1.60	1.47	1.49	1.57	1.37	
19	1.55	1.52	1.45	1.74	1.71	1.35	1.71	1.51	1.40	1.50	1.61	1.46	
20	1.72	1.78	1.63	1.40	1.41	1.72	1.58	1.55	1.38	1.57	1.46	1.53	
21	1.63	1.57	1.43	1.66	1.62	1.29	1.69	1.65	1.31	1.43	1.43	1.49	
22	1.47	1.55	1.53	1.50	1.44	1.39	1.71	1.47	1.68	1.45	1.69	1.64	
23	1.73	1.62	1.44	1.68	1.48	1.85	1.56	1.66	1.71	1.36	1.69	1.48	
24	1.50	1.68	1.53	1.40	1.50	1.61	1.70	1.52	1.51	1.38	1.62	1.70	
25	1.70	1.44	1.58	1.64	1.41	1.74	1.50	1.58	1.75	1.46	1.58	1.55	
26	1.67	1.81	1.56	1.40	1.57	1.73	1.68	1.48	1.48	1.39	1.59	1.55	
27	1.62	1.46	1.66	1.64	1.49	1.47	1.68	1.42	1.54	1.47	1.57	1.54	
28	1.58	1.71	1.58	1.57	1.36	1.62	1.59	1.59	1.47	1.41	1.60	1.46	
29	1.69		1.48	1.55	1.43	1.47	1.70	1.31	1.41	1.51	1.49	1.67	
30	1.52		1.62	1.45	1.42	1.57	1.78	1.39	1.47	1.58	1.68	1.72	
31	1.51		1.40		1.41		1.57	1.68		1.43		1.66	Annual Summary
<b>Average</b>	1.62	1.65	1.61	1.55	1.48	1.53	1.59	1.51	1.48	1.49	1.48	1.58	1.55
<b>Minimum</b>	1.47	1.44	1.38	1.40	1.33	1.25	1.40	0.35	1.31	1.36	1.28	1.32	0.35
<b>Maximum</b>	1.79	1.83	1.95	1.75	1.71	1.88	1.78	1.68	1.75	1.70	1.69	1.79	1.95
<b>Total</b>	49.98	46.19	49.79	46.64	45.81	45.79	49.29	46.79	44.33	46.20	44.38	49.11	564

6 South Metro Interceptor is the point at which any return stream (e.g. removed biosolids) are returned to the Metro System.

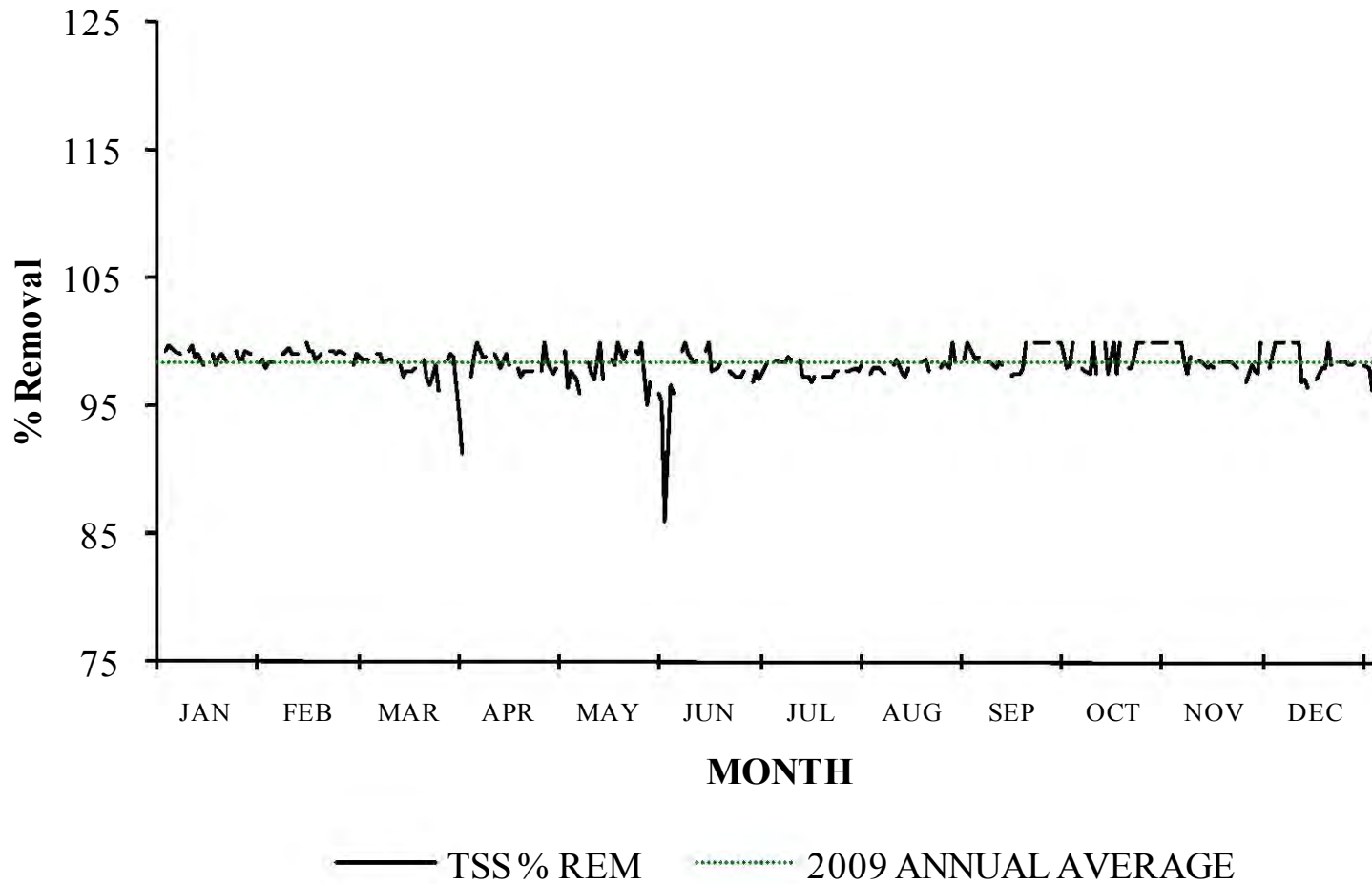
## South Bay Wastewater Reclamation Plant 2009 Total Suspended Solids





## 2009 TSS Percent Removals

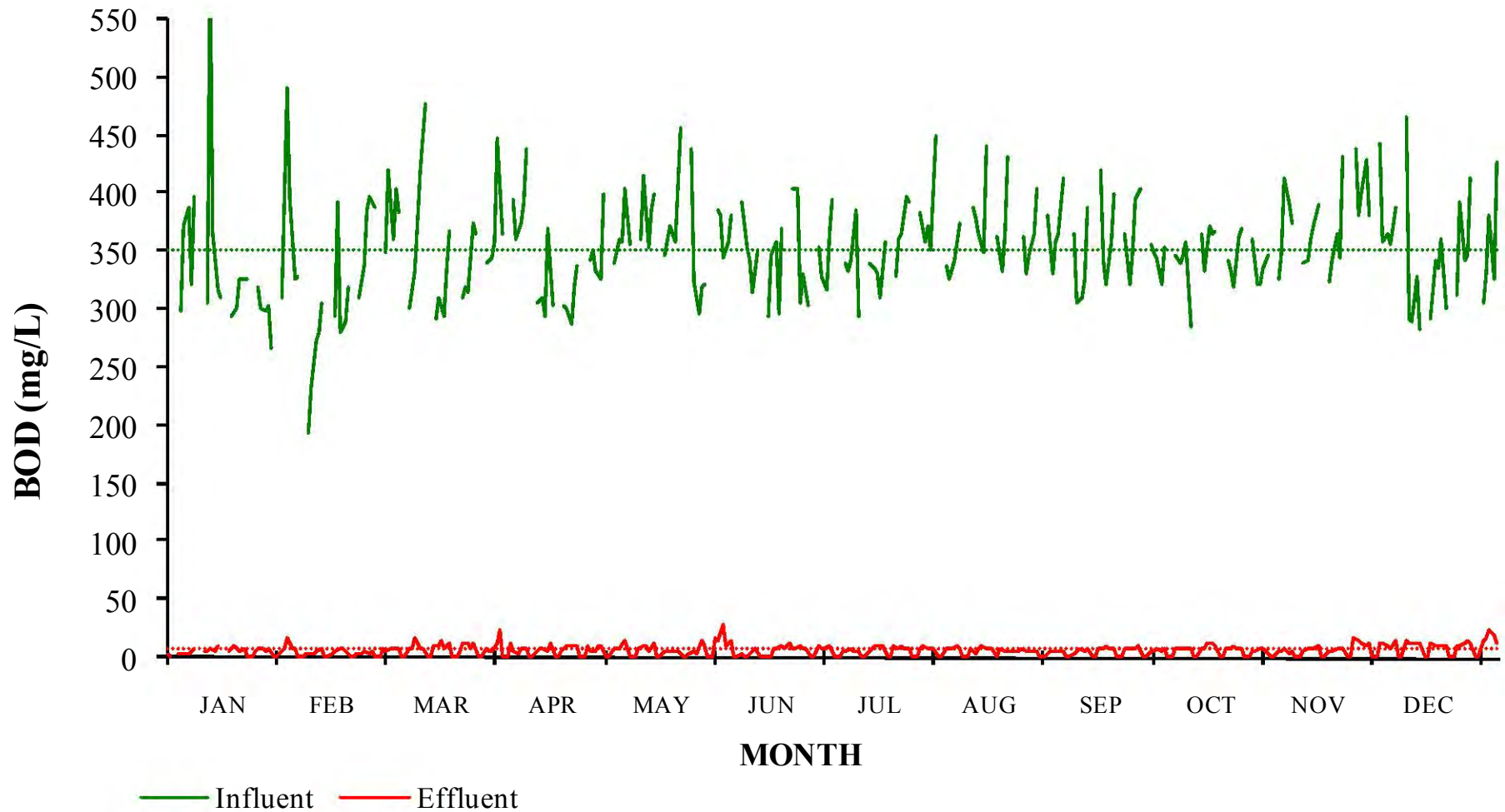
### South Bay Wastewater Reclamation Plant 2009 TSS Percent Removal



### 2009 TSS Percent Removals

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	100	98.4	99.1	91.3		86.0	98.4	97.6	98.6		98.7	95.5	
2		98.8	99.0		99.3	96.8		98.0	98.8		98.5	97.5	
3		97.9	98.6		96.4	95.9		98.0		97.9	97.5		
4	99.4	98.4	98.7	97.2	97.7		98.7	97.8		97.9	98.9		
5	99.7	98.5		98.9	97.1		98.5	97.5	98.5	97.6		96.3	
6	99.6			99.4	96.0	99.3	98.4		98.4	98.3		96.5	
7	99.4		99.0	99.0		100	99.0		98.1	97.5	98.6	96.8	
8	99.1	99.0	99.2	98.9		99.2	98.7	98.2	98.4		98.1	97.2	
9		99.3	98.3		98.4	98.5		98.7	98.3		98.0	96.5	
10		99.5	98.7		97.7	98.6		97.5		97.5	98.1		
11	99.4	99.0	98.6	99.2	97.1		98.6	97.4		97.5	97.9		
12	99.7	99.2		98.8	98.3		97.4	98.0	97.4	97.1		97.0	
13	99.0			98.1	97.0	99.4	97.4		97.5	97.6		98.1	
14	99.0		98.3	99.0		100	96.9		97.6	97.4	98.6	98.0	
15	98.3	100	97.4	98.1		97.7	97.3		98.0		98.5	98.2	
16		99.4	97.7		98.6	98.0		98.4	97.6		98.4	98.2	
17		99.3	97.8		98.3	98.4		98.7			98.3		
18	99.2	98.7	97.9	97.9	98.3		97.2	97.8		98.0	98.1		
19	98.3	99.1		97.4	98.6		97.2		98.2	97.7		98.4	
20	98.8			97.7	99.4	97.7	97.3		96.8	97.8		98.5	
21	99.1		98.7	97.8		97.6	97.8		98.0	98.4	96.9	98.2	
22	98.3	99.3	97.2	97.8		97.4	97.8	98.1	97.1		98.1	98.2	
23		99.4	96.6		99.4	97.4		98.3	97.3		97.8	98.4	
24		99.2	98.1		99.2	97.8		98.1		98.2	97.5		
25	99.4	99.3	96.2	97.8	100		97.8	98.2		97.6	97.9		
26	98.7	99.2		97.6	95.2		97.8	98.4	98.0	98.5		98.1	
27	98.8			98.4	96.8	96.9	98.0		98.2	98.6		98.1	
28	99.2		98.6	97.6		97.7	97.7		97.9	98.6	98.0	96.3	
29	99.1	98.3	99.0	98.0		97.2	98.1	98.6	98.1		97.3	96.9	
30			98.9		95.9	98.1		97.8	97.9		97.3	98.4	
31			94.5		95.3			99.2		97.8			
	Annual Summary												
<b>Average</b>	99.1	99.0	98.1	97.9	97.7	97.5	97.9	98.1	97.9	97.9	98.1	97.5	98.1
<b>Minimum</b>	98.3	97.9	94.5	91.3	95.2	86.0	96.9	97.4	96.8	97.1	96.9	95.5	86.0
<b>Maximum</b>	100	100	99.2	99.4	100	100	99.0	99.2	98.8	98.6	98.9	98.5	100

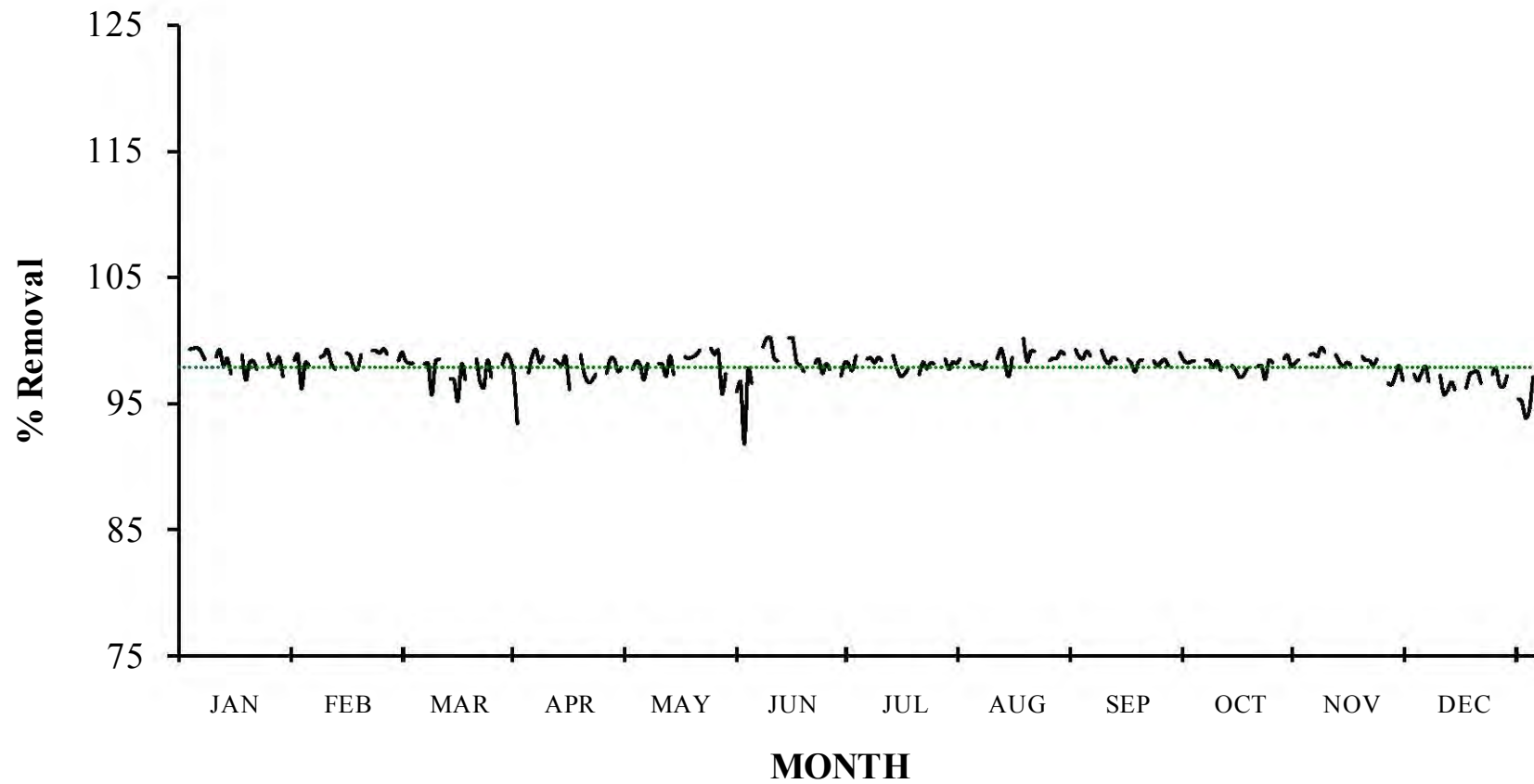
## South Bay Wastewater Reclamation Plant 2009 Biochemical Oxygen Demand



## Daily BOD Values 2009

Day	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec			
	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF		
1	300	3.4					447	12.3	0	0	382	13	366	9					353	6.3			366	10.1		
2		0.0			419	4.6	365	24.6			344	28.6	395	6			365	3.8	0	0.0		4.2	356	7.9		
3	0	0.0	395	15.7	360	6.5	0	0.0			358	8.9	0	0	325	7.3	414	5.7			414	6.0	387	13.2		
4			326	6.3	403	8.0			360	6.5	382	13.5			343	7.1	0	0.0			391	2.9	0	0.0		
5			328	7.0	383	7.6			359	7.6	0	0.0			359	8.7			339	6.0	374	4.1				
6	387	2.9	0	0.0	0	0.0	361	5.0	405	13			334	5	373	6.8			347	ND	0	0.0				
7	322	3.4	0	0.0			375	3.4	356	7.1			342	6.6	0	0.0	306	5.1	359	6.6			291	12.8		
8	397	6.7					392	7.4	0	0.0	354	0.0	386	5.8			309	6.1	284				289	11.9		
9	0	0.0			334	6.7	439	6.3			341	0.0	294	5.2			326	5.0	0	0.0	342	6.5	329	11.4		
10	0	0.0	274	2.5	375	16.7	0	0.0			315	5	0	0.0	379	3.1	388	6.5			360	7.9	283	11.5		
11			279	5.6	417	7.6			416	8.8	351	6			366	7	0	0.0			371	7.1	0	0.0		
12			305	7.4	478	7.9			354	10.5	0	0			348	10.5			333	8.3	391	8.4				
13	365	7.9	0	0.0	0	0.0	310	6.0	386	5			336	8	441	6.7			372	11.3	0	0.0				
14	316	5.0	0	0.0			294	6.2	399	11			330		0	7.2	341	6.7	364	ND				9.7		
15	311	8.7					370	5.4	0	0	347	0.0	311	8.8			322	8.5	367	ND			335	8.9		
16	0	0.0			310	10.2	303	12.2			357	6.5	357	8.5			359	6.7	0	0.0	342	5.9	361	9.4		
17	0	0.0	279	6.3	294	14.6	0	0.0			297	6	0	0.0	334	6.1	400	6.8			365	6.5	300	10.6		
18			289	7.1	336	6.9			372	5.9	370	9.7			364	3.7	0	0.0			345	7.3	0	0.0		
19			318	4.2	368	12.0			365	5.4	0	6.7			432	4.5			332	ND	432	7.1				
20	325	6.3	0	0.0	0	0.0	300	8.5	358	5			361	6.8	0	4.0			320	ND	0	0.0				
21	325	5.8	0	0.0			288	10.0	457	4			364	8.7	0	3.9	322	6.8	362	6.4			393	9.4		
22	325	8.0					319	10.7	0	0.0	404	6.7	397	7.8		5.9	349	6.6	369	ND			343	12.6		
23	0	0.0			318	11.0	338	9.6			306	8.4	393	7.9		6.4	395	ND	0	ND	380	13.9	347	13.3		
24		0.0	385	4.5	315	12.2	0	0.0			331	7	0	0.0	331	5.2	403	8.7			399	11.7	412	12.2		
25			398	3.3	373	6.5			323	4.1	304	7.5			346	5.4	0	ND			429	9.3	0	0.0		
26			388	4.9	366	11.2			296	3	0	0.0			364	3.8			321	4.4	382	12.7				
27	299	6.0	0	0.0	0	0.0	352	5.7	318	13.8			357	8.7	404	5.1			321	7.1	0	0.0				
28	303	4.6	0	0.0			333	5.4	321	9.0			372	7.0	0	0.0	349	5.9	336	6.7			330	16.6		
29	267	8.1					326	8	0	0.0	328	6	351	6.9			344	6.7	346	5.9			381	24.0		
30	0	0.0			344	ND	399	9.1			317	6	449	7.3			321	5.9	0	0.0	358	12.0	327	18.5		
31	0	0.0			357	5.9							0	0.0									427	13.0		
<b>Ave</b>	202	3.3	198	3.7	298	7.1	287	7.1	278	5.7	281	6.7	282	5.6	275	5.4	286	4.8	265	3.3	304	6.4	284	10.3	270	5.8
<b>Min</b>	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.00
<b>Max</b>	397	8.7	398	15.7	478	16.7	447	24.6	457	13.8	404	28.6	449	9	441	11	414	8.7	372	11.3	432	13.9	427	24.0	478	29

## South Bay Wastewater Reclamation Plant 2009 BOD Percent Removal



— % REM BOD      ..... 2009 ANNUAL AVERAGE



## 2009 BOD Percent Removals

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	98.9	98.3	98.9	93.3		91.7	98.6	98.2	99.0		98.8	97.8	
2		98.7	98.2		97.6	97.5		97.8	98.6		98.6	96.6	
3		96.0	98.0		98.2	96.5		97.9		98.3	99.3		
4	99.1	98.1	98.0	97.3	97.9		98.4	97.6		98.2	98.9		
5	99.2	97.9		98.6	96.7		98.4	98.2	99.1	97.7		97.1	
6	99.2			99.1	98.0	99.3	98.1		98.3	98.2		95.6	
7	98.9		98.0	98.1		100	98.5		98.0	97.5	98.7	95.9	
8	98.3	98.5	98.0	98.6		100	98.2	98.4	98.5		98.1	96.5	
9		98.7	95.5		98.0	98.4		99.2	98.3		97.8	95.9	
10		99.1	98.2		97.9	98.2		98.2		97.8	98.1		
11	98.5	98.0	98.4	98.3	97.0		98.6	97.0		97.5	97.9		
12	99.1	97.6		98.1	98.6		97.7	98.5	98.4	97.0		96.1	
13	97.8			97.9	97.2	100	97.0		98.0	97.0		97.2	
14	98.4		96.8	98.5		100	97.2		97.3	97.6	98.6	97.3	
15	97.2	98.8	96.7	96.0		98.2	97.6	100	98.1		98.3	97.4	
16		98.7	95.0		98.5	97.9		98.2	98.3		98.2	96.5	
17		97.7	97.9		98.4	97.4		99.0		97.8	97.9		
18	98.7	97.6	96.7	98.7	98.5		97.1	99.0		97.8	98.4		
19	96.7	98.7		97.2	98.7		98.1		98.2	96.8		97.2	
20	98.1			96.5	99.1	98.0	97.6		97.9	98.2		97.6	
21	98.2		98.4	96.6		98.3	98.0		98.1	98.1	96.5	96.3	
22	97.5	99.0	96.5	97.2		97.2	98.0	98.2	98.3		96.3	96.2	
23		99.0	96.1		99.2	98.0		98.4	97.8		97.1	97.0	
24		98.8	98.3		98.7	97.5		98.4		98.4	97.8		
25	98.7	99.2	96.9	97.2	99.0		98.4	98.9		98.6	96.7		
26	97.8	98.8		98.4	95.7		97.6	98.8	98.9	97.8		95.2	
27	98.0			98.4	97.2	97.0	98.1		98.3	98.0		95.0	
28	98.5		97.9	97.4		98.1	98.0		98.0	98.3	97.2	93.7	
29	97.0	98.2	98.7	97.7		98.0	98.4	99.1	98.2		96.6	94.3	
30			98.4		95.8	97.5		98.5	98.2		97.2	97.0	
31			97.2		96.5			98.4		98.7			Annual Summary
<b>Average</b>	98.3	98.34	97.5	97.6	97.8	97.9	98.0	98.4	98.3	97.9	97.9	96.3	97.9
<b>Minimum</b>	96.7	96.03	95.0	93.3	95.7	91.7	97.0	97.0	97.3	96.8	96.3	93.7	91.7
<b>Maximum</b>	99.2	99.16	98.9	99.1	99.2	100	98.6	100	99.1	98.7	99.3	97.8	100

## F. Toxicity Bioassays

### Toxicity Testing: South Bay Water Reclamation Plant 2009

## INTRODUCTION

The City of San Diego's Toxicology Laboratory (CSDTL) conducted aquatic toxicity tests (bioassays) as required by its NPDES Permit No. CA0109045, Order No. R9-2006-0067 for the South Bay Water Reclamation Plant (SBWRP). The testing requirement is designed to determine the acute and chronic toxicity of effluent samples collected from the SBWRP. In accordance with the above Order, the City also conducts toxicity tests of combined effluent samples for the SBWRP and adjacent International Wastewater Treatment Plant (IWTP). This chapter presents summaries and discussion of all toxicity tests conducted in 2009.

Toxicity testing of wastewater effluent measures the bioavailability of toxicants in a complex mixture, accounts for interactions among potential toxicants, and integrates the effects of all constituents. Acute and chronic bioassays are characterized by the duration of exposure of test organisms to a toxicant as well as the adverse effect (measured response) produced as the result of exposure to a toxicant.

Acute toxicity testing consists of a short-term exposure period, usually 96 hours or less, and the acute effect refers to mortality of the test organism. The City of San Diego is required to conduct acute toxicity tests of SBWRP effluent on a quarterly schedule.

Chronic toxicity testing, in the classic sense, refers to long-term exposure of the test organism to a potential toxicant. This may involve exposing the test organism for its entire reproductive life cycle, which may exceed 12 months for organisms such as fish. In general, chronic tests are inherently more sensitive to toxicants than acute tests in that adverse effects are detected at lower toxicant concentrations. The City of San Diego is required to conduct monthly critical/early life stage chronic tests of SBWRP effluent that are intermediate between the acute and chronic toxicity testing protocols discussed above. These test results serve as short-term estimates of chronic toxicity.

## MATERIALS & METHODS

### Test Material

#### *SBWRP Effluent*

The acute toxicity tests were conducted on a quarterly schedule, while the chronic toxicity tests were conducted on a monthly schedule in 2009. Twenty-four hour, flow-weighted, effluent

composite samples were collected at the in-stream sampling site (designated SB\_Outfall\_00) for the SBWRP and stored at 4 °C until test initiation.

All toxicity tests were initiated within 36 hours of sample collection. Exposure concentrations consisted of 3.88, 7.75, 15.5, 31.0, and 62.0% (nominal) for the acute tests and 0.26, 0.53, 1.05, 2.10, and 4.20% for the chronic tests. Dilution water for all tests (effluent and reference toxicant) was obtained from the Scripps Institution of Oceanography (SIO), filtered, held at 4 °C, and used within 96 hours of collection. Detailed descriptions for all toxicity tests are provided in the City of San Diego Toxicology Laboratory Quality Assurance Manual (City of San Diego 2008).

### ***SBWRP/IWTP Combined Effluent***

The City also conducted chronic and acute toxicity tests of combined effluent from the SBWRP and IWTP in accordance with the quarterly testing schedule stated in Order No. R9-2006-0067. Composite samples for these bioassays were collected during the same 24-hour sampling period by SBWRP and IWTP personnel at their respective facilities and combined in the laboratory in accordance with a ratio that is proportional to the flow from each treatment plant at the time of sample collection.

The acute and chronic toxicity tests of combined effluent were both conducted quarterly in 2009. Effluent samples were stored at 4 °C and testing was initiated within 36 hours of sample collection. Acute toxicity test concentrations consisted of 3.88, 7.75, 15.5, 31.0, and 62.0% (nominal) effluent. Chronic toxicity test concentrations consisted of 0.26, 0.53, 1.05, 2.10, and 4.20%. Dilution water for all tests (effluent and reference toxicant) was obtained from SIO, filtered, held at 4 °C, and used within 96 hours of collection. Detailed methodology for all toxicity testing is described in the City of San Diego Toxicology Laboratory Quality Assurance Manual (City of San Diego 2008).

## **Acute Bioassays**

### ***Topsmelt Survival Bioassay***

The topsmelt acute bioassay was conducted in accordance with EPA/600/4-90/027F (USEPA 1993). Larval *Atherinops affinis* (9-14 days old) were purchased from Aquatic Bio Systems (Fort Collins, CO), and acclimated to test temperature and salinity for at least 24 hours. Upon test initiation, the topsmelt (10 per replicate) were exposed for 96 hours in a static-renewal system to the effluent exposure series. Dilution water and brine controls were also tested. The test solutions were renewed at 48 hours and the organisms were fed once each day.

Simultaneous reference toxicant testing was performed using reagent grade copper chloride. Test concentrations consisted of 56, 100, 180, 320, and 560 µg/L copper. Dilution water was obtained from SIO, filtered, held at 4 °C, and used within 96 hours of collection. Upon conclusion of the exposure period, percent survival was recorded. Tests were declared valid if control mortality did

not exceed 10%. The data were analyzed using a multiple comparison procedure and point estimation method prescribed by USEPA (1993). ToxCalc software (Tidepool Scientific Software 2002) was used for all statistical analyses.

## **Mysid Survival Bioassay**

The mysid acute bioassay was conducted in accordance with EPA/600/4-90/027F (USEPA 1993). Larval *Mysidopsis bahia* (4-5 days old) were purchased from Aquatic Bio Systems (Fort Collins, CO), and acclimated to test temperature and salinity for at least 24 hours. Upon test initiation, the mysids (10 per replicate) were exposed for 96 hours in a static-renewal system to the effluent exposure series. Dilution water and brine controls were also tested. The test solutions were renewed at 48 hours and the organisms were fed once daily.

Simultaneous reference toxicant testing was performed using reagent grade copper chloride. Test concentrations consisted of 56, 100, 180, 320, and 560 µg/L copper. A SIO seawater control was also tested. At the end of the exposure period, percent survival was recorded. Tests were declared valid if control mortality did not exceed 10%. The data were analyzed using a multiple comparison procedure and point estimation method prescribed by USEPA (1993). ToxCalc software (Tidepool Scientific Software 2002) was used for all statistical analyses.

## **Chronic Bioassays**

### ***Red Abalone Development Bioassay***

Chronic bioassays using the red abalone, *Haliotis rufescens*, were conducted in accordance with EPA/600/R-95/136 (USEPA 1995). Test organisms were purchased from Cultured Abalone (Goleta, California), and shipped via overnight delivery to the CSDTL. Mature male and female abalones were placed in separate natural seawater tanks and held at 15 °C. For each test event, spawning was induced in 6-8 abalones in gender-specific vessels. Eggs and sperm were retained and examined under magnification to ensure good quality. Once deemed acceptable, the sperm stock was used to fertilize the eggs, and a specific quantity of fertilized embryos was added to each test replicate and exposed to the effluent series for 48 hours. A receiving water control was also tested. At the end of the test period, 100 embryos were examined and the number of normally and abnormally developed embryos was recorded.

Simultaneous reference toxicant testing was performed using reagent grade zinc sulfate. The concentrations of zinc in the exposure series were 10, 18, 32, 56, and 100 µg/L. A SIO seawater control was also tested.

The percentage of normally developed embryos for each replicate was arcsine square root transformed. The data were analyzed in accordance with “Flowchart for statistical analysis of red abalone *Haliotis rufescens*, development data” (see USEPA 1995). ToxCalc software (Tidepool Scientific Software 2002) was used for all statistical analyses.

## RESULTS & DISCUSSION

### **Acute Toxicity of SBWRP Effluent**

In accordance with Order No. R9-2006-0067, the City initiated a biennial re-screening study in 2008 to re-evaluated the sensitivity of topsmelt and mysids. The re-screening effort was completed in the first quarter of 2009 and the results showed that the topsmelt continues to exhibit greater sensitivity to the SBWRP effluent. Therefore, the City will continue to use the topsmelt for routine monitoring of acute toxicity until the next scheduled re-screening event. All SBWRP effluent samples tested during the current reporting period were within NPDES permit performance goals (Table T.1).

### **Chronic Toxicity of SBWRP Effluent**

In accordance with Order No. R9-2006-0067, the City conducted monthly red abalone chronic toxicity tests using samples collected from SB\_Outfall\_00. All chronic toxicity tests in 2009 were within NPDES permit performance goals (Table T.2).

### **Toxicity of SBWRP/IWTP Combined Effluent**

The City also conducted chronic and acute bioassays for the SBWRP/IWTP combined effluent samples in accordance with the quarterly testing schedule stated in Order No. R9-2006-0067. Although this combined effluent testing is a requirement of the SBWRP monitoring program, there are no compliance limits or performance goals for these data.

During the first three quarters of 2009, the City conducted an acute re-screening study to compare the sensitivity of the mysid and topsmelt to the combined effluent. The results showed topsmelt to be most sensitive species to the acute combined effluent toxicity. Therefore, the City will use the topsmelt for subsequent monitoring. The results for all combined effluent bioassays performed in 2009 are summarized in Tables T.3 and T.4.

## REFERENCES

- City of San Diego. (2008). Quality Assurance Manual for Bioassay Testing. Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA
- Tidepool Scientific Software. (2002). ToxCalc Toxicity Information Management System Database Software
- USEPA. (1993). Methods for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fourth Edition. C.I. Weber (ed). Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH. EPA/600/4-90/027F
- USEPA. (1995). Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. Chapman, G.A., D.L. Denton, and J.M. Lazorchak (eds). Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH, EPA/600/R-95/136

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**Table T.1**

Results of acute toxicity tests of SBWRP effluent conducted quarterly in 2009. Data are presented as acute toxic units (TUa). The NPDES permit performance goal is 3.1 TUa.

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Sample Date	Sample Site	Topsmelt 96-Hour Survival	Mysid 96-Hour Survival
02/22/2009	SB_Outfall_00	<1.6	<1.6
04/05/2009	SB_Outfall_00	<1.6	-
08/09/2009	SB_Outfall_00	<1.6	-
12/13/2009	SB_Outfall_00	<1.6	-

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N		4	1
No. in compliance		4	1
Mean TUa		<1.6	<1.6

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**Table T.2**

Results of chronic toxicity testing of SBWRP effluent conducted monthly in 2009. Data are presented as chronic toxic units (TUc). NPDES permit performance goal is 95.6 TUc.

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Sample Date	Sample Site	Giant Kelp		Red Abalone	Topsmelt	
		Germination	Growth	Development	Survival	Growth
01/06/2009	SB_Outfall_00	-	-	23.8	-	-
02/10/2009	SB_Outfall_00	-	-	23.8	-	-
03/03/2009	SB_Outfall_00	-	-	23.8	-	-
04/14/2009	SB_Outfall_00	-	-	23.8	-	-
05/12/2009	SB_Outfall_00	-	-	23.8	-	-
06/14/2009	SB_Outfall_00	-	-	23.8	-	-
07/07/2009	SB_Outfall_00	-	-	23.8	-	-
08/04/2009	SB_Outfall_00	-	-	23.8	-	-
09/14/2009	SB_Outfall_00	-	-	23.8	-	-
10/20/2009	SB_Outfall_00	-	-	23.8	-	-
11/17/2009	SB_Outfall_00	-	-	23.8	-	-
12/08/2009	SB_Outfall_00	-	-	23.8	-	-
N		0	0	12	0	0
No. in compliance		-	-	12	-	-
Mean TUc		-	-	23.8	-	-

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**Table T.3**

Results of acute toxicity tests of SBWRP/IWTP combined effluent samples conducted in 2009. Data are presented as acute toxic units (TUa).

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Sample Date	Topsmelt 96-Hour Survival	Mysid 96-Hour Survival
01/11/2009	4.1	3.3
05/17/2009	4.5	4.6
07/12/2009	4.0	4.2
10/25/2009	3.4	-

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**Table T.4**

Results of chronic toxicity tests of SBWRP/IWTP combined effluent samples conducted in 2009. Data are presented as chronic toxic units (TUc).

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Sample Date	<u>Giant Kelp</u>		<u>Red Abalone</u>	<u>Topsmelt</u>	
	Germination	Growth	Development	Survival	Growth
02/10/2009	-	-	47.6	-	-
06/14/2009	-	-	47.6	-	-
09/14/2009	-	-	47.6	-	-
12/08/2009	-	-	47.6	-	-

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