II. Influent and Effluent Data Summary

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## A. Mass Emissions

Mass Emissions of Effluent Using 2012 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) | 2012 Mass Emissions (lbs/day)[1] | 2012 Average Concentration | Units |
|---|---|---|---|---|
| Flow (MGD) | | | **3.27** | MGD |
| **Total Suspended Solids** | 3,750 | **120** | **4.4** | mg/L |
| **BOD** | 3,750 | **191** | **7** | mg/L |
| Oil & Grease | 3,130 | 55 | 2 | mg/L |

**Effluent Limitations Based on 2005 California Ocean Plan**

| Constituent/Property | Limit: Daily Maximum (lbs/day) | 2012 Mass Emissions (lbs/day)[1] | 2012 Average Concentration | Units |
|---|---|---|---|---|
| Arsenic | 350 | 0.014 | 0.5 | ug/L |
| Cadmium | 48 | 0 | 0 | ug/L |
| Chromium | 96 | 0.008 | 0.3 | ug/L |
| Copper | 120 | 0.3 | 10 | ug/L |
| Lead | 96 | 0 | 0 | ug/L |
| Mercury | 1.9 | 0.00011 | 0.004 | ug/L |
| Nickel | 240 | 0.16 | 5.88 | ug/L |
| Selenium | 720 | 0.011 | 0.39 | ug/L |
| Silver | 32 | 0 | 0 | ug/L |
| Zinc | 860 | 0.8 | 30.7 | ug/L |
| Cyanide | 48 | 0.005 | 0.0002 | mg/L |
| Residual Chlorine | 96 | 1.1 | 0.04 | mg/L |
| Ammonia | 29,000 | 19.1 | 0.7 | mg/L |
| Non-Chor. Phenols | 1,400 | 0 | 0 | ug/L |
| Chlorinated Phenols | 48 | 0 | 0 | ug/L |
| Endosulfan | 0.21 | 0.00 | 0 | ng/L |
| Endrin | 0.05 | 0.00 | 0 | ng/L |
| hexachlorocyclohexanes*(HCH) | 0.1 | 0.0 | 0 | ng/L |

* (all as Lindane, the gamma isomer)

| Effluent Limitations Based on 2005 California Ocean Plan | | | | |
|---|---|---|---|---|
| **Constituent/Property** | **Limit: Daily Maximum (lbs/day)** | **2012 Mass Emissions (lbs/day)[1]** | **2012 Average Concentration** | **Units** |
| Acrolein | 2,600 | 0 | 0 | ug/L |
| Antimony | 14,000 | 0 | 0 | ug/L |
| Bis(2-chloroethoxy) methane | 53 | 0 | 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 | 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 | 0 | ug/L |
| 1,1,2,2-tetrachloroethane | 27 | 0 | 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 | 0.00000 | 0 | ng/L |
| Benzene | 71 | 0 | 0 | ug/L |
| Benzidine | 82,000 | 0 | 0 | ug/L |
| Beryllium | 0.39 | 0.000055 | 0.002 | ug/L |
| Bis(2-chloroethyl)ether | 0.54 | 0 | 0 | ug/L |
| Bis(2-ethylhexyl)phthalate | 42 | 0.076 | 2.8 | 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 | 0.8 | ug/L |
| DDT | 0.002 | 0.000 | 0 | ng/L |
| 1,4-dichlorobenzene | 210 | 0 | 0 | ug/L |
| 3,3-dichlorobenzidine | 0.097 | 0.000 | 0 | ug/L |
| 1,2-dichloroethane | 330 | 0 | 0 | ug/L |
| Dichlorobromomethane | 74 | 0.008 | 0.3 | ug/L |
| Dichloromethane (methylene chloride) | 5,400 | 0.003 | 0.1 | 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) | 2012 Mass Emissions (lbs/day)[1] | 2012 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 | 0.0000 | 0 | ng/L |
| Heptachlor epoxide | 0.00024 | 0.00000 | 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 | 0 | ug/L |
| N-nitrosodiphenylamine | 30 | 0 | 0 | ug/L |
| PAHs | 0.11 | 0.00 | 0 | ug/L |
| PCBs | 0.00023 | 0.00000 | 0 | ng/L |
| TCDD equivalents | 0.000000048 | 0.000000000 | 0 | pg/L |
| Tetrachloroethylene | 24 | 0 | 0 | ug/L |
| Toxaphene | 0.0025 | 0.0000 | 0 | ng/L |
| Trichloroethylene | 320 | 0 | 0 | ug/L |
| 2,4,6-trichlorophenol | 3.5 | 0.0 | 0 | ug/L |
| Vinyl Chloride | 430 | 0 | 0 | ug/L |

[1] 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 1st, 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($BOD_5$)@ 20°C | mg/L | | 30 | 45 | | 50 |
| | lb/day | | 3,750 | 5,630 | | 6,260 |
| Total Suspended Solids | mg/L | | 30 | 45 | | 50 |
| | lb/day | | 3,750 | 5,630 | | 6,260 |
| 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 | | 3,130 | 5,000 | | 9,380 |
| Settleable Solids | mL/L | | 1 | 1.5 | | 3 |
| Turbidity | NTU | | 75 | 100 | | 225 |
| Total Residual Chlorine(TRC) | mg/L | 0.19 | | | 0.76 | 5.7 |
| | lb/day | 24 | | | 96 | 720 |
| Copper, Total Recoverable | ug/L | 98 | | | 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 performace 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[2](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[3] | |
| 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 | | | |

2 Hexavalent Chromium limit met as Total Chromium.

3 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]

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)[4] | 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 |

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 | 0.000000047 |

[4] Chromium (III) limit is met by Total Chromium.

## 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 INFLUENT and EFFLUENT

Annual 2012

Biochemical Oxygen Demand Concentration
(24-hour composite)

| Month/ Units: | Influent Flow (MGD) | Daily Influent Value (mg/L) | Daily Influent Value (lbs/Day) | Effluent Flow (MGD) | Daily Effluent Value (mg/L) | Daily Effluent Value (lbs/Day) | Percent Removal BOD (%) |
|---|---|---|---|---|---|---|---|
| JANUARY -2012 | 7.95 | 296 | 19626 | 4.59 | 13 | 498 | 95.6 |
| FEBRUARY -2012 | 8.01 | 311 | 20776 | 5.11 | 10 | 426 | 96.8 |
| MARCH -2012 | 8.26 | 300 | 20667 | 5.15 | 7 | 301 | 97.7 |
| APRIL -2012 | 8.25 | 294 | 20229 | 4.25 | 5 | 177 | 98.3 |
| MAY -2012 | 8.25 | 297 | 20435 | 2.68 | 4 | 89 | 98.7 |
| JUNE -2012 | 8.01 | 324 | 21644 | 1.42 | 6 | 71 | 98.1 |
| JULY -2012 | 8.03 | 318 | 21297 | 1.00 | 9 | 75 | 97.2 |
| AUGUST -2012 | 8.16 | 325 | 22118 | 1.22 | 4 | 41 | 98.8 |
| SEPTEMBER-2012 | 8.00 | 315 | 21017 | 1.64 | 6 | 82 | 98.1 |
| OCTOBER -2012 | 7.86 | 322 | 21108 | 2.54 | 5 | 106 | 98.4 |
| NOVEMBER -2012 | 7.80 | 334 | 21727 | 3.78 | 4 | 126 | 98.8 |
| DECEMBER -2012 | 7.86 | 316 | 20715 | 5.81 | 6 | 291 | 98.1 |
| Average | 8.04 | 313 | 20947 | 3.27 | 7 | 190 | 97.9 |

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

ND=not detected
NA=not analyzed

SOUTH BAY WATER RECLAMATION PLANT
SEWAGE INFLUENT and EFFLUENT

Annual 2012

Total Suspended Solids Concentration
(24-hour composite)

| Month/ Units: | Influent Flow (MGD) | Daily Influent TSS (mg/L) | Daily Influent VSS (mg/L) | Percent VSS (%) | Daily Influent Mass Emission (lbs/Day) |
|---|---|---|---|---|---|
| JANUARY -2012 | 7.95 | 299 | 269 | 90.0 | 19825 |
| FEBRUARY -2012 | 8.01 | 287 | 259 | 90.2 | 19173 |
| MARCH -2012 | 8.26 | 292 | 262 | 89.7 | 20115 |
| APRIL -2012 | 8.25 | 287 | 258 | 89.9 | 19747 |
| MAY -2012 | 8.25 | 296 | 266 | 89.9 | 20366 |
| JUNE -2012 | 8.01 | 292 | 264 | 90.4 | 19507 |
| JULY -2012 | 8.03 | 284 | 253 | 89.1 | 19020 |
| AUGUST -2012 | 8.16 | 286 | 256 | 89.5 | 19464 |
| SEPTEMBER-2012 | 8.00 | 272 | 243 | 89.3 | 18148 |
| OCTOBER -2012 | 7.86 | 291 | 254 | 87.3 | 19076 |
| NOVEMBER -2012 | 7.80 | 282 | 248 | 87.9 | 18345 |
| DECEMBER -2012 | 7.86 | 283 | 254 | 89.8 | 18551 |
| Average | 8.04 | 288 | 257 | | 19278 |

Total Suspended Solids Concentration
(24-hour composite)

| Month/ Units: | 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 -2012 | 4.59 | 8.1 | 7.1 | 87.7 | 310 | 97.3 | 97.4 |
| FEBRUARY -2012 | 5.11 | 5.3 | 4.6 | 86.8 | 226 | 98.2 | 98.2 |
| MARCH -2012 | 5.15 | 5.0 | 4.1 | 82.0 | 215 | 98.3 | 98.4 |
| APRIL -2012 | 4.25 | 4.1 | 3.6 | 87.8 | 145 | 98.6 | 98.6 |
| MAY -2012 | 2.68 | 2.8 | 2.4 | 85.7 | 63 | 99.1 | 99.1 |
| JUNE -2012 | 1.42 | 5.4 | 4.7 | 87.0 | 64 | 98.2 | 98.2 |
| JULY -2012 | 1.00 | 5.3 | 4.6 | 86.8 | 44 | 98.1 | 98.2 |
| AUGUST -2012 | 1.22 | 4.8 | 4.1 | 85.4 | 49 | 98.3 | 98.4 |
| SEPTEMBER-2012 | 1.64 | 3.4 | 2.8 | 82.4 | 47 | 98.8 | 98.8 |
| OCTOBER -2012 | 2.54 | 2.3 | 2.0 | 87.0 | 49 | 99.2 | 99.2 |
| NOVEMBER -2012 | 3.78 | 2.8 | 2.4 | 85.7 | 88 | 99.0 | 99.0 |
| DECEMBER -2012 | 5.81 | 3.5 | 3.1 | 88.6 | 170 | 98.8 | 98.8 |
| Average | 3.27 | 4.4 | 3.8 | | 123 | 98.5 | 98.5 |

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

SOUTH BAY WATER RECLAMATION PLANT

Annual 2012

Effluent to Ocean Outfall
(SB_OUTFALL_01)

| Analyte: | Flow | pH | Settleable Solids | Biochemical Oxygen Demand | Total Suspended Solids | Volatile Suspended Solids | Total Dissolved Solids |
|---|---|---|---|---|---|---|---|
| Units: | (mgd) | (pH) | (ml/L) | (mg/L) | (mg/L) | (mg/L) | (mg/L) |
| JANUARY -2012 | 4.59 | 7.25 | ND | 13 | 8.1 | 7.1 | 926 |
| FEBRUARY -2012 | 5.11 | 7.29 | ND | 10 | 5.3 | 4.6 | 968 |
| MARCH -2012 | 5.15 | 7.29 | ND | 7 | 5.0 | 4.1 | 913 |
| APRIL -2012 | 4.25 | 7.29 | ND | 5 | 4.1 | 3.6 | 1000 |
| MAY -2012 | 2.68 | 7.35 | ND | 4 | 2.8 | 2.4 | 1030 |
| JUNE -2012 | 1.42 | 7.30 | ND | 6 | 5.4 | 4.7 | 995 |
| JULY -2012 | 1.00 | 7.46 | ND | 9 | 5.3 | 4.6 | 990 |
| AUGUST -2012 | 1.22 | 7.39 | ND | 4 | 4.8 | 4.1 | 1050 |
| SEPTEMBER-2012 | 1.64 | 7.46 | ND | 6 | 3.4 | 2.8 | 1030 |
| OCTOBER -2012 | 2.54 | 7.40 | ND | 5 | 2.3 | 2.0 | 984 |
| NOVEMBER -2012 | 3.78 | 7.32 | ND | 4 | 2.8 | 2.4 | 905 |
| DECEMBER -2012 | 5.81 | 7.38 | ND | 6 | 3.5 | 3.1 | 918 |
| Average | 3.27 | 7.35 | ND | 7 | 4.4 | 3.8 | 976 |

| Analyte: | Oil & Grease | Outfall Temperature | Residual Chlorine | Turbidity | Dissolved Oxygen |
|---|---|---|---|---|---|
| Units: | (mg/L) | (°C) | (mg/L) | (NTU) | (mg/L) |
| JANUARY -2012 | 2.8 | 22.9 | 0.05 | 3.24 | 1.73 |
| FEBRUARY -2012 | 3.5 | 22.1 | 0.03 | 2.69 | 1.79 |
| MARCH -2012 | 1.8 | 22.9 | 0.03 | 2.77 | 2.13 |
| APRIL -2012 | 1.9 | 23.4 | 0.05 | 2.37 | 2.50 |
| MAY -2012 | 2.2 | 24.4 | 0.06 | 1.68 | 2.66 |
| JUNE -2012 | <1.2 | 25.6 | 0.04 | 2.54 | 2.42 |
| JULY -2012 | 1.3 | 26.3 | 0.05 | 3.40 | 1.55 |
| AUGUST -2012 | 2.1 | 26.9 | 0.06 | 2.04 | 2.52 |
| SEPTEMBER-2012 | <1.2 | 27.2 | 0.04 | 2.08 | 2.00 |
| OCTOBER -2012 | 1.4 | 26.4 | 0.03 | 1.44 | 2.03 |
| NOVEMBER -2012 | 3.8 | 24.9 | 0.04 | 1.65 | 2.39 |
| DECEMBER -2012 | 3.4 | 23.6 | 0.05 | 2.22 | 3.10 |
| Average | 2.0 | 24.7 | 0.04 | 2.34 | 2.24 |

ND=not detected
NR=not required

SOUTH BAY WATER RECLAMATION PLANT

Annual 2012

Influent to Plant
(SB_INF_02)

| Analyte: | Flow | pH | Total Dissolved Solids | Biochemical Oxygen Demand | Total Suspended Solids | Volatile Suspended Solids | Turbidity |
|---|---|---|---|---|---|---|---|
| Units: | (mgd) | (pH) | (mg/L) | (mg/L) | (mg/L) | (mg/L) | (NTU) |
| JANUARY -2012 | 7.95 | NR | 992 | 296 | 299 | 269 | NR |
| FEBRUARY -2012 | 8.01 | 7.72 | 1020 | 311 | 287 | 259 | 140 |
| MARCH -2012 | 8.26 | NR | 973 | 300 | 292 | 262 | NR |
| APRIL -2012 | 8.25 | NR | 974 | 294 | 287 | 258 | 160 |
| MAY -2012 | 8.25 | 7.44 | 1020 | 297 | 296 | 266 | 155 |
| JUNE -2012 | 8.01 | NR | 982 | 324 | 292 | 264 | 160 |
| JULY -2012 | 8.03 | NR | 992 | 318 | 284 | 253 | 177 |
| AUGUST -2012 | 8.16 | 7.57 | 1020 | 325 | 286 | 256 | 168 |
| SEPTEMBER-2012 | 8.00 | NR | 1020 | 315 | 272 | 243 | 166 |
| OCTOBER -2012 | 7.86 | 7.88 | 962 | 322 | 291 | 254 | 155 |
| NOVEMBER -2012 | 7.80 | NR | 958 | 334 | 282 | 248 | 167 |
| DECEMBER -2012 | 7.86 | NR | 964 | 316 | 283 | 254 | 160 |
| Average | 8.04 | 7.65 | 990 | 313 | 288 | 257 | 161 |

ND=not detected
NR=not required

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL SEWAGE

Annual 2012

Trace Metals

| 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: | | | | | | 2800 |
| JANUARY -2012 | 627 | 82 | ND | ND | 0.8 | 0.5 |
| FEBRUARY -2012 | 536 | 135 | ND | ND | ND | 0.6 |
| MARCH -2012 | 564 | 336 | ND | ND | 0.8 | ND |
| APRIL -2012 | 711 | ND | ND | ND | 0.6 | 0.7 |
| MAY -2012 | 628 | 58 | ND | ND | ND | ND |
| JUNE -2012 | 1070 | 265 | ND | ND | 0.8 | 0.6 |
| JULY -2012 | 704 | 111 | ND | ND | 1.0 | 0.6 |
| AUGUST -2012 | 673 | 138 | ND | ND | 0.9 | 0.6 |
| SEPTEMBER-2012 | 795 | 128 | ND | ND | 0.9 | 0.6 |
| OCTOBER -2012 | 861 | 133 | 3.1 | ND | 0.9 | 0.5 |
| NOVEMBER -2012 | 581 | 127 | ND | ND | 0.6 | 0.5 |
| DECEMBER -2012 | 604 | 94 | ND | ND | 0.5 | 0.4 |
| AVERAGE | 696 | 134 | 0.3 | ND | 0.7 | 0.5 |

| 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: | | | | | | |
| JANUARY -2012 | 67.1 | 44.1 | ND | ND | 251 | 318 |
| FEBRUARY -2012 | 62.3 | 41.8 | ND | 0.025 | 264 | 261 |
| MARCH -2012 | 67.0 | 40.8 | ND | ND | 266 | 269 |
| APRIL -2012 | 77.0 | 43.3 | ND | ND | 316 | 307 |
| MAY -2012 | 69.8 | 45.1 | ND | ND | 292 | 327 |
| JUNE -2012 | 96.0 | 52.2 | ND | ND | 404 | 358 |
| JULY -2012 | 78.8 | 49.0 | ND | ND | 296 | 296 |
| AUGUST -2012 | 75.5 | 48.1 | ND | ND | 281 | 307 |
| SEPTEMBER-2012 | 71.8 | 44.6 | ND | ND | 290 | 310 |
| OCTOBER -2012 | 71.1 | 46.2 | ND | ND | 271 | 297 |
| NOVEMBER -2012 | 62.3 | 42.4 | ND | ND | 241 | 274 |
| DECEMBER -2012 | 76.3 | 43.6 | ND | ND | 297 | 165 |
| AVERAGE | 72.9 | 45.1 | ND | 0.002 | 289 | 291 |

| Analyte: | Cadmium | Cadmium | Chromium | Chromium | Cobalt | Cobalt |
|---|---|---|---|---|---|---|
| MAX MDL Units: | .53 UG/L | .53 UG/L | 1.2 UG/L | 1.2 UG/L | .85 UG/L | .85 UG/L |
| Source: | Influent | Effluent | Influent | Effluent | Influent | Effluent |
| Month/Limit: | | 48 | | 760 | | |
| JANUARY -2012 | ND | ND | 3.7 | ND | NR | ND |
| FEBRUARY -2012 | ND | ND | 4.2 | ND | ND | ND |
| MARCH -2012 | ND | ND | 3.5 | ND | NR | ND |
| APRIL -2012 | ND | ND | 3.2 | ND | NR | ND |
| MAY -2012 | ND | ND | 3.2 | ND | ND | ND |
| JUNE -2012 | ND | ND | 4.0 | ND | NR | ND |
| JULY -2012 | ND | ND | 2.7 | ND | ND | ND |
| AUGUST -2012 | ND | ND | 2.9 | 1.3 | ND | ND |
| SEPTEMBER-2012 | ND | ND | 2.3 | ND | NR | ND |
| OCTOBER -2012 | ND | ND | 2.5 | ND | ND | ND |
| NOVEMBER -2012 | ND | ND | 3.5 | ND | NR | ND |
| DECEMBER -2012 | 0.80 | ND | 3.0 | 1.7 | NR | ND |
| AVERAGE | 0.07 | ND | 3.2 | 0.3 | ND | ND |

ND= not detected; NR= not required

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL SEWAGE

Annual 2012

Trace Metals

| 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: | | 960 | | | | 760 |
| JANUARY -2012 | 73 | 16 | 621 | 81 | ND | ND |
| FEBRUARY -2012 | 78 | 9 | 476 | ND | ND | ND |
| MARCH -2012 | 71 | 9 | 477 | ND | ND | ND |
| APRIL -2012 | 104 | 10 | 575 | ND | ND | ND |
| MAY -2012 | 68 | 9 | 698 | ND | ND | ND |
| JUNE -2012 | 97 | 10 | 1070 | 174 | ND | ND |
| JULY -2012 | 266 | 18 | 679 | 72 | 4.7 | ND |
| AUGUST -2012 | 78 | 8 | 618 | 52 | 2.8 | ND |
| SEPTEMBER-2012 | 81 | 9 | 752 | 49 | 2.0 | ND |
| OCTOBER -2012 | 99 | 7 | 856 | 38 | 2.4 | ND |
| NOVEMBER -2012 | 84 | 8 | 598 | 70 | 4.0 | ND |
| DECEMBER -2012 | 95 | 9 | 718 | 42 | ND | ND |
| AVERAGE | 100 | 10 | 678 | 48 | 1.3 | ND |

| Analyte: | Manganese | Manganese | Mercury | Mercury | Molybdenum | Molybdenum |
|---|---|---|---|---|---|---|
| MAX MDL Units: | .24 UG/L | .24 UG/L | .005 UG/L | .005 UG/L | .89 UG/L | .89 UG/L |
| Source: | Influent | Effluent | Influent | Effluent | Influent | Effluent |
| Month/Limit: | | | | 15.00 | | |
| JANUARY -2012 | 91.4 | 44.7 | 0.154 | 0.004* | NR | 3.0 |
| FEBRUARY -2012 | 79.0 | 73.6 | 0.158* | 0.005* | 5.0 | 2.9 |
| MARCH -2012 | 78.7 | 25.3 | 0.116* | 0.008* | NR | 3.9 |
| APRIL -2012 | 84.8 | 24.2 | 0.122* | 0.004* | NR | 8.5 |
| MAY -2012 | 86.7 | 14.0 | 0.160* | 0.006* | 5.2 | 3.0 |
| JUNE -2012 | 105 | 36.0 | 0.056* | 0.001* | NR | 4.8 |
| JULY -2012 | 77.6 | 50.4 | 0.121* | 0.002* | 5.7 | 4.2 |
| AUGUST -2012 | 62.2 | 16.1 | 0.091* | 0.001* | 5.5 | 2.9 |
| SEPTEMBER-2012 | 62.6 | 18.1 | 0.242 | 0.006 | NR | 3.4 |
| OCTOBER -2012 | 63.6 | 38.4 | 0.218 | ND | 5.5 | 3.3 |
| NOVEMBER -2012 | 63.3 | 34.6 | 0.180* | 0.004* | NR | 2.5 |
| DECEMBER -2012 | 86.4 | 19.0 | 0.182* | 0.004* | NR | 2.9 |
| AVERAGE | 78.4 | 32.9 | 0.149 | 0.004 | 5.4 | 3.8 |

*= In these months the mercury was performed using the method detection limit of 0.0005 UG/L.

ND= not detected
NR= not required

ANNUAL SEWAGE

Annual 2012

Trace Metals

| Analyte: | Nickel | Nickel | Selenium | Selenium | Silver | Silver |
|---|---|---|---|---|---|---|
| MAX MDL Units: | .53 UG/L | .53 UG/L | .28 UG/L | .28 UG/L | .4 UG/L | .4 UG/L |
| Source: | Influent | Effluent | Influent | Effluent | Influent | Effluent |
| Month/Limit: | | 1900 | | 5700 | | 250 |
| JANUARY -2012 | 6.37 | 7.73 | 0.63 | 0.37 | 0.5 | ND |
| FEBRUARY -2012 | 6.62 | 6.98 | 0.84 | 0.48 | ND | ND |
| MARCH -2012 | 6.09 | 5.60 | 1.18 | ND | 0.5 | ND |
| APRIL -2012 | 7.35 | 4.67 | 0.80 | 0.39 | 0.8 | ND |
| MAY -2012 | 5.69 | 4.63 | 0.77 | 0.48 | ND | ND |
| JUNE -2012 | 8.59 | 6.69 | 1.31 | 0.57 | ND | ND |
| JULY -2012 | 61.60 | 6.24 | 1.29 | 0.58 | 0.5 | ND |
| AUGUST -2012 | 18.70 | 7.32 | 1.47 | 0.46 | 1.3 | ND |
| SEPTEMBER-2012 | 6.48 | 5.83 | 1.47 | ND | 0.4 | ND |
| OCTOBER -2012 | 5.72 | 5.96 | 1.19 | 0.46 | ND | ND |
| NOVEMBER -2012 | 6.29 | 3.76 | 0.82 | 0.47 | 0.7 | ND |
| DECEMBER -2012 | 11.50 | 5.13 | 1.19 | 0.40 | 1.4 | ND |
| AVERAGE | 12.58 | 5.88 | 1.08 | 0.39 | 0.5 | ND |

| 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: | | | | | | 6900 |
| JANUARY -2012 | ND | ND | NR | 1.43 | 146 | 37.2 |
| FEBRUARY -2012 | ND | ND | 1.7 | 0.72 | 123 | 22.0 |
| MARCH -2012 | ND | ND | NR | 1.12 | 191 | 25.0 |
| APRIL -2012 | ND | ND | NR | 1.09 | 187 | 31.2 |
| MAY -2012 | ND | ND | 2.8 | 1.68 | 139 | 30.1 |
| JUNE -2012 | ND | ND | NR | 0.79 | 179 | 34.6 |
| JULY -2012 | ND | ND | 2.1 | 0.65 | 193 | 22.4 |
| AUGUST -2012 | 4.5 | ND | 1.8 | 1.19 | 154 | 34.6 |
| SEPTEMBER-2012 | ND | ND | NR | 0.64 | 159 | 37.2 |
| OCTOBER -2012 | ND | ND | 2.4 | 1.12 | 150 | 23.8 |
| NOVEMBER -2012 | 4.9 | ND | NR | 0.85 | 167 | 32.8 |
| DECEMBER -2012 | ND | ND | NR | 1.00 | 166 | 37.6 |
| AVERAGE | 0.8 | ND | 2.2 | 1.02 | 163 | 30.7 |

^= Total recoverable thallium.

ND= not detected
NR= not required

SOUTH BAY WATER RECLAMATION PLANT
Annual Sewage Cations

ANNUAL 2012

| Analyte: | Calcium | | Magnesium | | Lithium | |
|---|---|---|---|---|---|---|
| MDL/Units: | .04 mg/L | | .1 mg/L | | .002 mg/L | |
| Source: | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT |
| JANUARY -2012 | 64.6 | 66.2 | 29.9 | 29.5 | 0.022 | 0.021 |
| FEBRUARY -2012 | 72.6 | 73.3 | 37.1 | 36.1 | 0.023 | 0.021 |
| MARCH -2012 | 66.4 | 70.0 | 33.4 | 33.7 | 0.025 | 0.023 |
| APRIL -2012 | 67.7 | 71.9 | 33.8 | 33.2 | 0.024 | 0.022 |
| MAY -2012 | 58.4 | 60.5 | 27.6 | 28.3 | 0.026 | 0.026 |
| JUNE -2012 | 64.1 | 65.5 | 29.9 | 29.5 | 0.030 | 0.026 |
| JULY -2012 | 64.2 | 66.2 | 30.4 | 30.5 | 0.027 | 0.028 |
| AUGUST -2012 | 62.3 | 63.1 | 29.1 | 28.5 | 0.031 | 0.030 |
| SEPTEMBER-2012 | 56.7 | 61.2 | 30.0 | 31.4 | 0.021 | 0.025 |
| OCTOBER -2012 | 60.2 | 59.2 | 31.5 | 30.0 | 0.031 | 0.025 |
| NOVEMBER -2012 | 55.6 | 58.2 | 28.5 | 29.4 | 0.028 | 0.025 |
| DECEMBER -2012 | 65.1 | 63.8 | 34.6 | 33.4 | 0.024 | 0.024 |
| Average: | 63.2 | 64.9 | 31.3 | 31.1 | 0.026 | 0.025 |

| Analyte: | Sodium | | Potassium | |
|---|---|---|---|---|
| MDL/Units: | 1 mg/L | | .3 mg/L | |
| Source: | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT |
| JANUARY -2012 | 186 | 194 | 19.4 | 17.9 |
| FEBRUARY -2012 | 208 | 213 | 19.1 | 18.5 |
| MARCH -2012 | 195 | 202 | 18.3 | 17.9 |
| APRIL -2012 | 193 | 200 | 18.9 | 18.6 |
| MAY -2012 | 158 | 169 | 16.9 | 15.8 |
| JUNE -2012 | 174 | 189 | 18.2 | 17.2 |
| JULY -2012 | 177 | 195 | 18.1 | 17.8 |
| AUGUST -2012 | 172 | 179 | 18.6 | 17.1 |
| SEPTEMBER-2012 | 172 | 185 | 17.0 | 17.1 |
| OCTOBER -2012 | 178 | 184 | 18.4 | 16.5 |
| NOVEMBER -2012 | 176 | 184 | 18.3 | 17.3 |
| DECEMBER -2012 | 206 | 207 | 20.9 | 19.3 |
| Average: | 183 | 192 | 18.5 | 17.6 |

ND=not detected
INF= Influent
EFF= Effluent

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL SEWAGE

Anions

Annual 2012

| 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 |
| Source: | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT |
| JANUARY -2012 | 0.5 | 0.6 | 270 | 249 | 0.55 | 0.93 |
| FEBRUARY -2012 | 0.5 | 0.7 | 276 | 295 | 0.53 | 0.84 |
| MARCH -2012 | 0.5 | 0.6 | 266 | 284 | 0.56 | 0.66 |
| APRIL -2012 | 0.5 | 0.5 | 255 | 266 | 0.48 | 0.57 |
| MAY -2012 | 0.5 | 0.5 | 258 | 262 | 0.55 | 0.77 |
| JUNE -2012 | 0.4 | 0.5 | 249 | 273 | 0.33 | 0.54 |
| JULY -2012 | 0.5 | 0.4 | 241 | 264 | 0.52 | 0.60 |
| AUGUST -2012 | 0.4 | 0.5 | 236 | 246 | 0.56 | 0.65 |
| SEPTEMBER-2012 | 0.4 | 0.5 | 248 | 257 | 0.61 | 0.56 |
| OCTOBER -2012 | 0.4 | 0.4 | 244 | 250 | 0.55 | 0.70 |
| NOVEMBER -2012 | 0.4 | 0.4 | 250 | 252 | 0.39 | 0.71 |
| DECEMBER -2012 | 0.4 | 0.5 | 252 | 258 | 0.51 | 0.58 |
| AVERAGE | 0.5 | 0.5 | 254 | 263 | 0.51 | 0.68 |

| 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 |
| Source: | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT |
| JANUARY -2012 | 0.21 | 37.9 | 10.5 | 4.6 | 131 | 137 |
| FEBRUARY -2012 | 0.16 | 28.9 | 10.3 | 4.1 | 135 | 164 |
| MARCH -2012 | 0.20 | 30.8 | 10.3 | 5.0 | 128 | 166 |
| APRIL -2012 | 0.21 | 31.9 | 10.0 | 5.3 | 119 | 151 |
| MAY -2012 | 0.22 | 39.3 | 10.6 | 7.5 | 129 | 153 |
| JUNE -2012 | 0.13 | 41.4 | 10.8 | 5.2 | 126 | 164 |
| JULY -2012 | 0.31 | 20.7 | 10.8 | 7.8 | 123 | 164 |
| AUGUST -2012 | 0.74 | 41.4 | 10.8 | 5.6 | 115 | 154 |
| SEPTEMBER-2012 | 0.12 | 44.9 | 10.8 | 8.0 | 106 | 149 |
| OCTOBER -2012 | 1.15 | 21.5 | 10.1 | 1.5 | 107 | 140 |
| NOVEMBER -2012 | 0.63 | 39.4 | 10.7 | 3.0 | 109 | 127 |
| DECEMBER -2012 | 0.92 | 36.6 | 10.9 | 5.6 | 106 | 140 |
| AVERAGE | 0.42 | 34.6 | 10.6 | 5.3 | 120 | 151 |

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

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL SEWAGE

Ammonia-Nitrogen and Total Cyanides

Annual 2012

| Analyte: | Ammonia-N | Ammonia-N | Total Cyanides | Total Cyanides |
|---|---|---|---|---|
| MDL/Units: | .3 MG/L | .3 MG/L | .002 MG/L | .002 MG/L |
| Source: | INFLUENT | EFFLUENT | INFLUENT | EFFLUENT |
| JANUARY -2012 | 35.1 | 1.8 | ND | ND |
| FEBRUARY -2012 | 32.3 | 2.7 | ND | ND |
| MARCH -2012 | 36.2 | 0.3 | ND | ND |
| APRIL -2012 | 33.0 | ND | ND | ND |
| MAY -2012 | 34.8 | ND | ND | ND |
| JUNE -2012 | 36.1 | ND | ND | ND |
| JULY -2012 | 37.1 | 0.6 | ND | 0.002 |
| AUGUST -2012 | 36.5 | ND | 0.003 | ND |
| SEPTEMBER-2012 | 38.5 | ND | ND | ND |
| OCTOBER -2012 | 35.2 | 2.5 | ND | ND |
| NOVEMBER -2012 | 39.2 | ND | ND | ND |
| DECEMBER -2012 | 38.1 | ND | ND | ND |
| Average: | 36.0 | 0.7 | 0.0003 | 0.0002 |

ND= not detected
NA= not analyzed

SOUTH BAY WATER RECLAMATION PLANT
Radioactivity
Effluent to the Ocean (SB_OUTFALL_01)

Analyzed by: TestAmerica Laboratories Richland

Annual 2012

| Month | Gross Alpha Radiation | Gross Beta Radiation |
|---|---|---|
| JANUARY -2012 | 1.0 ± 4.2 | 21.3 ± 5.2 |
| FEBRUARY -2012 | -2.1 ± 3.8 | 21.7 ± 5.8 |
| MARCH -2012 | 1.2 ± 3.3 | 19.8 ± 3.7 |
| APRIL -2012 | 0.7 ± 3.1 | 17.9 ± 3.8 |
| MAY -2012 | 3.9 ± 3.9 | 18.3 ± 7.5 |
| JUNE -2012 | 3.3 ± 4.1 | 14.0 ± 7.4 |
| JULY -2012 | 2.8 ± 3.1 | 22.2 ± 4.7 |
| AUGUST -2012 | 0.1 ± 2.8 | 17.5 ± 4.5 |
| SEPTEMBER-2012 | 1.5 ± 3.3 | 17.9 ± 4.9 |
| OCTOBER -2012 | -1.0 ± 3.4 | 19.0 ± 3.7 |
| NOVEMBER -2012 | 5.1 ± 3.8 | 20.8 ± 4.6 |
| DECEMBER -2012 | -4.0 ± 4.3 | 22.2 ± 5.5 |
| AVERAGE | 1.0 ± 3.6 | 19.4 ± 5.1 |

Units in picocuries/liter (pCi/L)

SOUTH BAY WATER RECLAMATION PLANT
SEWAGE ANNUAL- Chlorinated Pesticide Analysis

Annual 2012

| Source: | | | EFF | EFF | EFF | EFF | EFF | EFF | EFF | EFF | EFF | EFF | EFF | EFF | EFF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: | | | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC* | |
| Analyte | MDL | Units | | | | | | | | | | | | | Avg |
| ========================= | ==== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| Aldrin | 7 | NG/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dieldrin | 8 | NG/L | 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 |
| BHC, Beta isomer | 6 | NG/L | 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 |
| BHC, Delta isomer | 4 | NG/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| p,p-DDD | 4 | NG/L | 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 |
| p,p-DDT | 8 | NG/L | 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 |
| o,p-DDE | 5 | NG/L | 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 |
| Heptachlor | 8 | NG/L | 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 |
| Alpha (cis) Chlordane | 3 | NG/L | 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 |
| Alpha Chlordene | | NG/L | 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 |
| Oxychlordane | 6 | NG/L | 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 |
| Cis Nonachlor | 5 | NG/L | 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 |
| Beta Endosulfan | 5 | NG/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Endosulfan Sulfate | 6 | NG/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Endrin | 8 | NG/L | 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 |
| Mirex | 10 | NG/L | 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 |
| Toxaphene | 330 | NG/L | 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 |
| PCB 1221 | 4000 | NG/L | 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 |
| PCB 1242 | 4000 | NG/L | 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 |
| PCB 1254 | 2000 | NG/L | 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 |
| PCB 1262 | 930 | NG/L | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| ========================= | ==== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| Aldrin + Dieldrin | 8 | NG/L | 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 |
| DDT and derivatives | 8 | NG/L | 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 |
| Polychlorinated biphenyls | 4000 | NG/L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Endosulfans | 6 | NG/L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ========================= | ==== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| Heptachlors | 8 | NG/L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ========================= | ==== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| Chlorinated Hydrocarbons | 4000 | NG/L | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*= This sample was extracted approximately 10 hours after the holding time.

ND=not detected
NA=not analyzed
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

Annual 2012

| Analyte | MDL | Units | INF FEB | INF MAY | INF AUG | INF OCT | INF Avg |
|---|---|---|---|---|---|---|---|
| Aldrin | 7 | NG/L | ND | ND | ND | ND | ND |
| Dieldrin | 8 | NG/L | ND | ND | ND | ND | ND |
| BHC, Alpha isomer | 7 | NG/L | ND | ND | ND | ND | ND |
| BHC, Beta isomer | 6 | NG/L | ND | ND | ND | ND | ND |
| BHC, Gamma isomer | 5 | NG/L | ND | ND | ND | ND | ND |
| BHC, Delta isomer | 4 | NG/L | ND | ND | ND | ND | ND |
| p,p-DDD | 4 | NG/L | ND | ND | ND | ND | ND |
| p,p-DDE | 4 | NG/L | ND | ND | ND | 4 | 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 | 5 | NG/L | ND | ND | ND | ND | ND |
| Alpha Endosulfan | 4 | NG/L | ND | ND | ND | ND | ND |
| Beta Endosulfan | 5 | NG/L | ND | ND | ND | ND | ND |
| Endosulfan Sulfate | 6 | NG/L | ND | ND | ND | ND | ND |
| Endrin | 8 | 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 | 8 | NG/L | 0 | 0 | 0 | 0 | 0 |
| Hexachlorocyclohexanes | 7 | NG/L | 0 | 0 | 0 | 0 | 0 |
| DDT and derivatives | 8 | NG/L | 0 | 0 | 0 | 4 | 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 | 0 | 4 | 1 |

ND=not detected
NA=not analyzed
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 PesticidesEPA Method 614/622 (with additions)

INFLUENT & EFFLUENT

Annual 2012

| Source: | | | Effluent | Effluent | Influent | Influent |
|---|---|---|---|---|---|---|
| Date: | | | 01-MAY-2012 | 02-OCT-2012 | 01-MAY-2012 | 02-OCT-2012 |
| Analyte | MDL | Units | P614092 | P634422 | P614087 | P634417 |
| 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 | ND |
| Disulfoton | .02 | UG/L | ND | ND | ND | ND |
| Dimethoate | .04 | UG/L | ND | ND | ND | ND |
| Stirophos | .03 | UG/L | ND | ND | ND | ND |
| Coumaphos | .15 | 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 | .15 | UG/L | 0.0 | 0.0 | 0.0 | 0.0 |

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL SEWAGE – Tributyl Tin Analysis

Annual 2012

| Source: | | | EFF | EFF | EFF | EFF | |
|---|---|---|---|---|---|---|---|
| Date: | | | FEB | MAY | AUG | OCT | |
| Analyte | MDL | Units | | | | | Average |
| 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 |

| Source: | | | INF | INF | INF | INF | |
|---|---|---|---|---|---|---|---|
| Date: | | | FEB | MAY | AUG | OCT | |
| Analyte | MDL | Units | | | | | Average |
| 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
EFF= Effluent
INF= Influent

SOUTH BAY WATER RECLAMATION PLANT
SEWAGE ANNUAL - Acid Extractables

Annual 2012

Source: EFFLUENT

| Analyte | MDL | Units | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | AVG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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

| Analyte | MDL | Units | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | AVG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

Source: INFLUENT

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | AVG |
|---|---|---|---|---|---|---|---|
| 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 | 42.5 | 31.4 | 40.2 | 40.5 | 38.7 |
| 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 | 42.5 | 31.4 | 40.2 | 40.5 | 38.7 |
| Total Phenols | 2.16 | UG/L | 42.5 | 31.4 | 40.2 | 40.5 | 38.7 |

Additional analytes determined

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | AVG |
|---|---|---|---|---|---|---|---|
| 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 | 118 | 91.7 | 93.6 | 95.2 | 99.6 |
| 2,4,5-Trichlorophenol | 1.66 | UG/L | ND | ND | ND | ND | ND |

ND=not detected
NA=not analyzed

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

Annual 2012

Source: EFFLUENT

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | 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 | 11.2 | ND | ND | ND | 2.8 |
| 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 | 11.2 | 0.0 | 0.0 | 0.0 | 2.8 |

Additional analytes determined

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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

Annual 2012

Source: INFLUENT

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | 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 | 10.0 | 5.7 | 8.6 | 7.0 | 7.8 |
| 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 | 22.5 | ND | 23.7 | 10.5 | 14.2 |
| 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 | 32.5 | 5.7 | 32.3 | 17.5 | 22.0 |

Additional analytes determined

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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

Annual 2012

Source: EFFLUENT

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | AVG |
|---|---|---|---|---|---|---|---|
| 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 | ND | 0.3 | ND | 0.1 |
| 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 | 0.4 | 1.7 | 0.7 | 0.4 | 0.8 |
| 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 | ND | 1.0 | ND | ND | 0.3 |
| 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 | <0.6 | ND | ND | 0.0 |
| 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 | ND | ND | ND | ND |
| 1,2-Dichlorobenzene | .4 | UG/L | ND | ND | ND | ND | ND |
| 1,2,4-Trichlorobenzene | 1.52 | 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 | 0.4 | 1.7 | 1.0 | 0.4 | 0.9 |
| Purgeable Compounds | 1.3 | UG/L | 0.4 | 2.7 | 1.0 | 0.4 | 1.1 |

Additional analytes determined

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | AVG |
|---|---|---|---|---|---|---|---|
| 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 |

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT
SEWAGE ANNUAL Priority Pollutants Purgeables

Annual 2012

Source: INFLUENT

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | AVG |
|---|---|---|---|---|---|---|---|
| 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 | 0.6 | 1.0 | 0.9 | 9.0 | 2.9 |
| 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 | 1.2 | 2.3 | 1.7 | 12.0 | 4.3 |
| 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 | ND | ND | ND | ND | ND |
| 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 | 1.3 | 0.8 | 0.7 | 0.9 |
| 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 | 5.6 | ND | ND | ND | 1.4 |
| 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 | 0.5 | 0.9 | 0.9 | 0.8* | 0.8 |
| 1,2-Dichlorobenzene | .4 | UG/L | ND | ND | ND | ND | ND |
| 1,2,4-Trichlorobenzene | 1.52 | 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 | 1.8 | 3.3 | 2.6 | 21.0 | 7.2 |
| Purgeable Compounds | 1.3 | UG/L | 8.5 | 5.5 | 4.3 | 21.7 | 10.0 |

Additional analytes determined

| Analyte | MDL | Units | FEB | MAY | AUG | OCT | AVG |
|---|---|---|---|---|---|---|---|
| Methyl Iodide | .6 | UG/L | ND | ND | ND | ND | ND |
| Carbon disulfide | .6 | UG/L | 1.3 | 1.7 | 2.3 | 1.8 | 1.8 |
| Acetone | 4.5 | UG/L | 332 | 453 | 291 | 195 | 318 |
| 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 | 6.5 | 10.9 | 10.1 | 6.4 | 8.5 |
| 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 |

*= Blank did not meet QC criteria for this analyte due to contamination. The result value of the blank in this batch was 0.44 UG/L, result above the MDL. Result is not used in computations.

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT
Annual Sewage Dioxin and Furan Analysis

Annual 2012

| Source: | | | | INF | INF | INF | INF |
|---|---|---|---|---|---|---|---|
| | | | | JAN | FEB | MAR | APR |
| Analyte | MDL | Units | Equiv | P601833 | P602860 | P609204 | P612409 |
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | 27.2 | 90.6 | DNQ23.7 | DNQ22.4 |
| octa CDD | 1.41 | PG/L | 0.001 | 340 | 660 | 300 | 270 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | DNQ2.33 | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | 4.61 | DNQ4.01 | DNQ4.11 | DNQ4.1 |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | 23 | DNQ12 | DNQ14.1 | DNQ13.3 |

| Source: | | | | INF | INF | INF | INF |
|---|---|---|---|---|---|---|---|
| | | | | MAY | JUN | JUL | AUG |
| Analyte | MDL | Units | Equiv | P614087 | P620069 | P623996 | P626993 |
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | DNQ14.8 | DNQ15.8 | DNQ18.4 | DNQ19.3 |
| octa CDD | 1.41 | PG/L | 0.001 | 260 | 150 | 240 | 160 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | DNQ2.07 | DNQ1.48 |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | DNQ3.02 | ND | DNQ4.72 | DNQ4.14 |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | DNQ9.53 | DNQ8.42 | DNQ14.2 | DNQ7.69 |

| Source: | | | | INF | INF | INF | INF |
|---|---|---|---|---|---|---|---|
| | | | | SEP | OCT | NOV | DEC |
| Analyte | MDL | Units | Equiv | P631911 | P634417 | P638904 | P642243 |
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | 24.5 | 25.6 | DNQ19.0 | DNQ13.8 |
| octa CDD | 1.41 | PG/L | 0.001 | 220 | 160 | 210 | 140 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | DNQ3.46 | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | DNQ3.71 | ND | DNQ3.89 | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | DNQ9.69 | DNQ8.47 | DNQ10.9 | DNQ6.47 |

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Annual Sewage Dioxin and Furan Analysis

Annual 2012

| Analyte | MDL | Units | Equiv | EFF JAN P601836 | EFF FEB P602865 | EFF MAR P609208 | EFF APR P612413 |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDD | 1.41 | PG/L | 0.001 | DNQ11.7 | DNQ8.45 | DNQ7.68 | DNQ8.01 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | ND | ND | ND | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | ND | ND | ND | ND |

| Analyte | MDL | Units | Equiv | EFF MAY P614092 | EFF JUN P620073 | EFF JUL P623999 | EFF AUG P626998 |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDD | 1.41 | PG/L | 0.001 | DNQ6.53 | ND | DNQ8.69 | ND |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | ND | ND | ND | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | ND | ND | ND | ND |

| Analyte | MDL | Units | Equiv | EFF SEP P631915 | EFF OCT P634422 | EFF NOV P638908 | EFF DEC P642247 |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDD | 1.41 | PG/L | 0.001 | DNQ7.24 | ND | DNQ6.19 | ND |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | ND | ND | ND | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | ND | ND | ND | ND |

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Annual Sewage Dioxin and Furan Analysis

Annual 2012

| Analyte | MDL | Units | Equiv | INF TCCD JAN P601833 | INF TCCD FEB P602860 | INF TCCD MAR P609204 | INF TCCD APR P612409 |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | 0.272 | 0.906 | DNQ0.237 | DNQ0.224 |
| octa CDD | 1.41 | PG/L | 0.001 | 0.340 | 0.660 | 0.300 | 0.270 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | DNQ0.233 | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | 0.046 | DNQ0.040 | DNQ0.041 | DNQ0.041 |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | 0.023 | DNQ0.012 | DNQ0.014 | DNQ0.013 |

| Analyte | MDL | Units | Equiv | INF TCCD MAY P614087 | INF TCCD JUN P620069 | INF TCCD JUL P623996 | INF TCCD AUG P626993 |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | DNQ0.148 | DNQ0.158 | DNQ0.184 | DNQ0.193 |
| octa CDD | 1.41 | PG/L | 0.001 | 0.26 | 0.15 | 0.24 | 0.16 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | DNQ0.207 | DNQ0.148 |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | DNQ0.030 | ND | DNQ0.047 | DNQ0.041 |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | DNQ0.010 | DNQ0.008 | DNQ0.014 | DNQ0.008 |

| Analyte | MDL | Units | Equiv | INF TCCD SEP P631911 | INF TCCD OCT P634417 | INF TCCD NOV P638904 | INF TCCD DEC P642243 |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | 0.245 | 0.256 | DNQ0.190 | DNQ0.138 |
| octa CDD | 1.41 | PG/L | 0.001 | 0.220 | 0.160 | 0.210 | 0.140 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | DNQ0.346 | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | DNQ0.037 | ND | DNQ0.039 | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | DNQ0.010 | DNQ0.008 | DNQ0.011 | DNQ0.006 |

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

SOUTH BAY WATER RECLAMATION PLANT
Annual Sewage Dioxin and Furan Analysis

Annual 2012

| Source: | | | | EFF | EFF | EFF | EFF |
|---|---|---|---|---|---|---|---|
| | | | | TCCD | TCCD | TCCD | TCCD |
| | | | | JAN | FEB | MAR | APR |
| Analyte | MDL | Units | Equiv | P601836 | P602865 | P609208 | P612413 |
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDD | 1.41 | PG/L | 0.001 | DNQ0.012 | DNQ0.008 | DNQ0.008 | DNQ0.008 |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | ND | ND | ND | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | ND | ND | ND | ND |

| Source: | | | | EFF | EFF | EFF | EFF |
|---|---|---|---|---|---|---|---|
| | | | | TCCD | TCCD | TCCD | TCCD |
| | | | | MAY | JUN | JUL | AUG |
| Analyte | MDL | Units | Equiv | P614092 | P620073 | P623999 | P626998 |
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDD | 1.41 | PG/L | 0.001 | DNQ0.007 | ND | DNQ0.009 | ND |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | ND | ND | ND | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | ND | ND | ND | ND |

| Source: | | | | EFF | EFF | EFF | EFF |
|---|---|---|---|---|---|---|---|
| | | | | TCCD | TCCD | TCCD | TCCD |
| | | | | SEP | OCT | NOV | DEC |
| Analyte | MDL | Units | Equiv | P631915 | P634422 | P638908 | P642247 |
| 2,3,7,8-tetra CDD | .26 | PG/L | 1.000 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDD | .317 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8_hexa_CDD | .482 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDD | .484 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDD | .46 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDD | .497 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDD | 1.41 | PG/L | 0.001 | DNQ0.007 | ND | DNQ0.006 | ND |
| 2,3,7,8-tetra CDF | .257 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8-penta CDF | .335 | PG/L | 0.050 | ND | ND | ND | ND |
| 2,3,4,7,8-penta CDF | .34 | PG/L | 0.500 | ND | ND | ND | ND |
| 1,2,3,4,7,8-hexa CDF | .284 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,6,7,8-hexa CDF | .281 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,7,8,9-hexa CDF | .348 | PG/L | 0.100 | ND | ND | ND | ND |
| 2,3,4,6,7,8-hexa CDF | .294 | PG/L | 0.100 | ND | ND | ND | ND |
| 1,2,3,4,6,7,8-hepta CDF | .324 | PG/L | 0.010 | ND | ND | ND | ND |
| 1,2,3,4,7,8,9-hepta CDF | .49 | PG/L | 0.010 | ND | ND | ND | ND |
| octa CDF | .805 | PG/L | 0.001 | ND | ND | ND | ND |

ND= not detected
DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

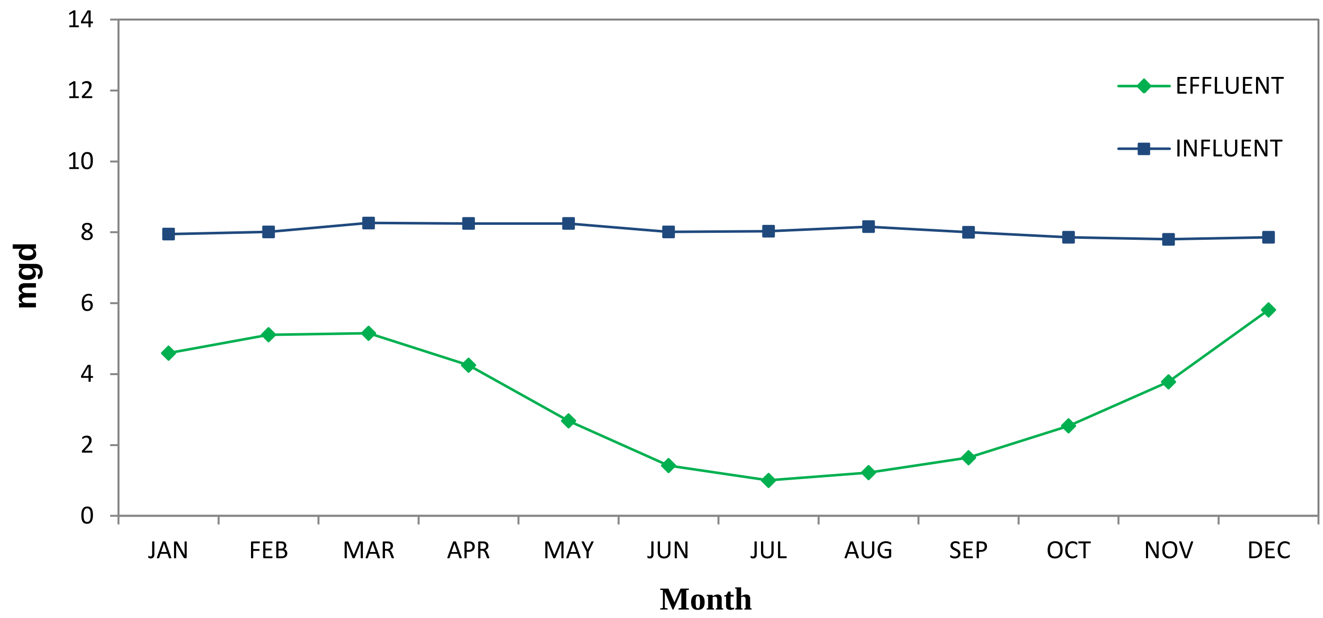
## D. Influent and Effluent Graphs

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

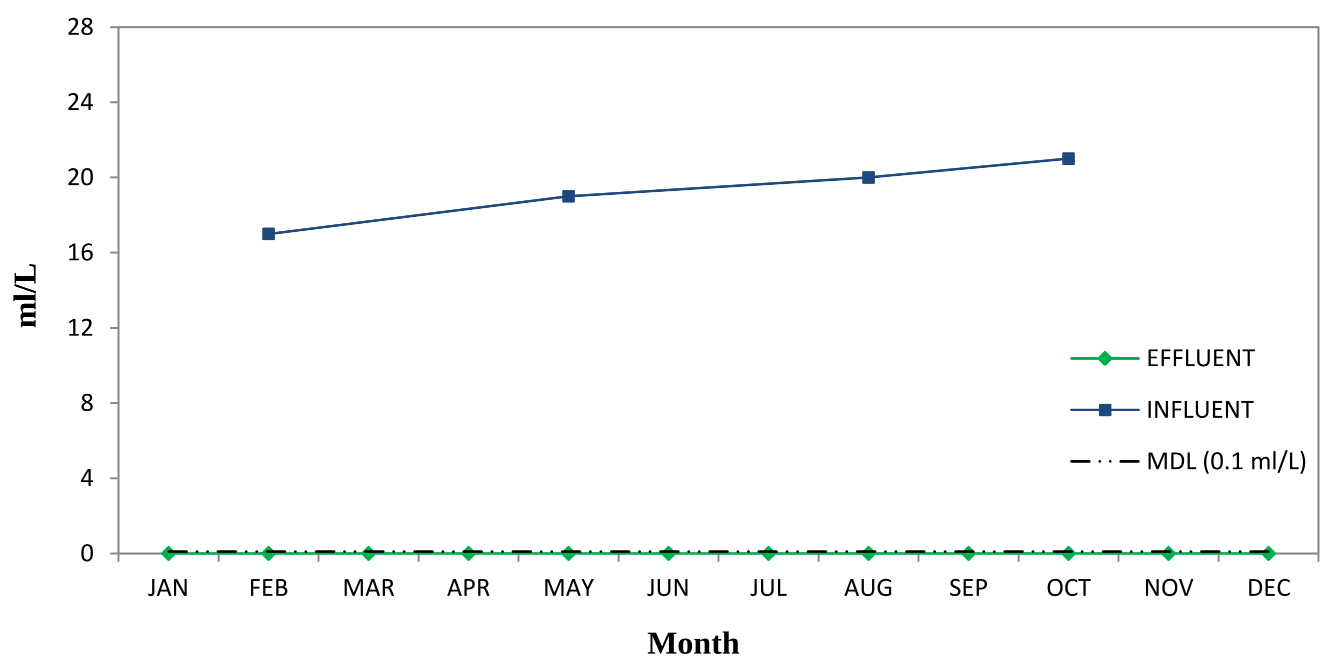
Where possible, the influent and effluent values of a given parameter have been included on the same graph so that removals and other relationships are readily apparent. Please note that many of the graphs are on expanded scales. That is, they normally don't go to zero concentrations but show, in magnified 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.

## 2012 South Bay Water Reclamation Plant
## Monthly Averages

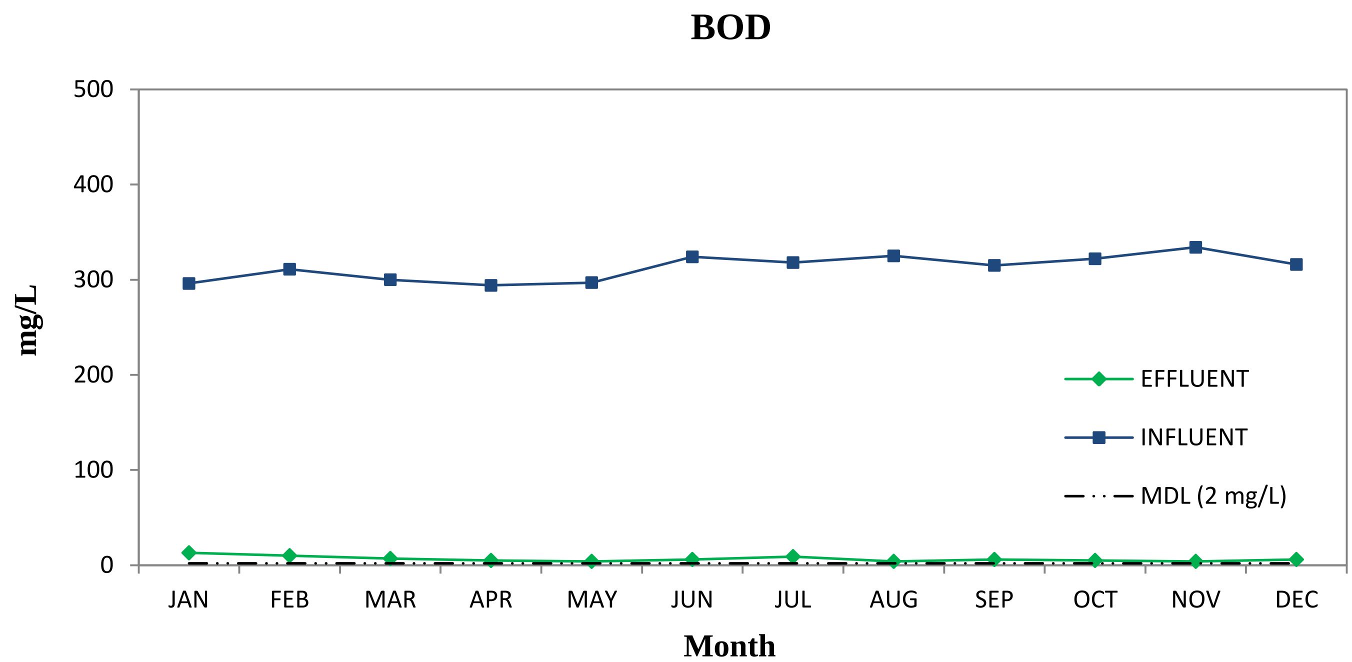
### Flows

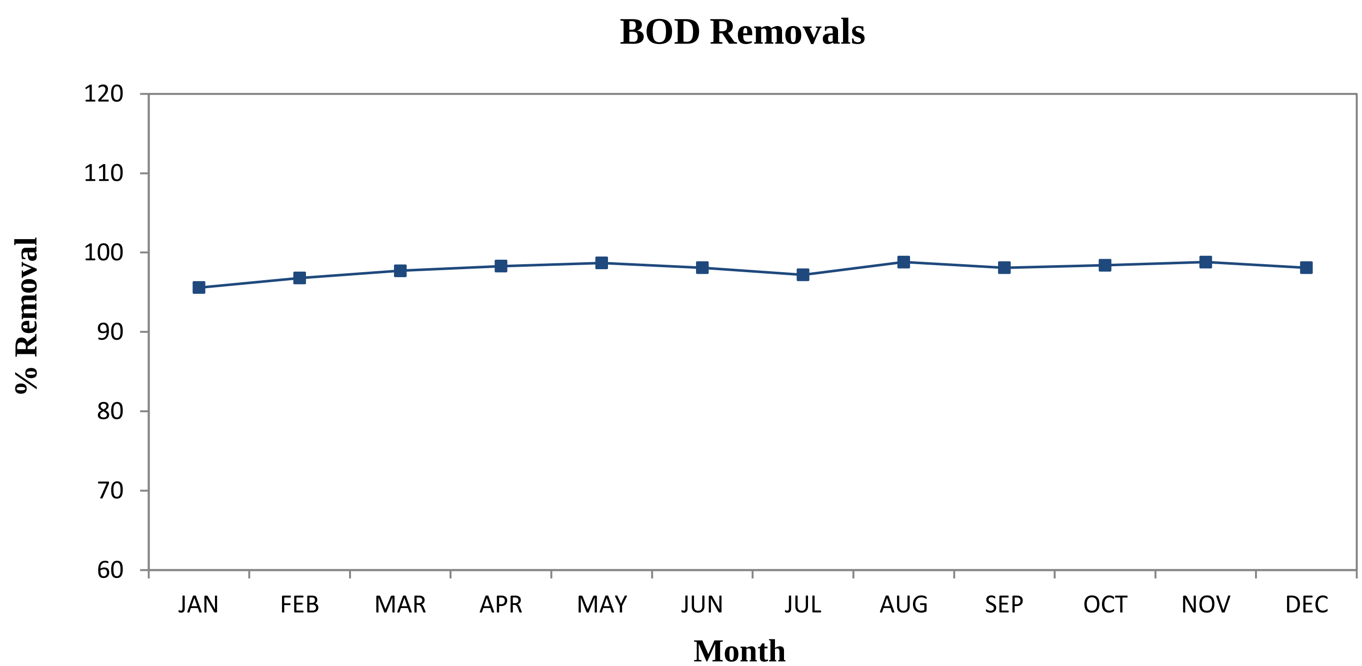



### Settleables Solids

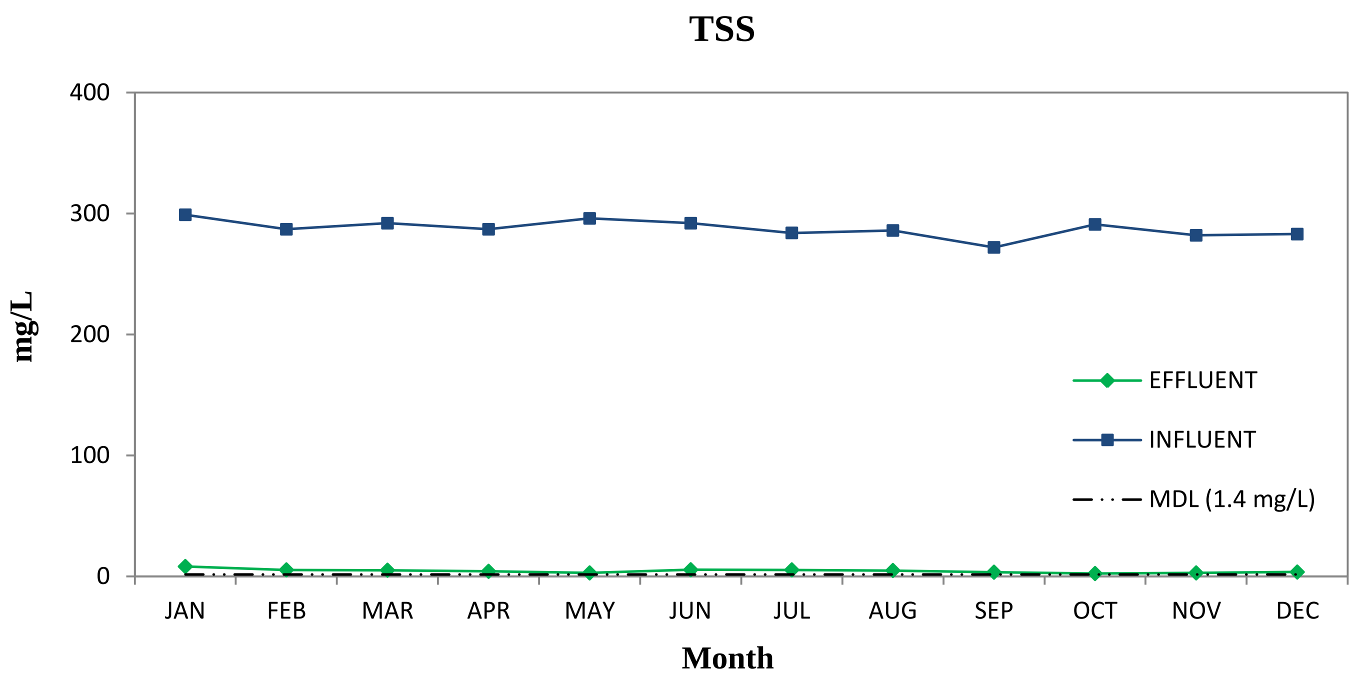


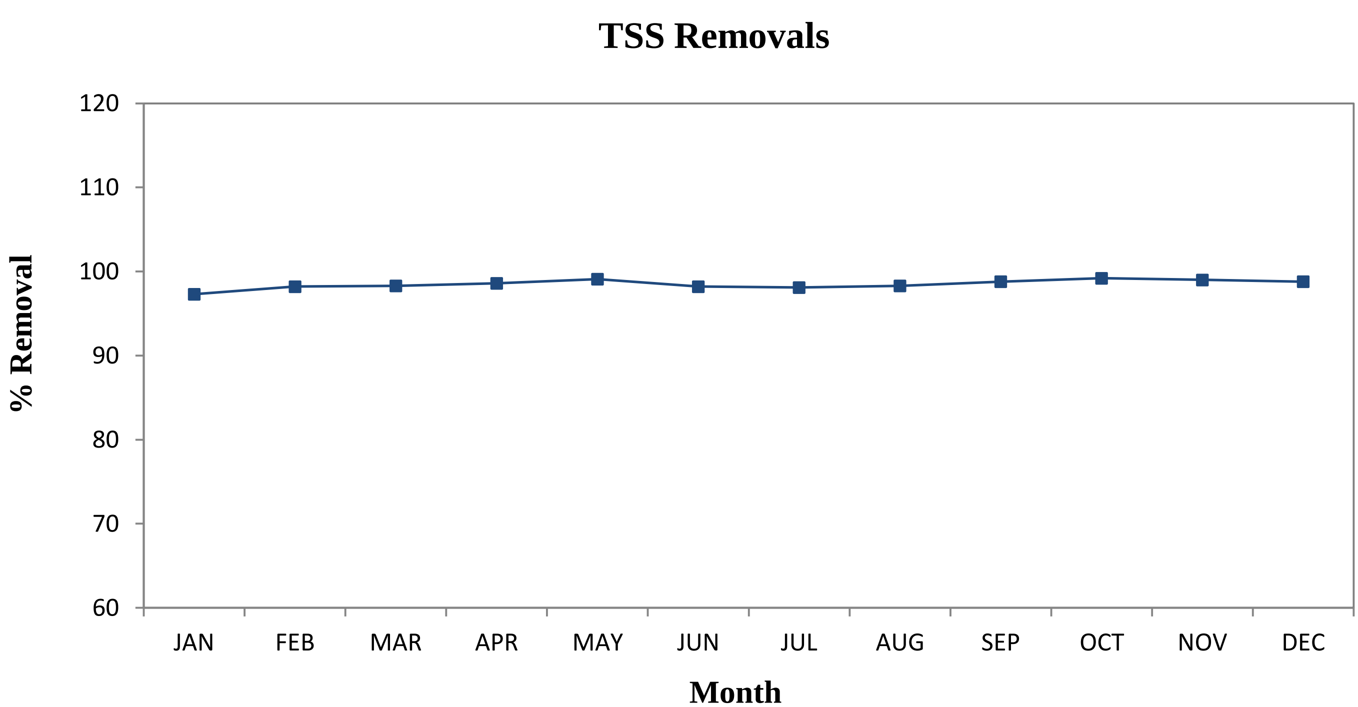
## 2012 South Bay Water Reclamation Plant
## Monthly Averages



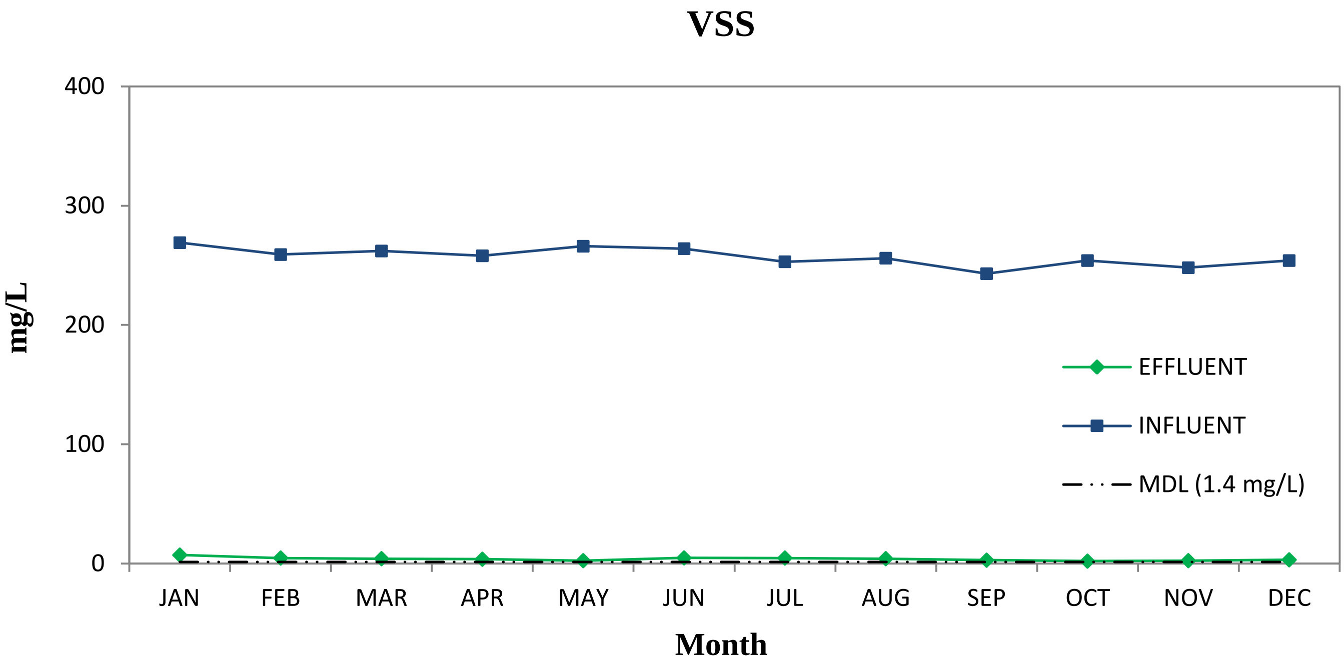



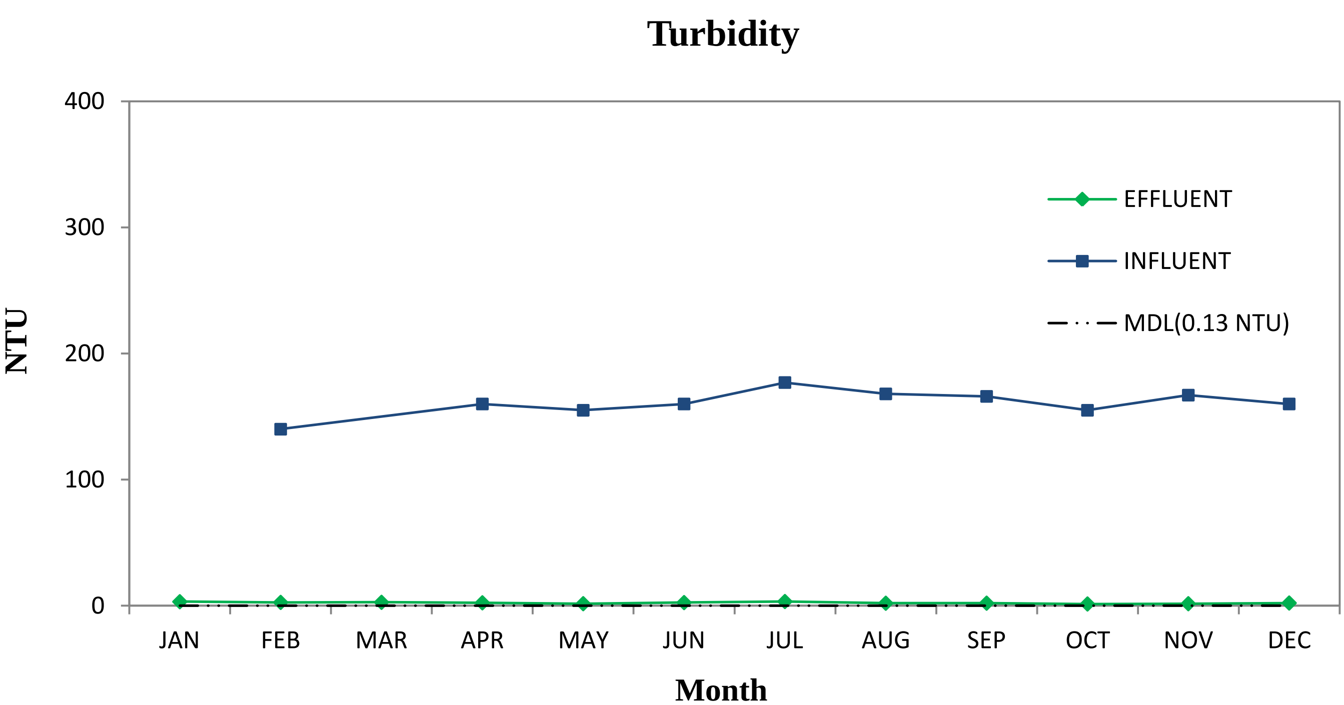
**2012 South Bay Water Reclation Plant**
**Monthly Averages**



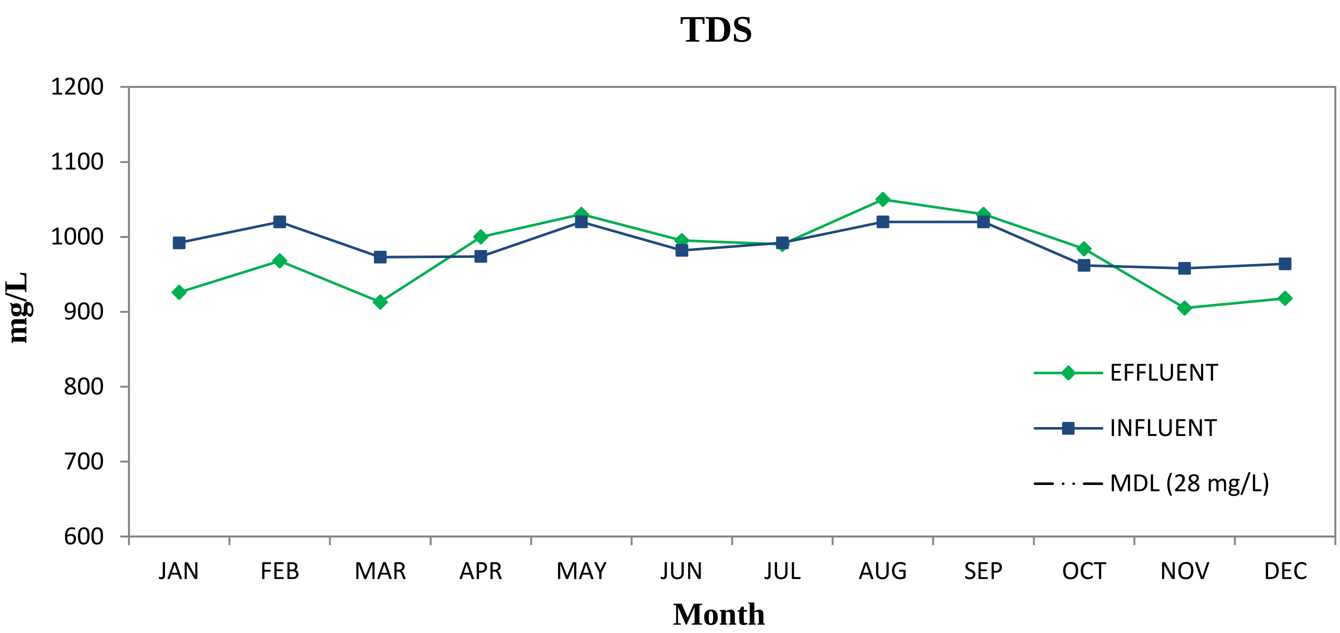



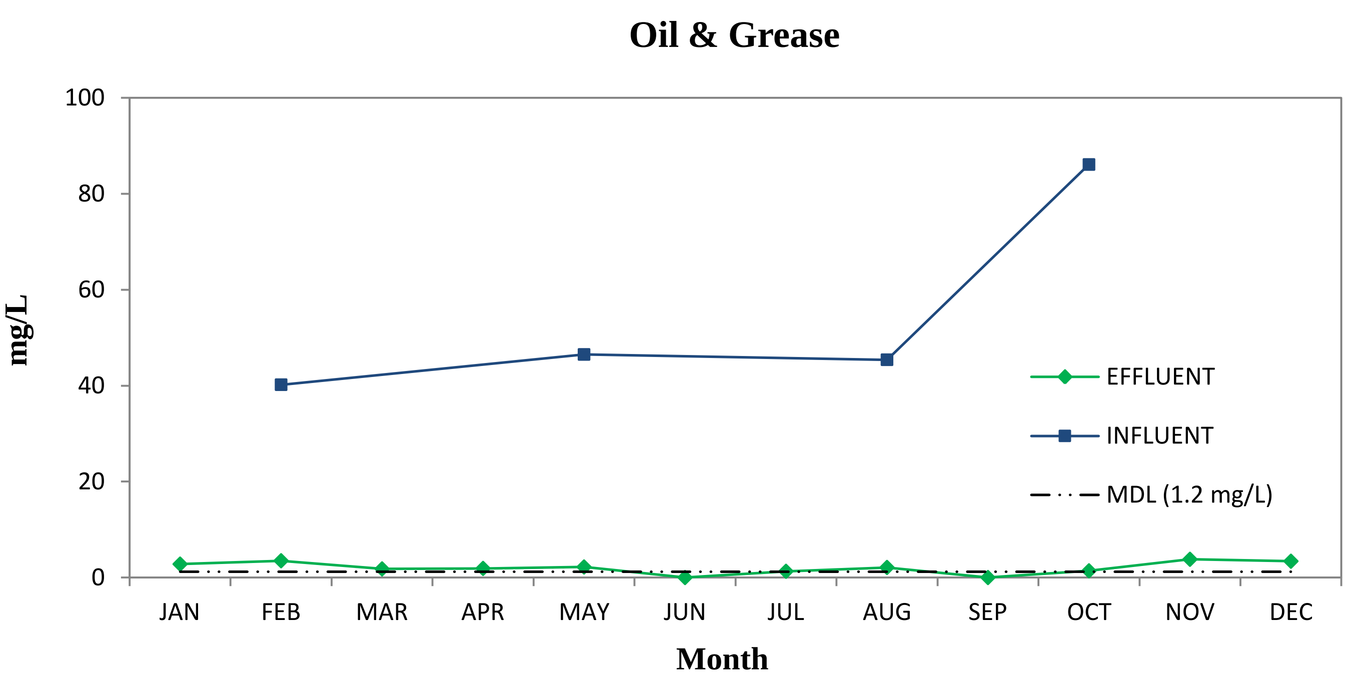
## 2012 South Bay Water Reclamation Plant
## Monthly Averages



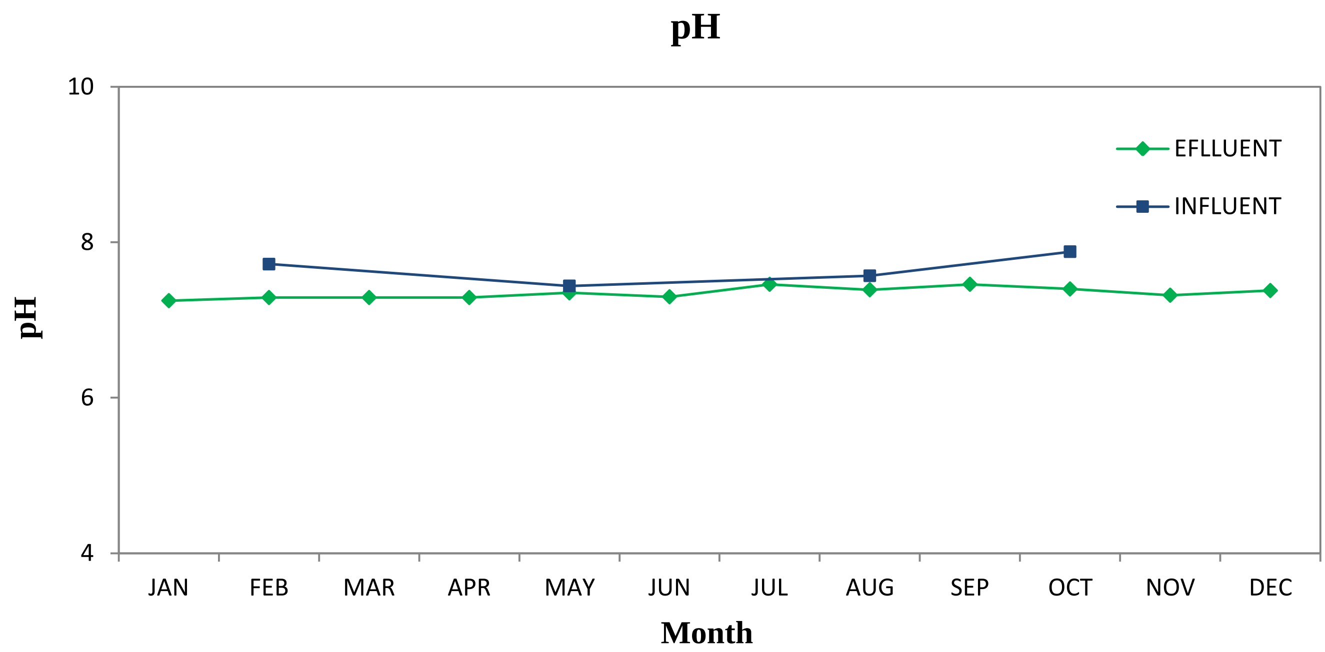



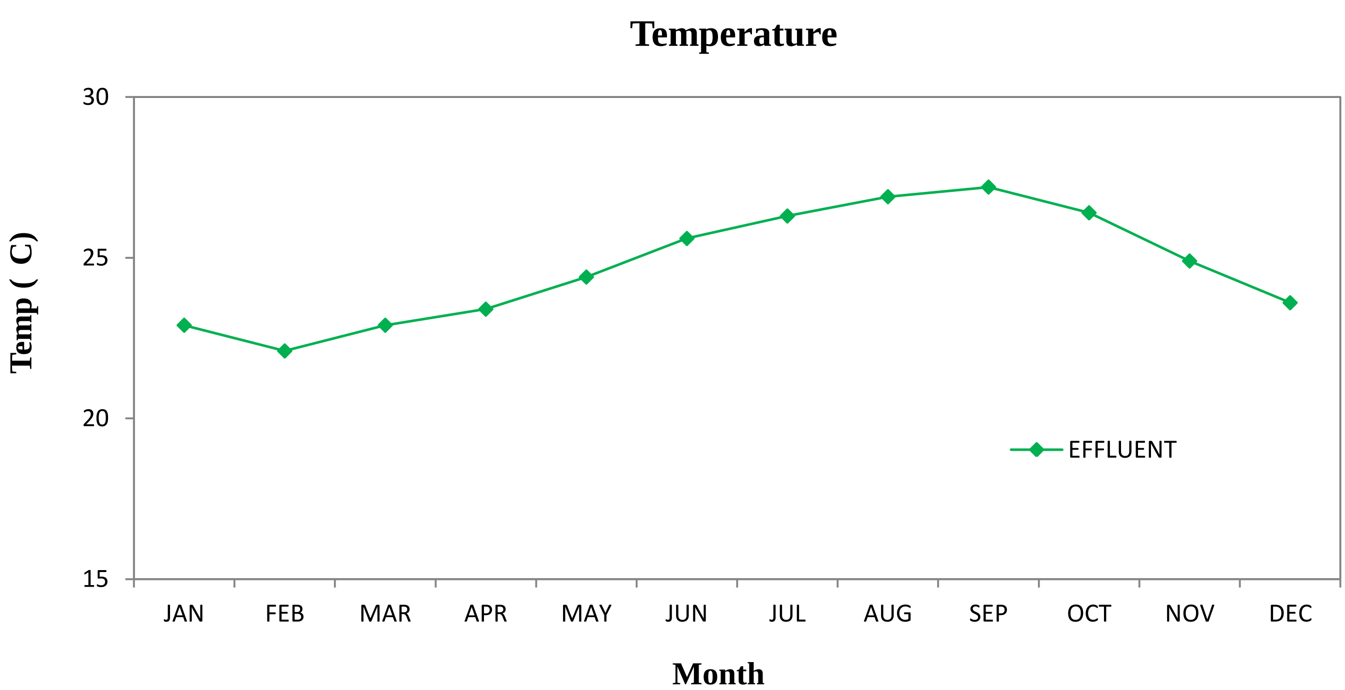
## 2012 South Bay Water Reclamation Plant
## Monthly Averages



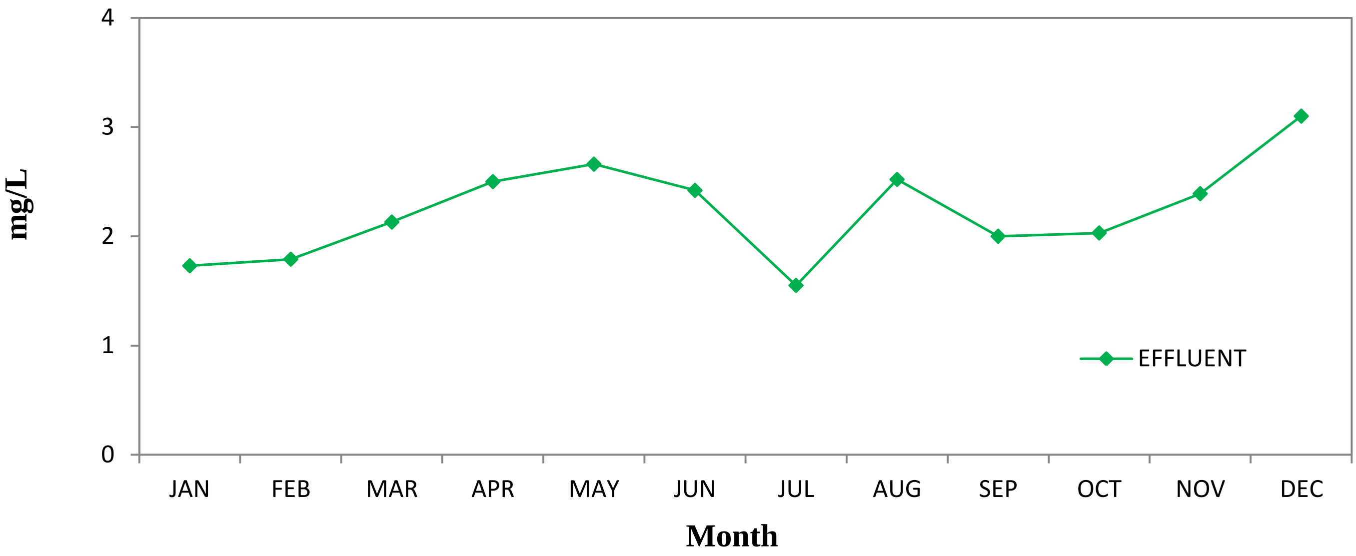
# 2012 South Bay Water Reclamation Plant
## Monthly Averages



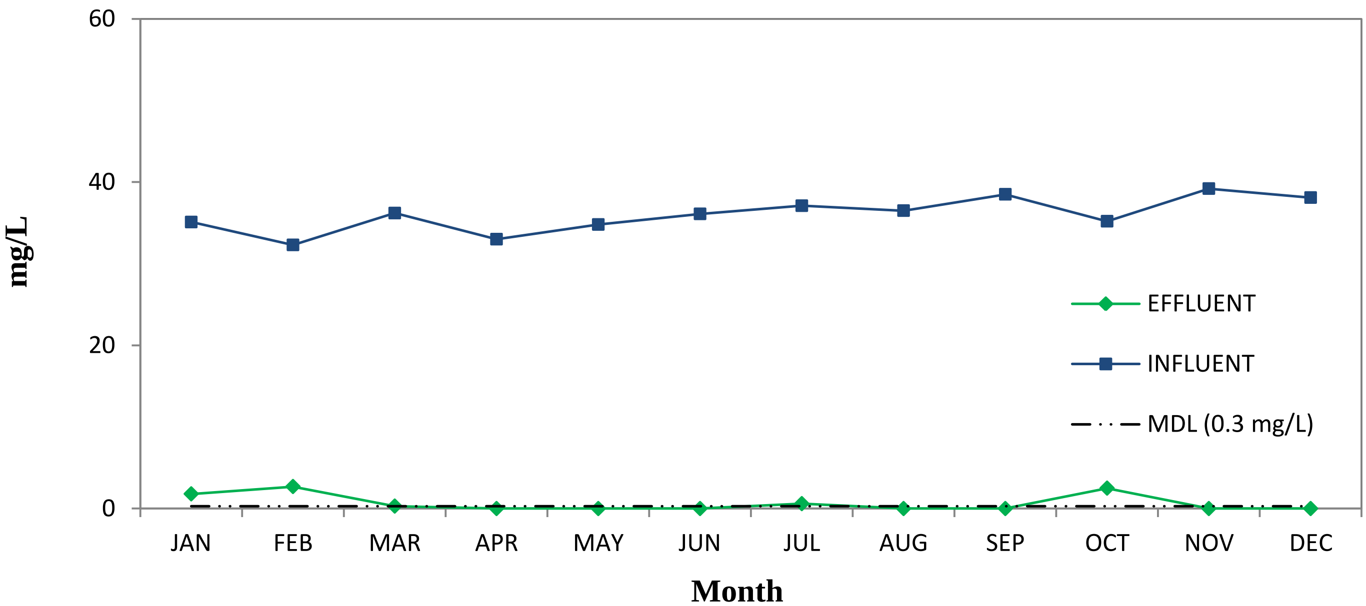



## 2012 South Bay Water Reclamation Plant
## Monthly Averages

### Dissolved Oxygen

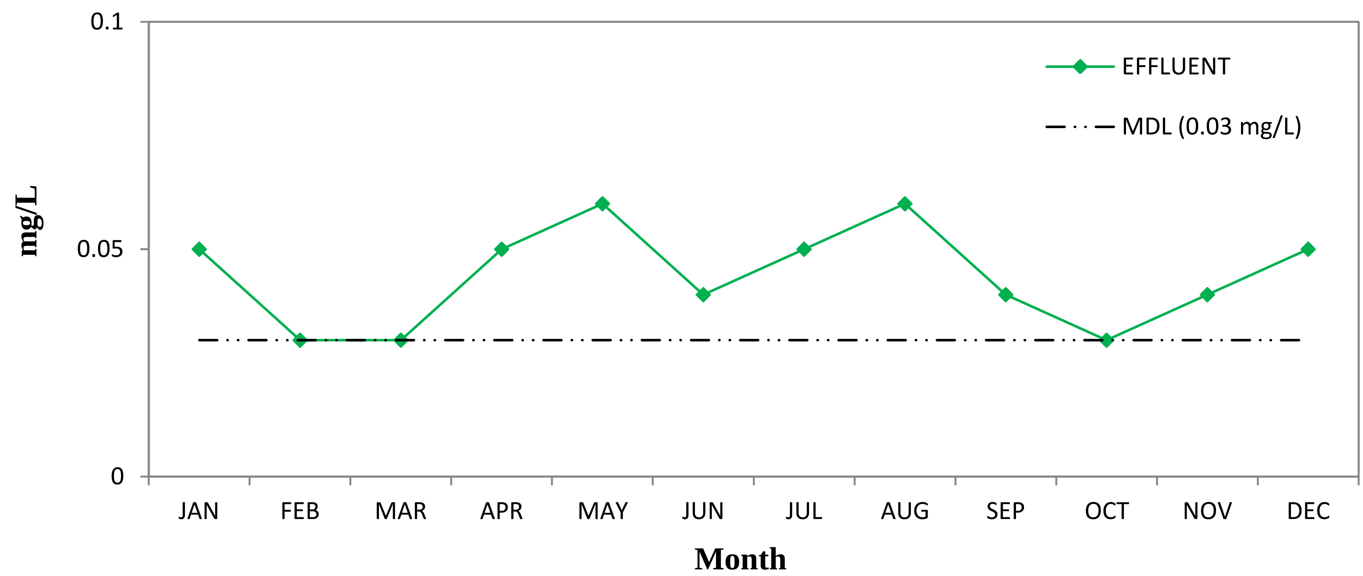



### Ammonia-N

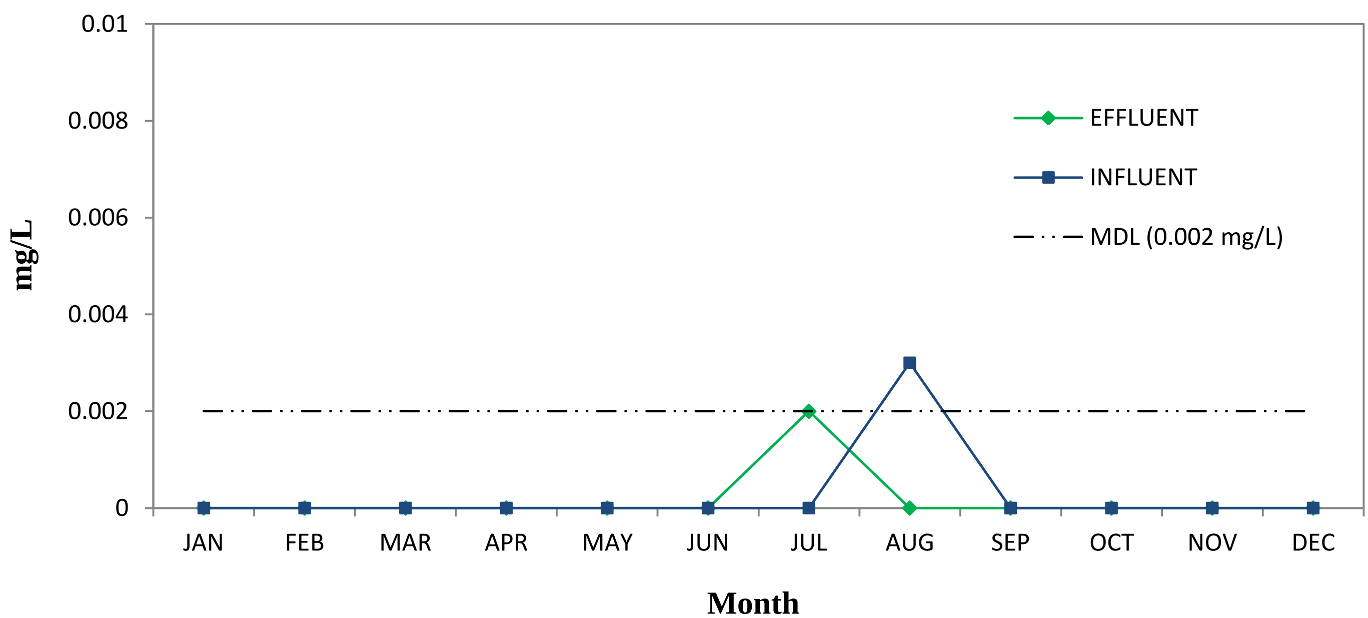


**2012 South Bay Water Reclamation Plant**
**Monthly Averages**

## Residual Chlorine

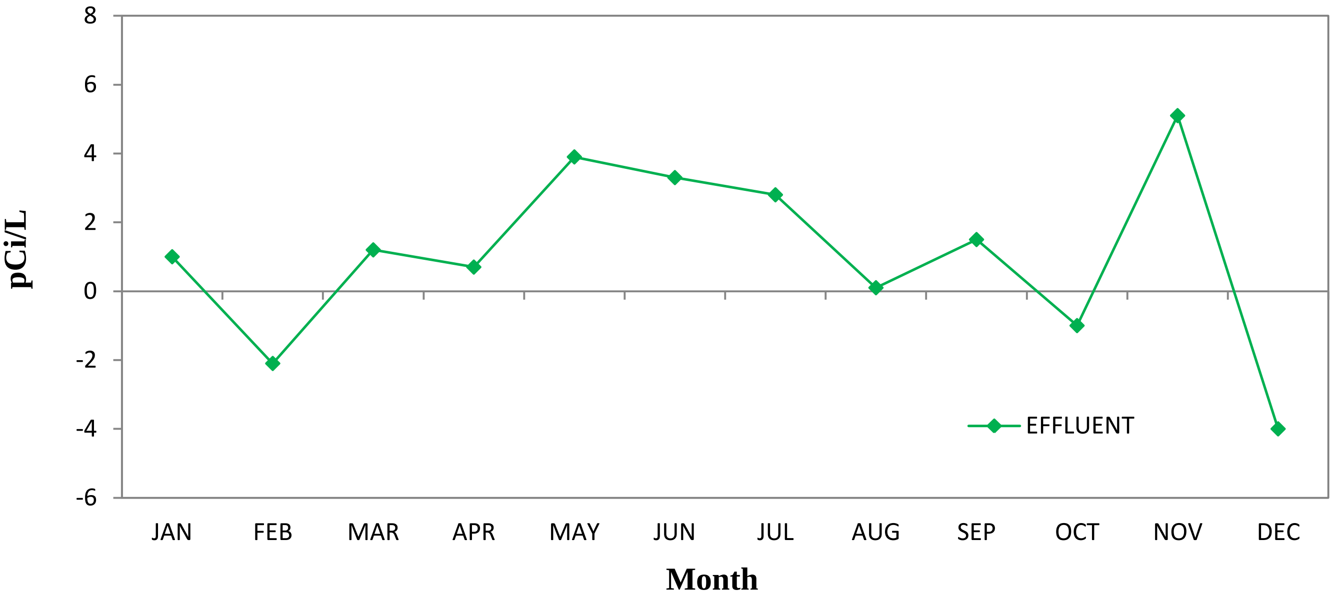



## Total Cyanides

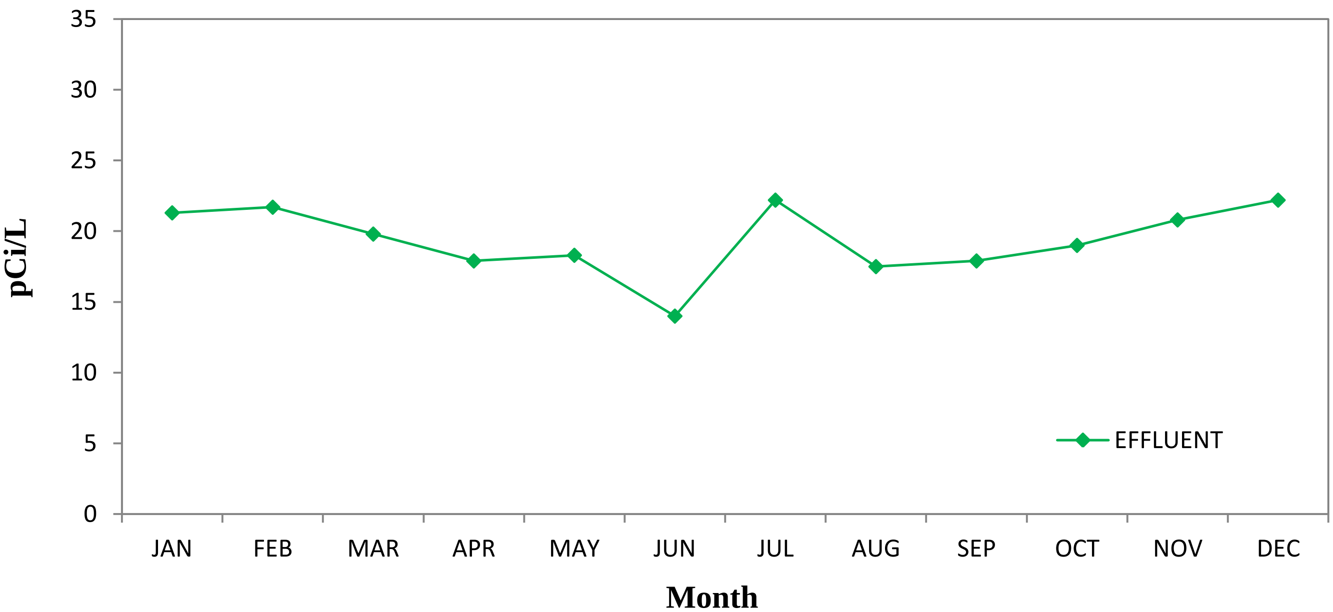


**2012 South Bay Water Reclamation Plant**
**Monthly Averages**

## Alpha Radiation

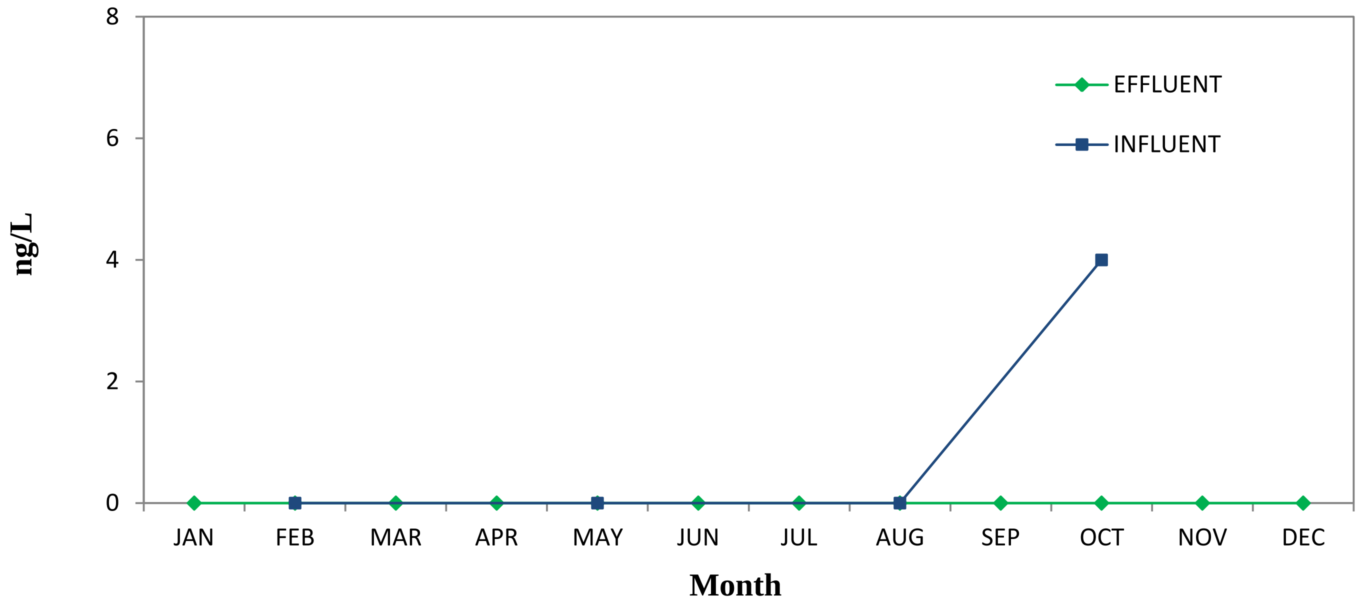



## Beta Radiation

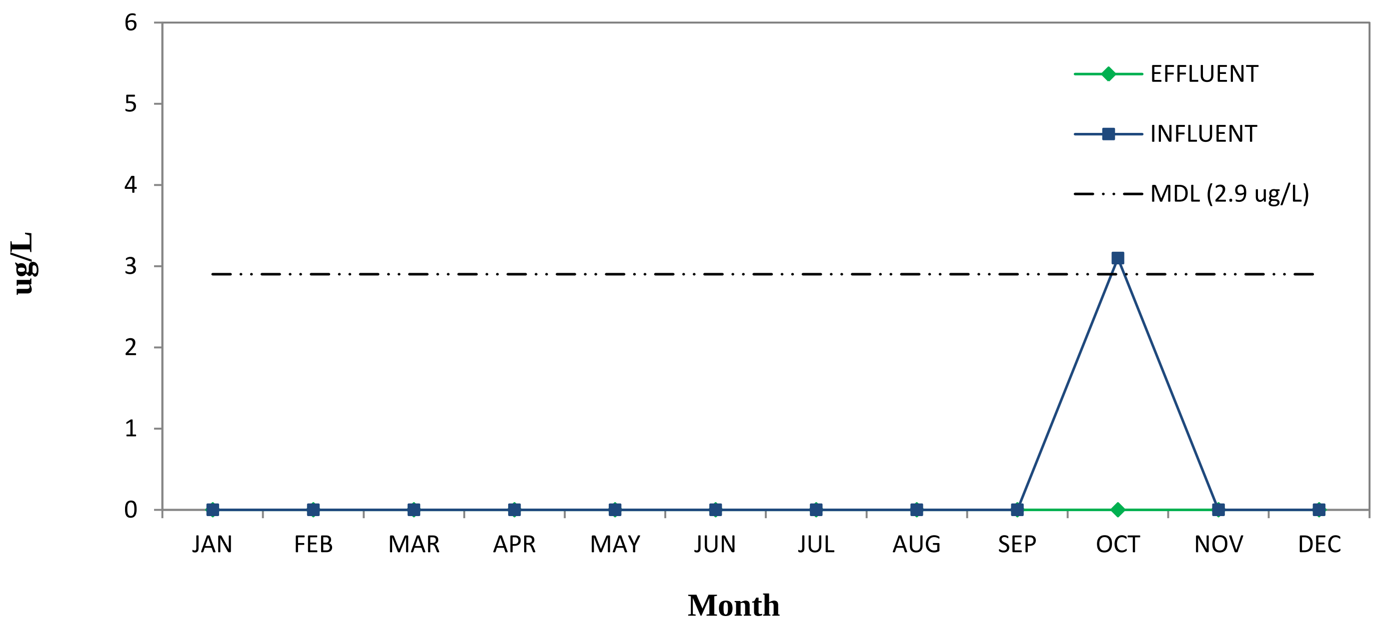


## 2012 South Bay Water Reclamation Plant
## Monthly Averages

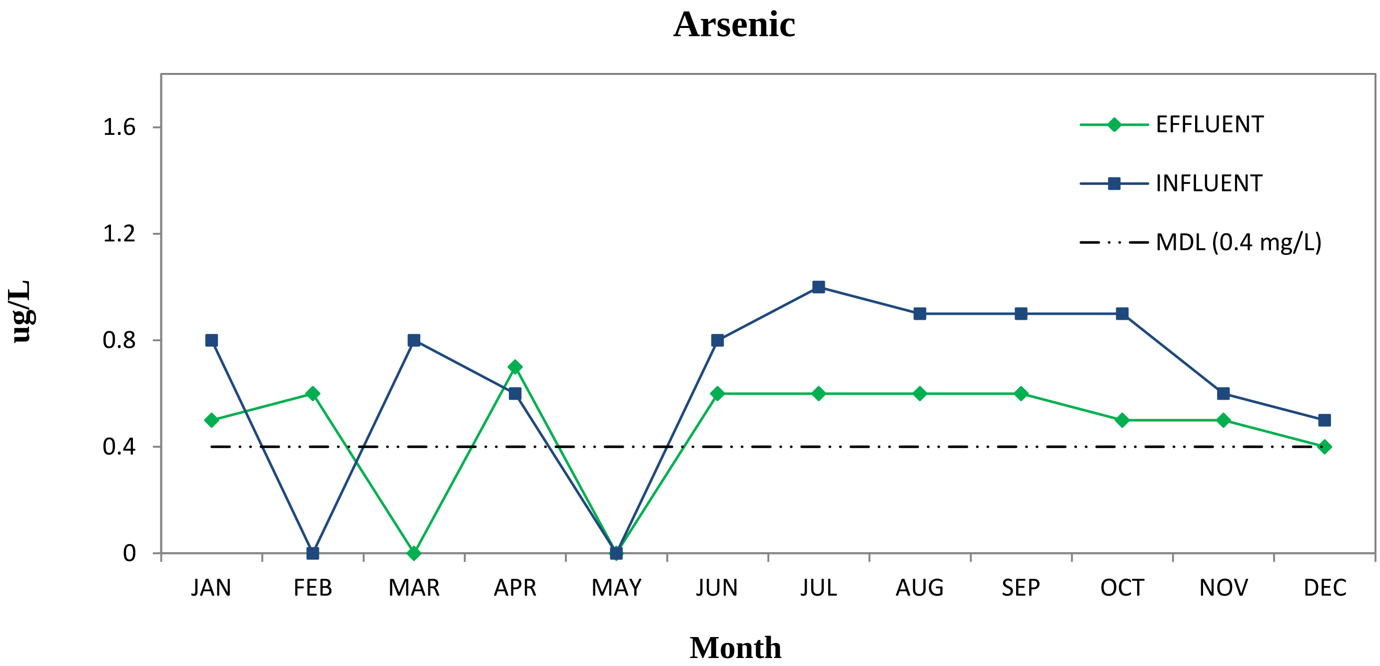
### Total Chlorinated Hydrocarbons

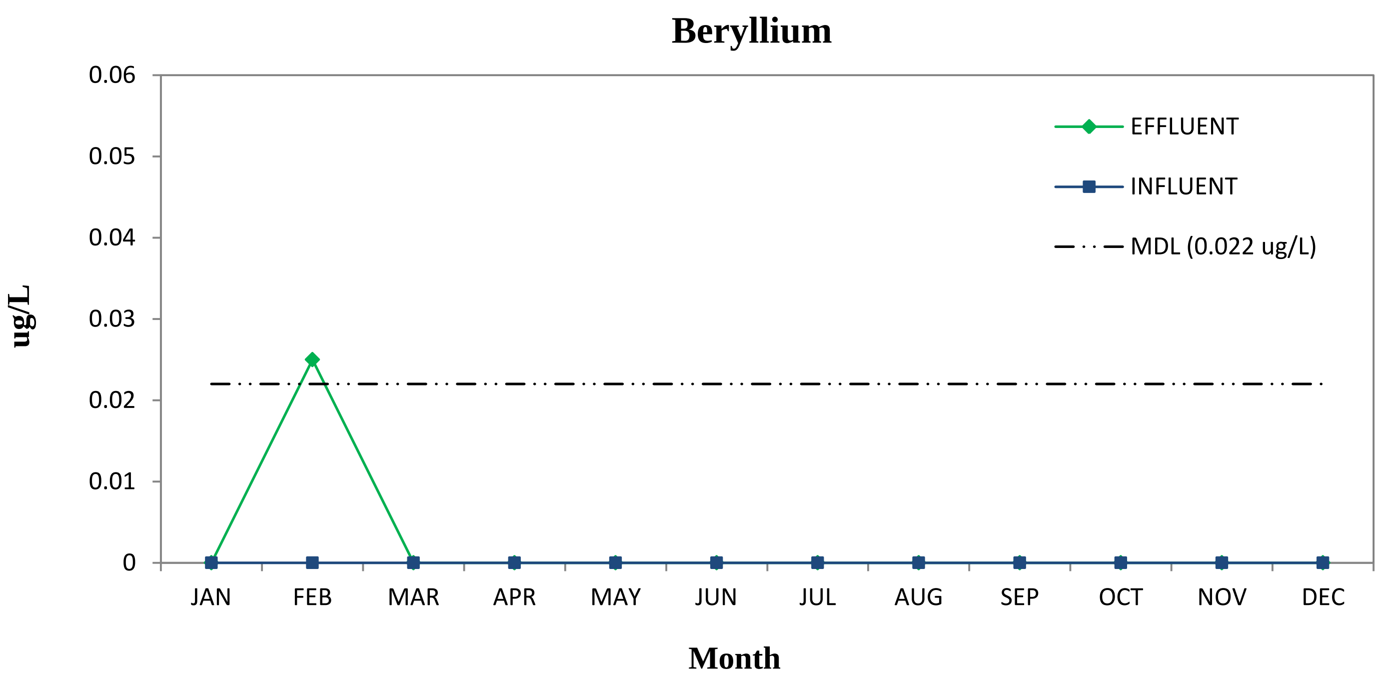



### Antimony

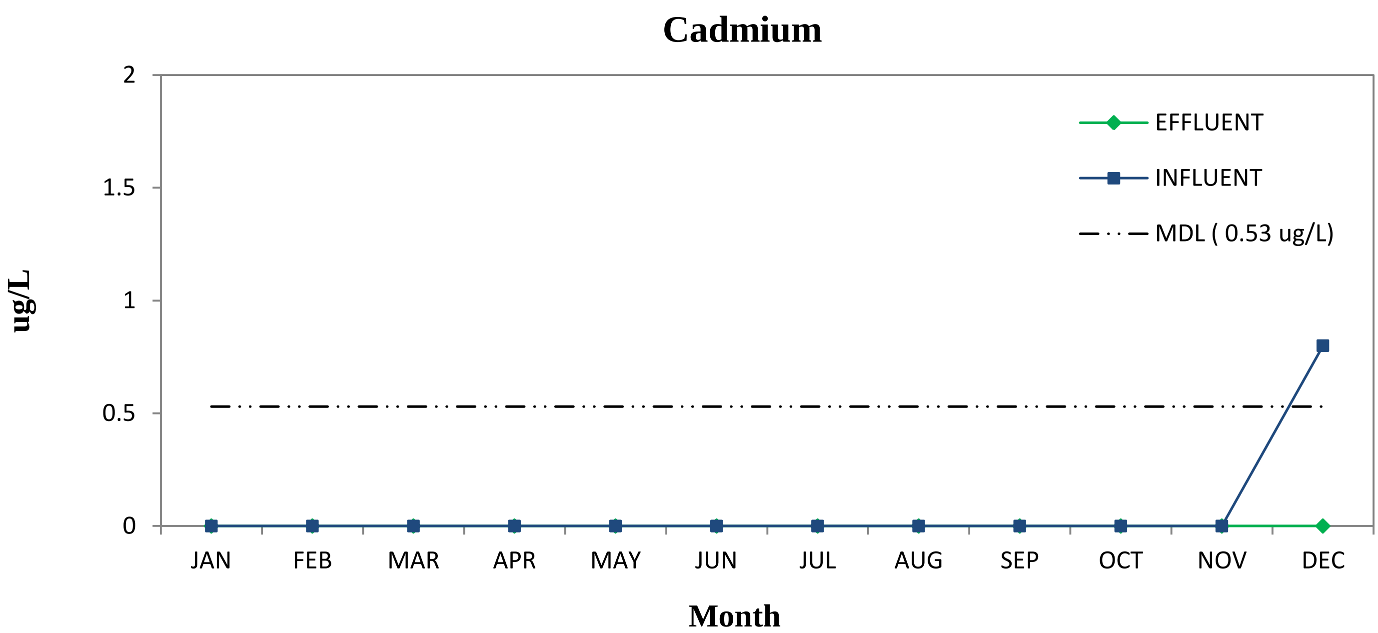


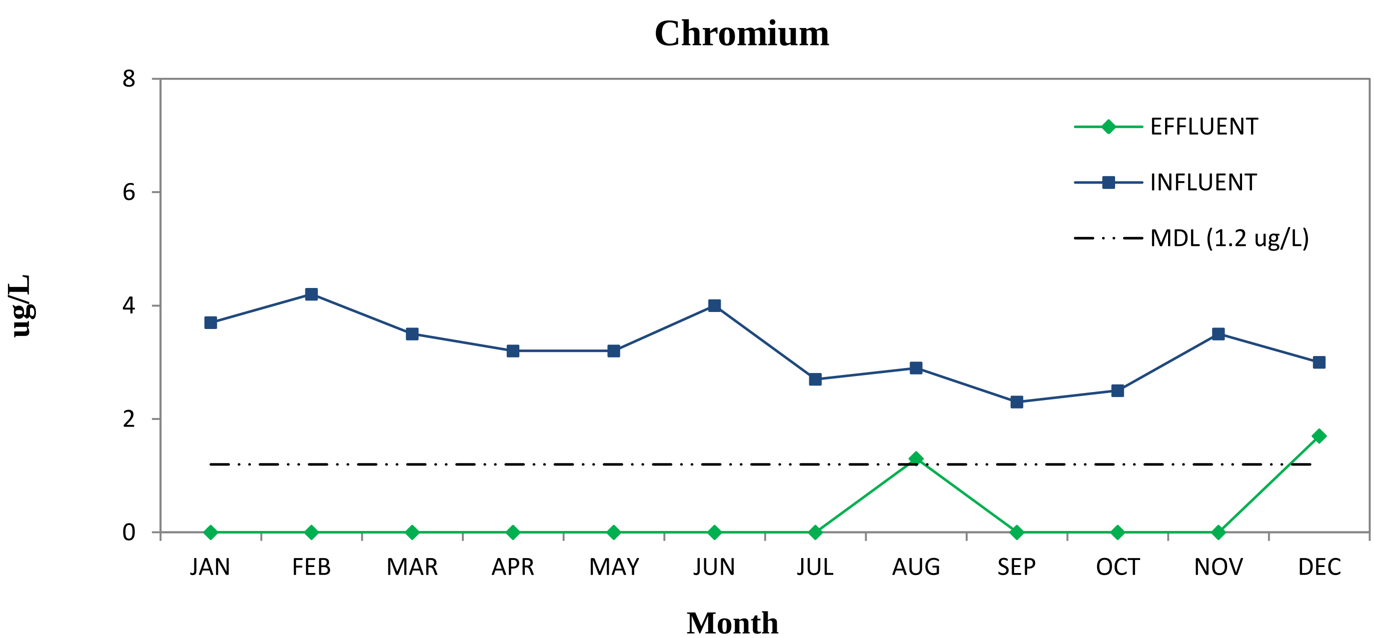
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



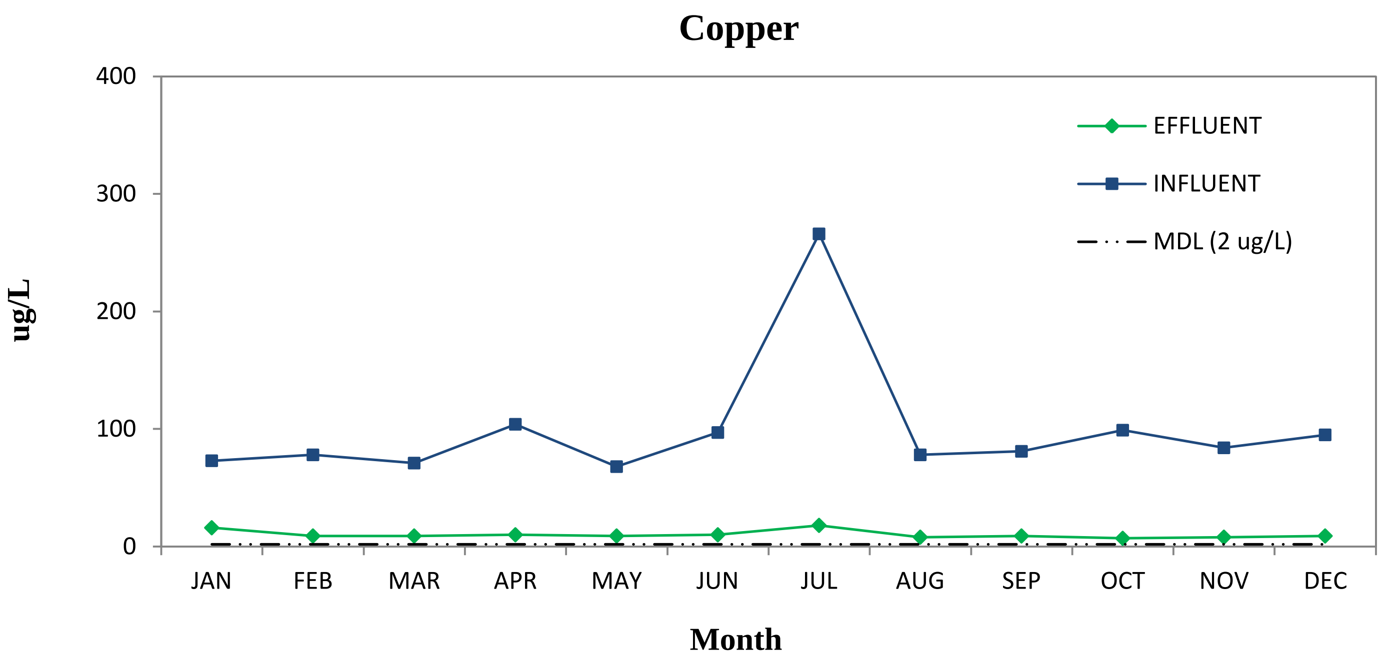



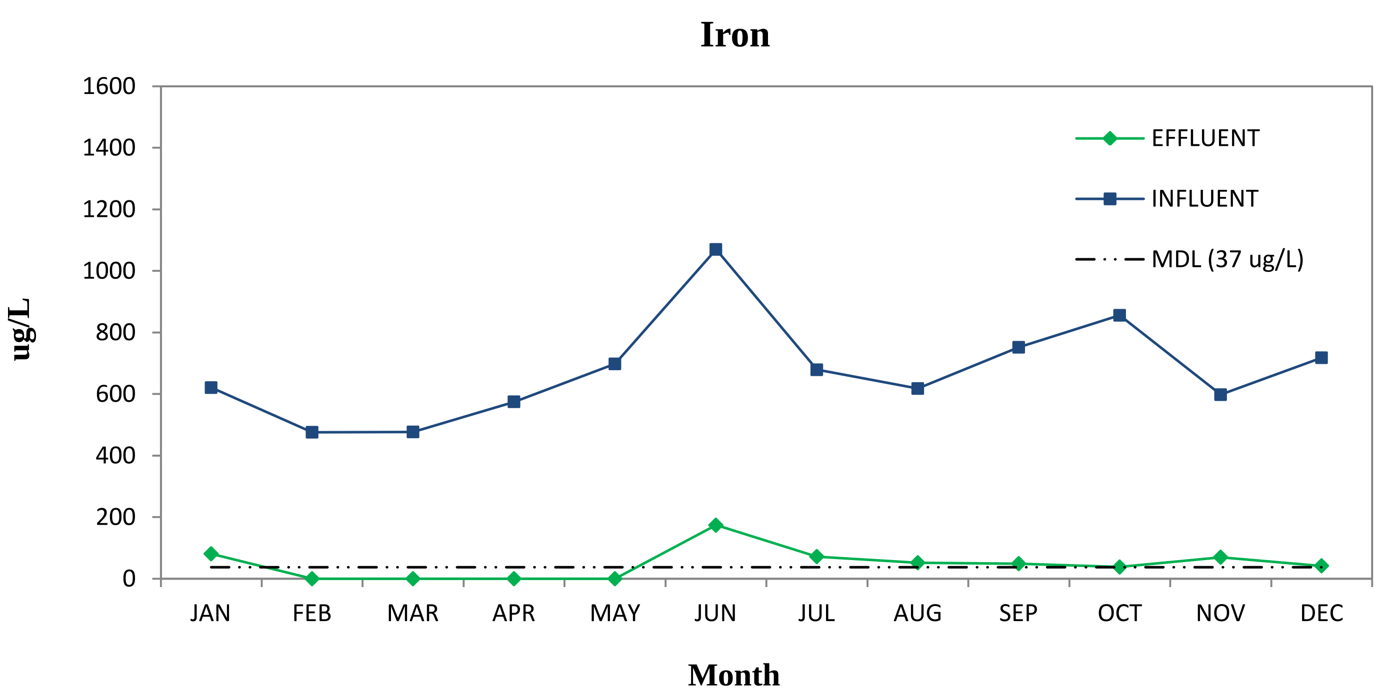
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



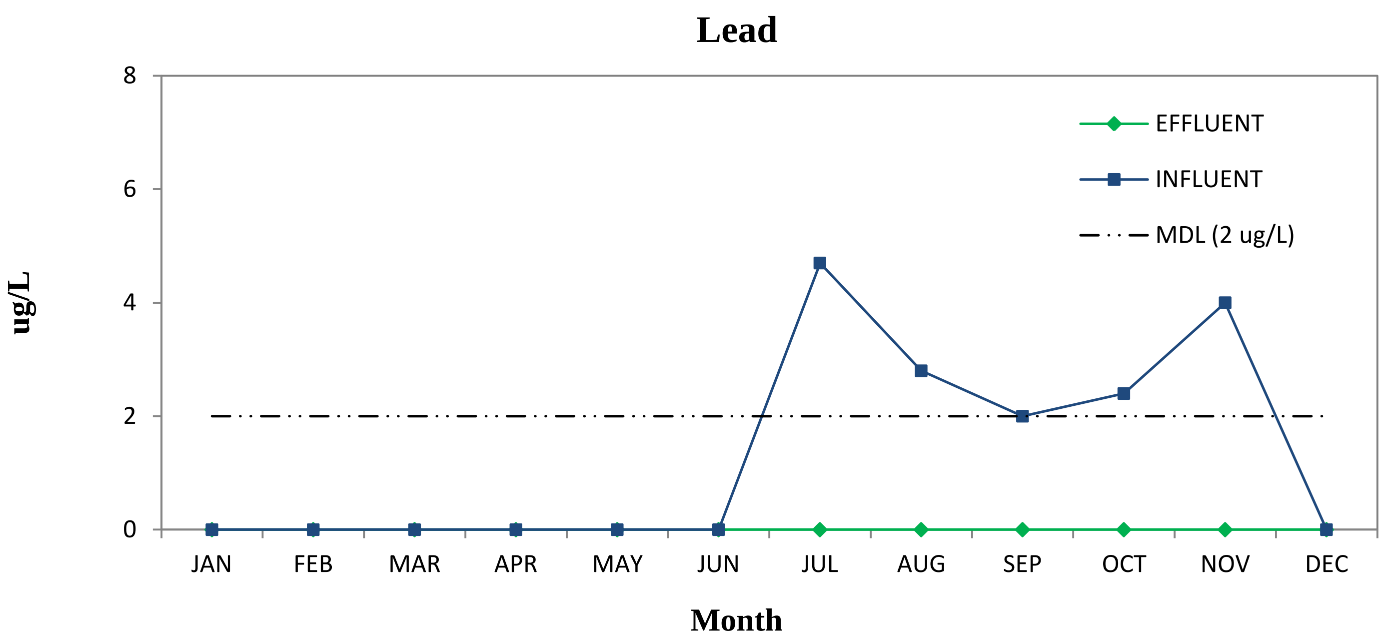



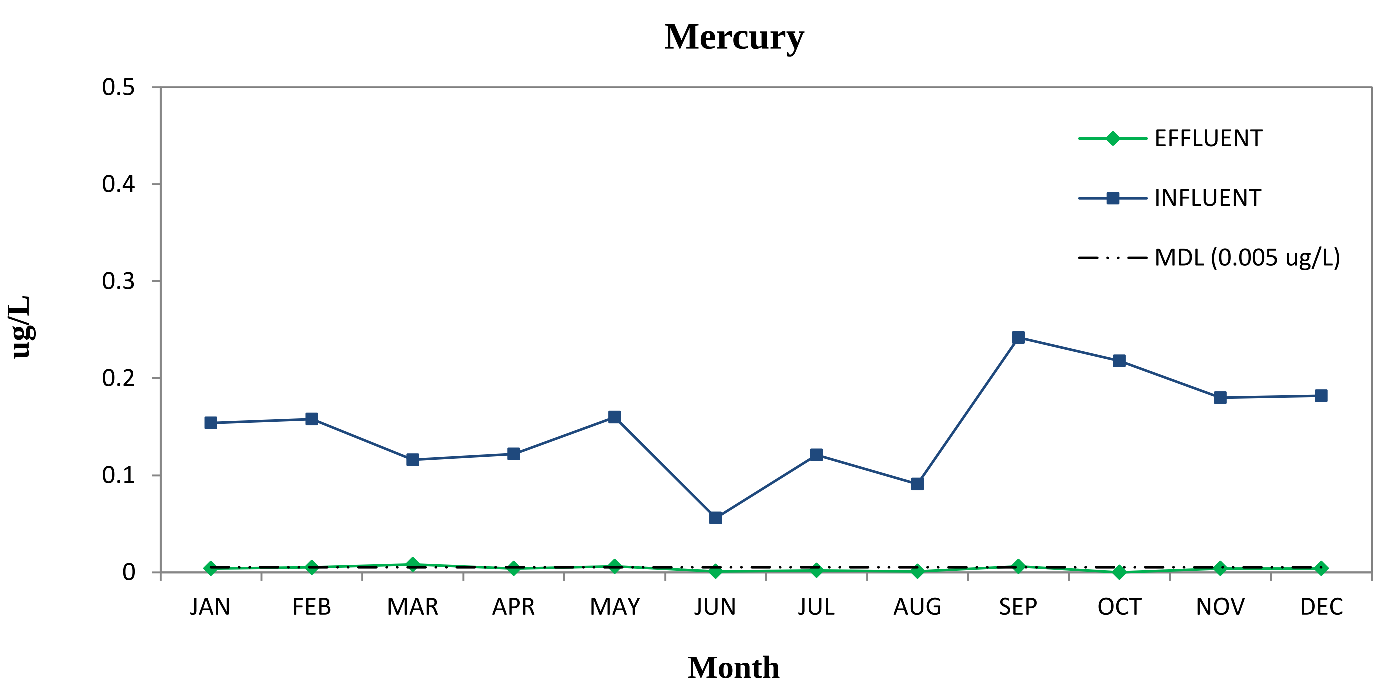
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



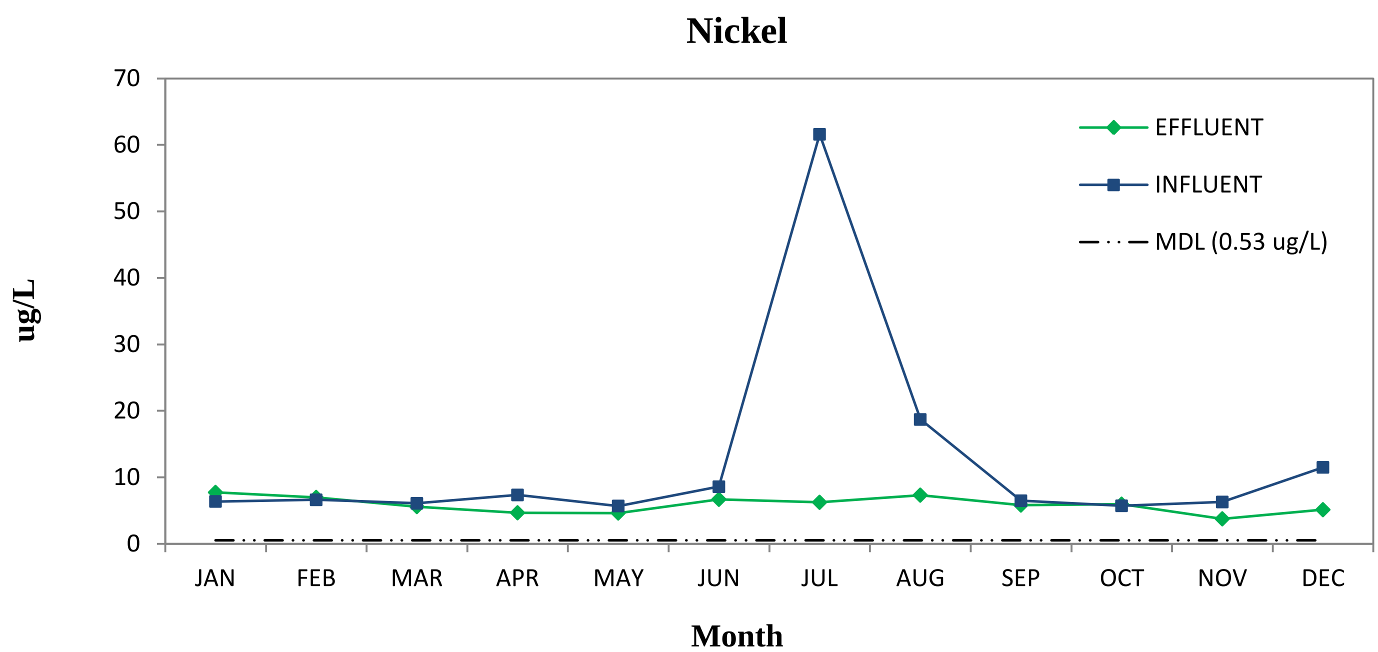



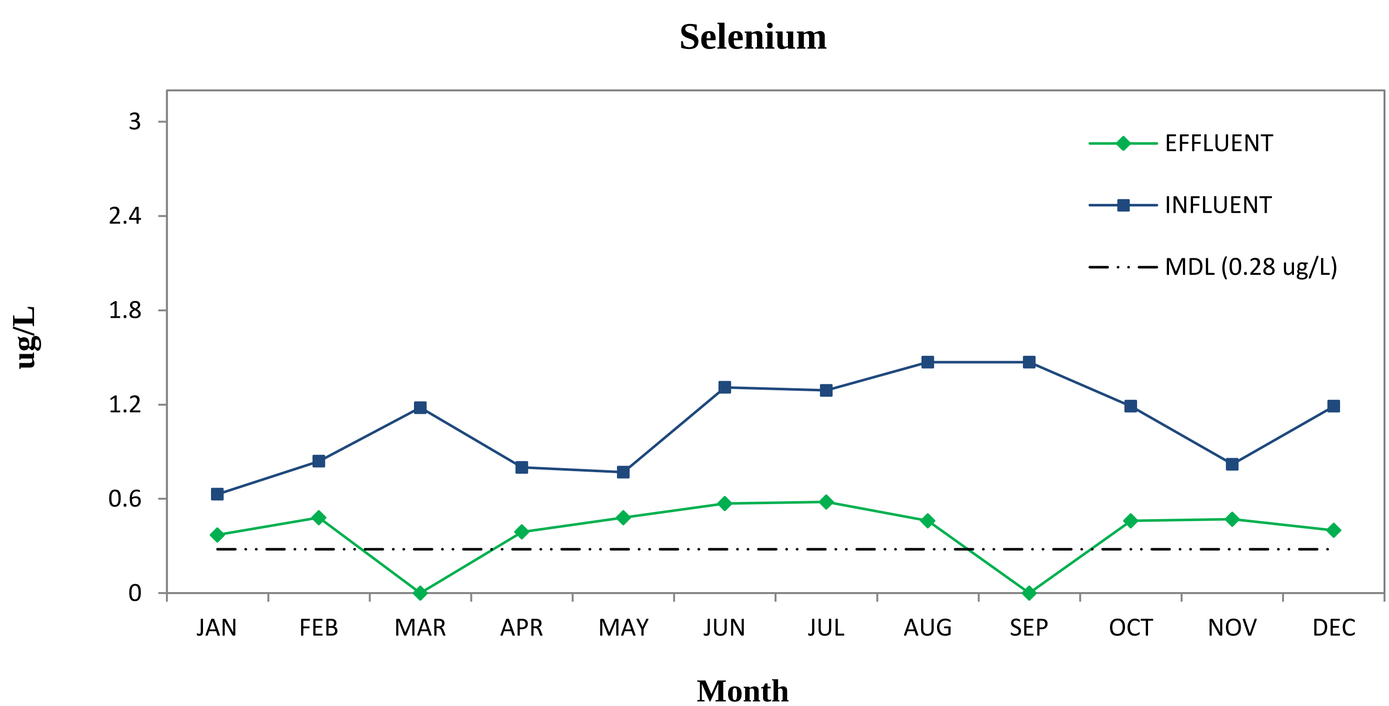
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



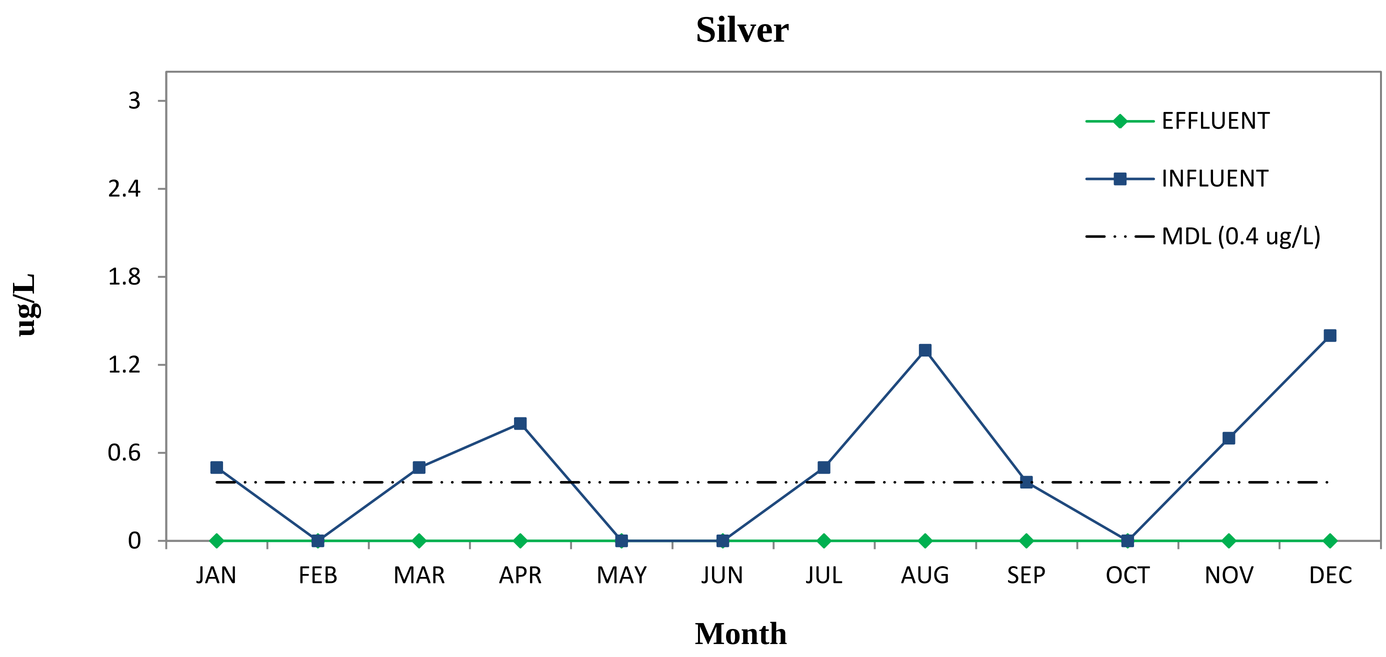



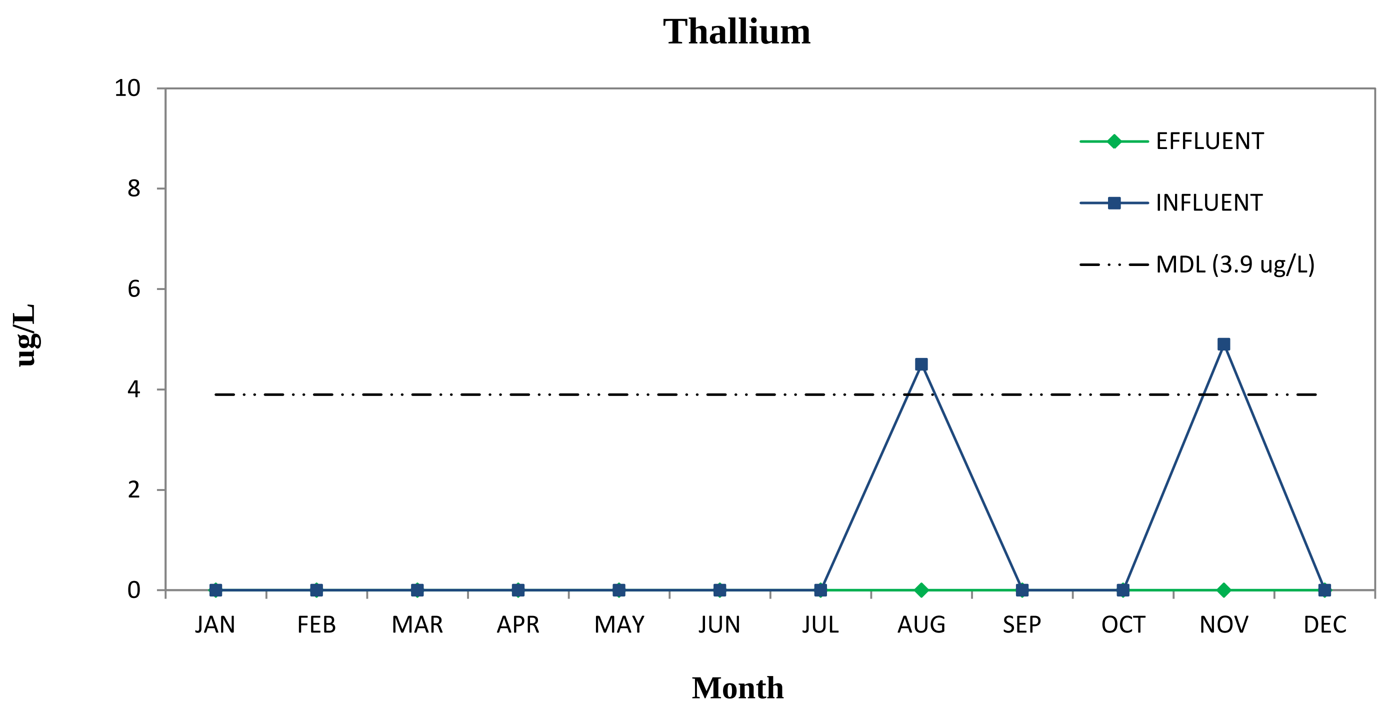
## 2012 South Bay Water Reclamation Plant
## Monthly Averages



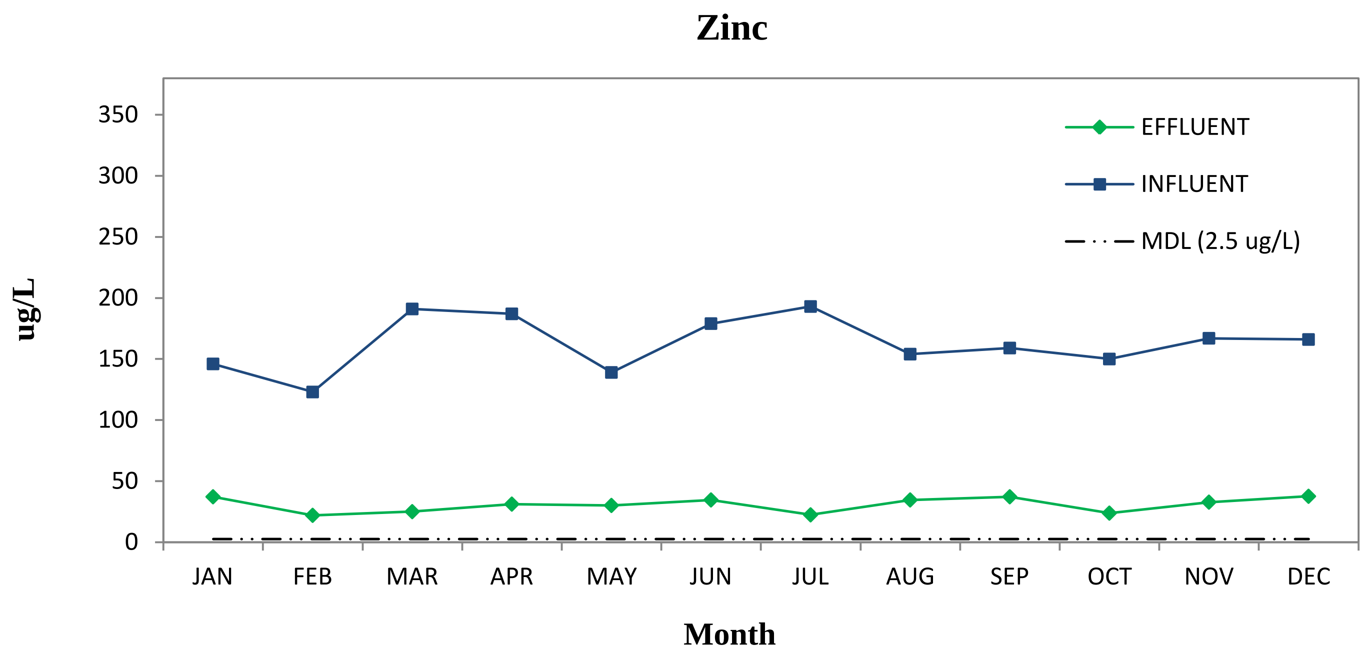



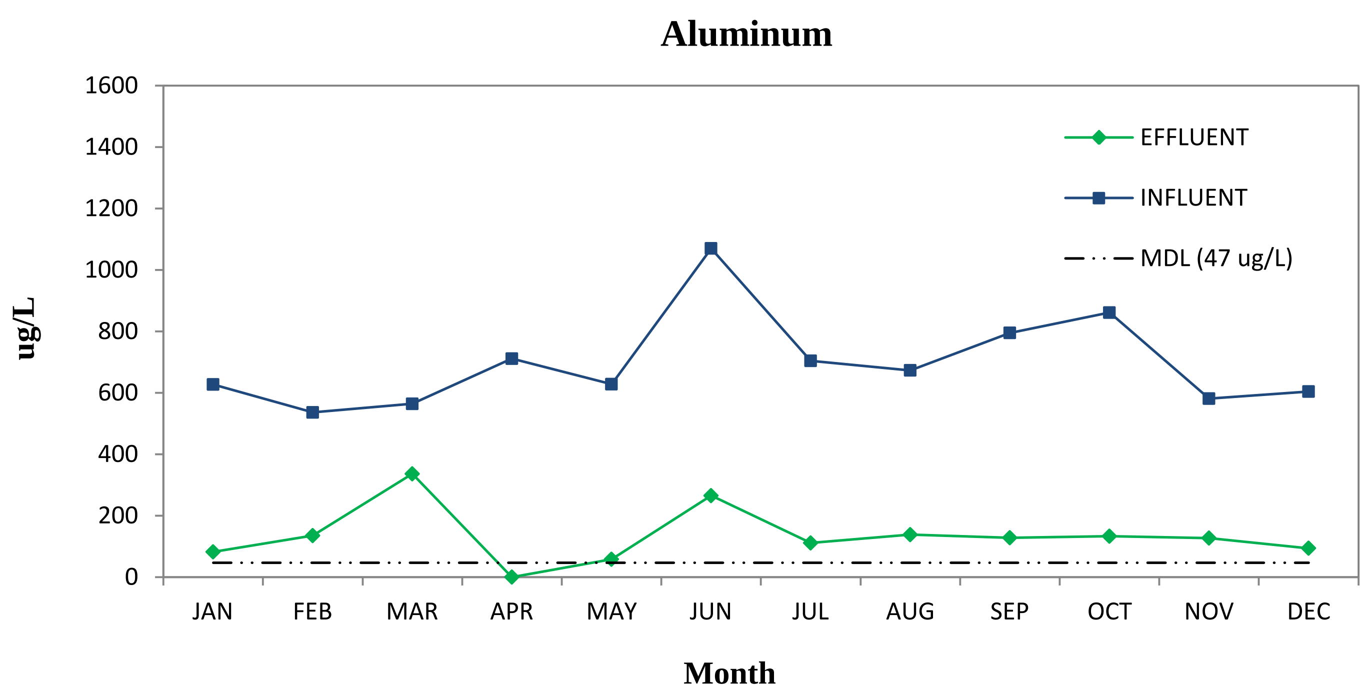
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



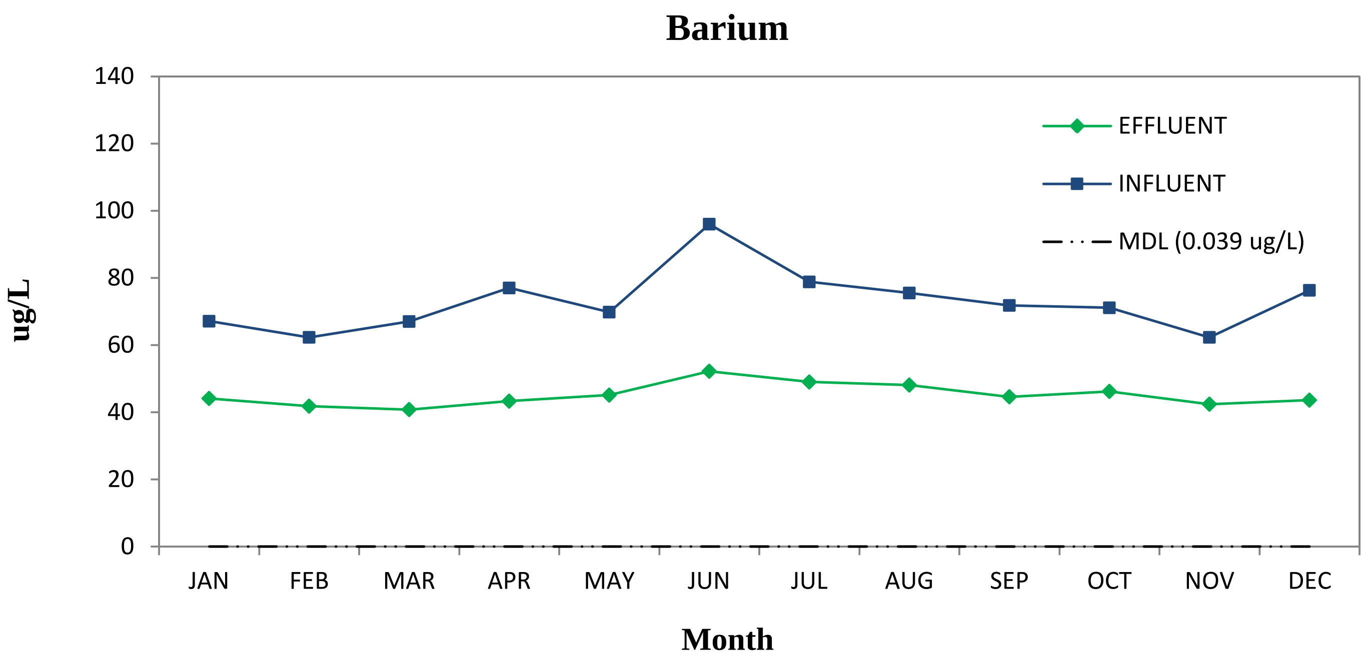



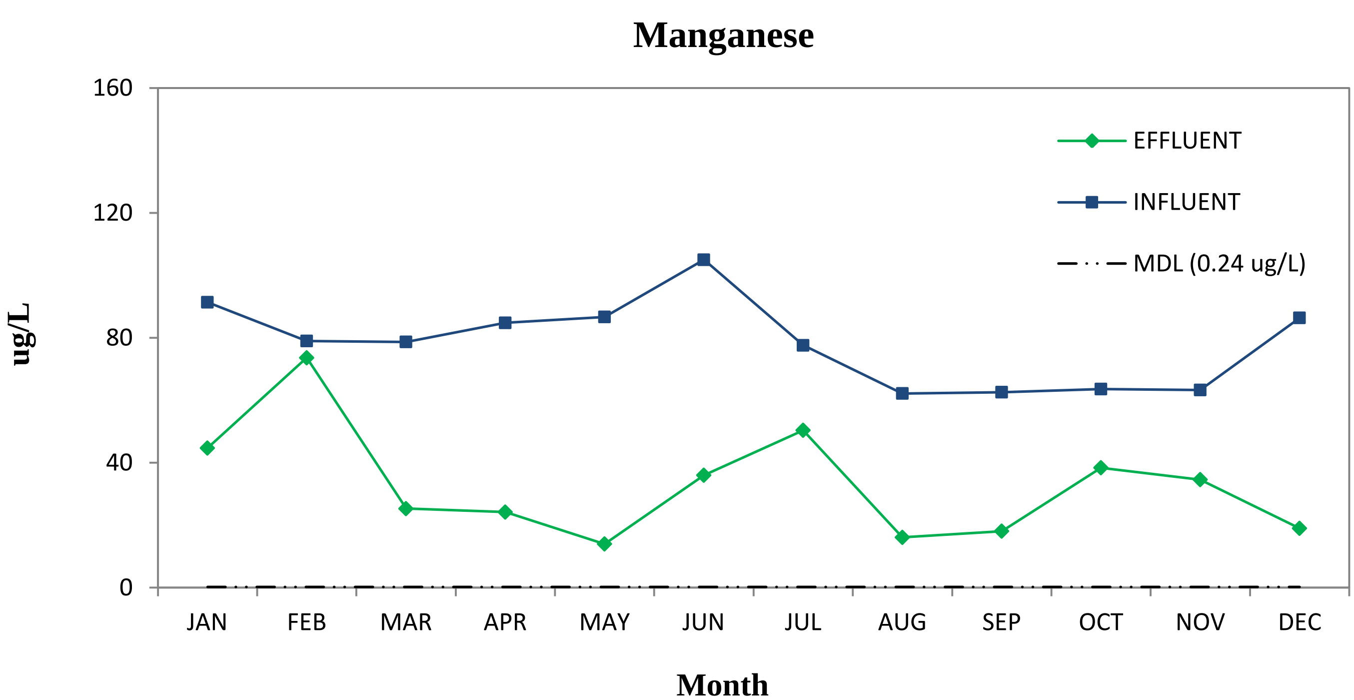
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



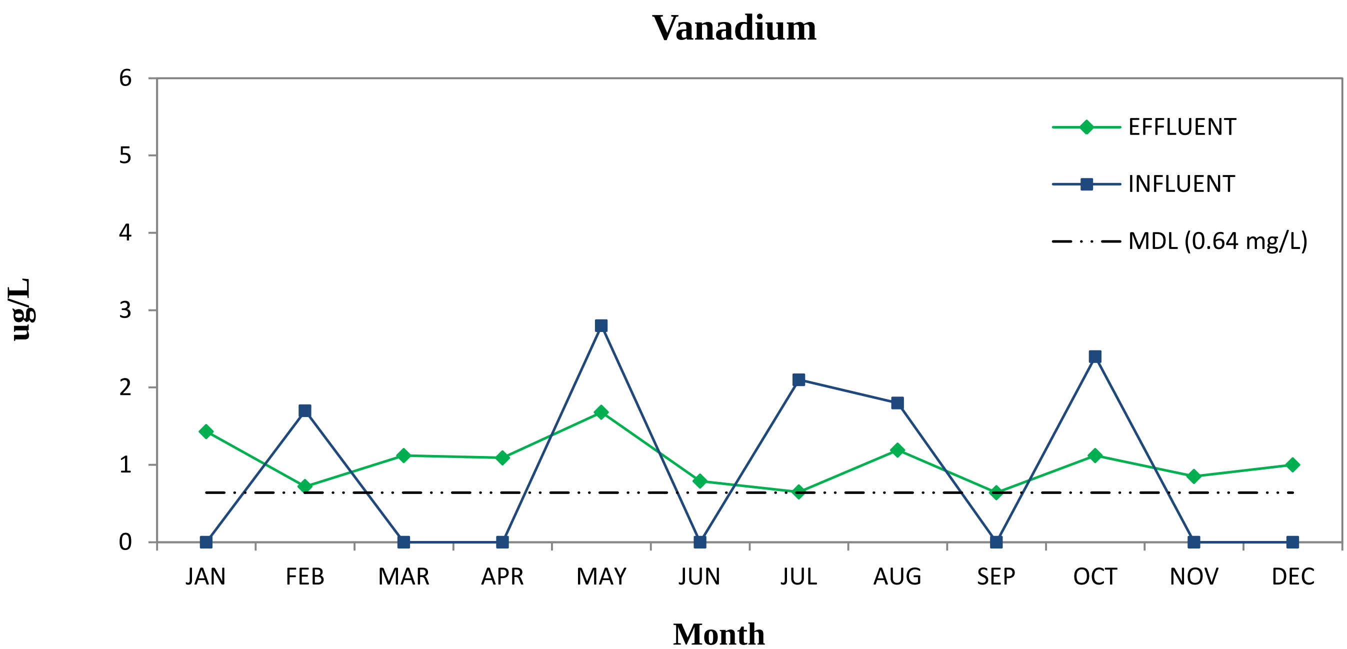



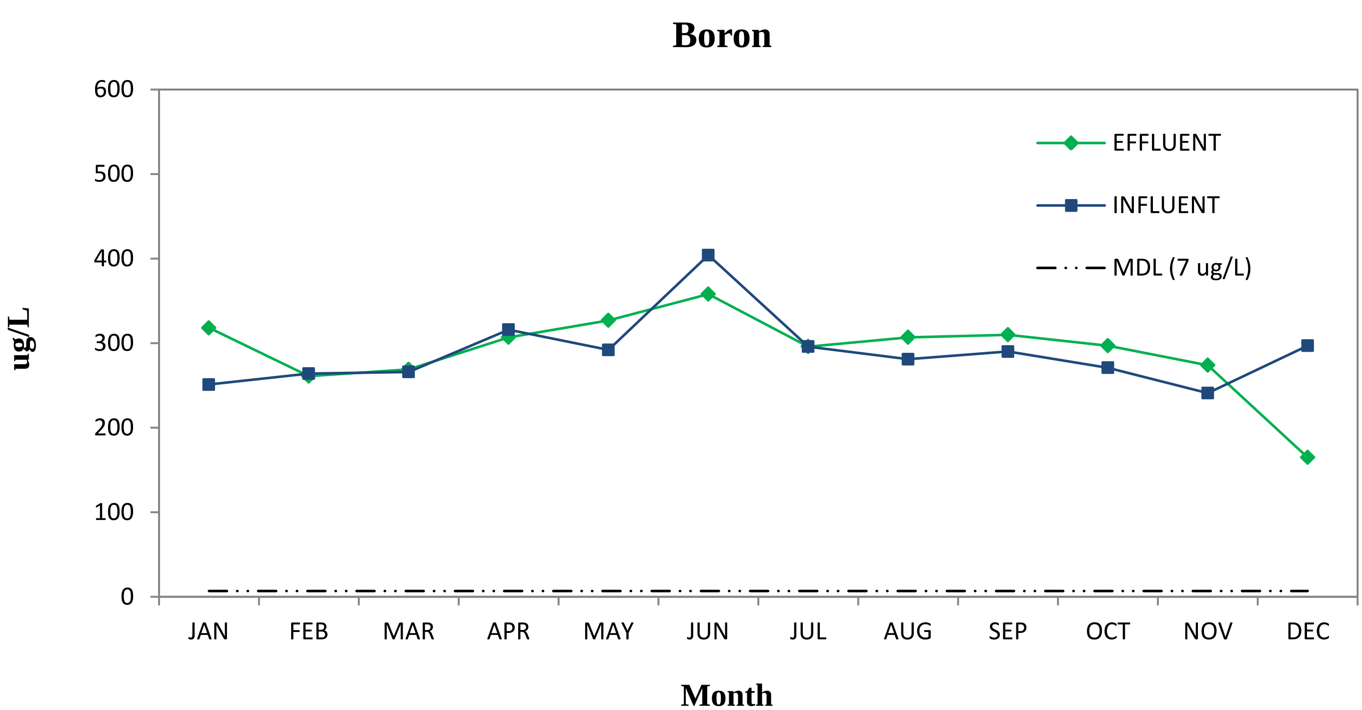
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



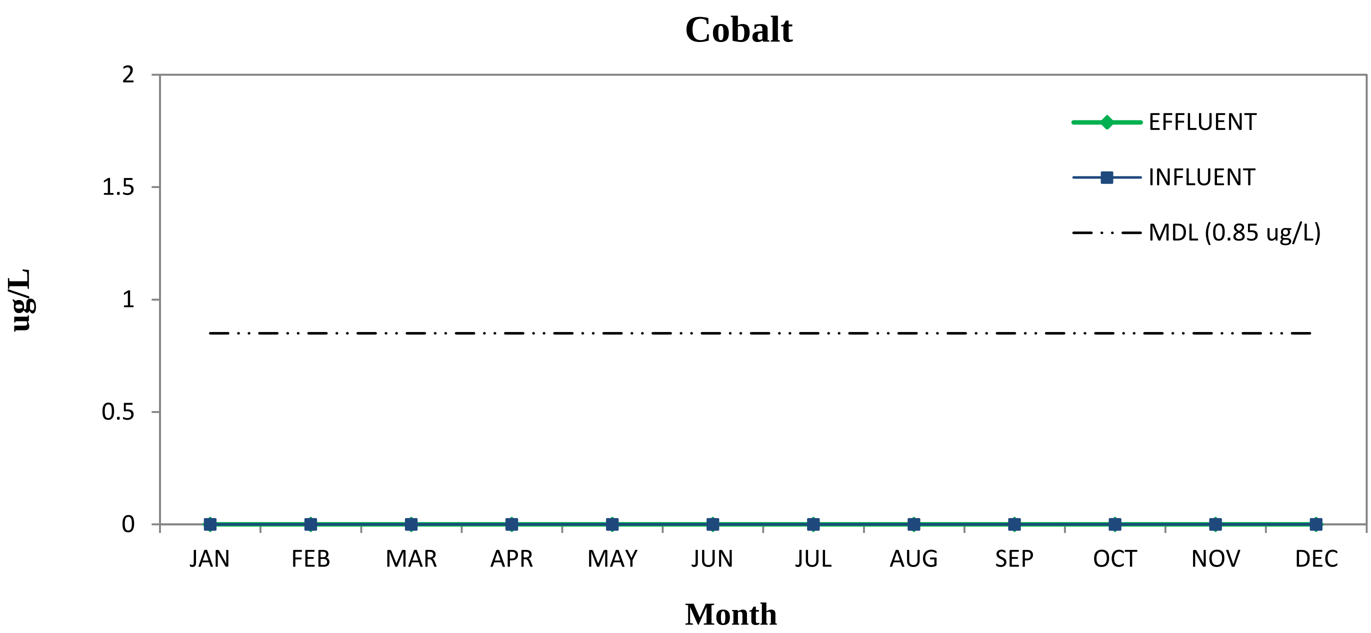



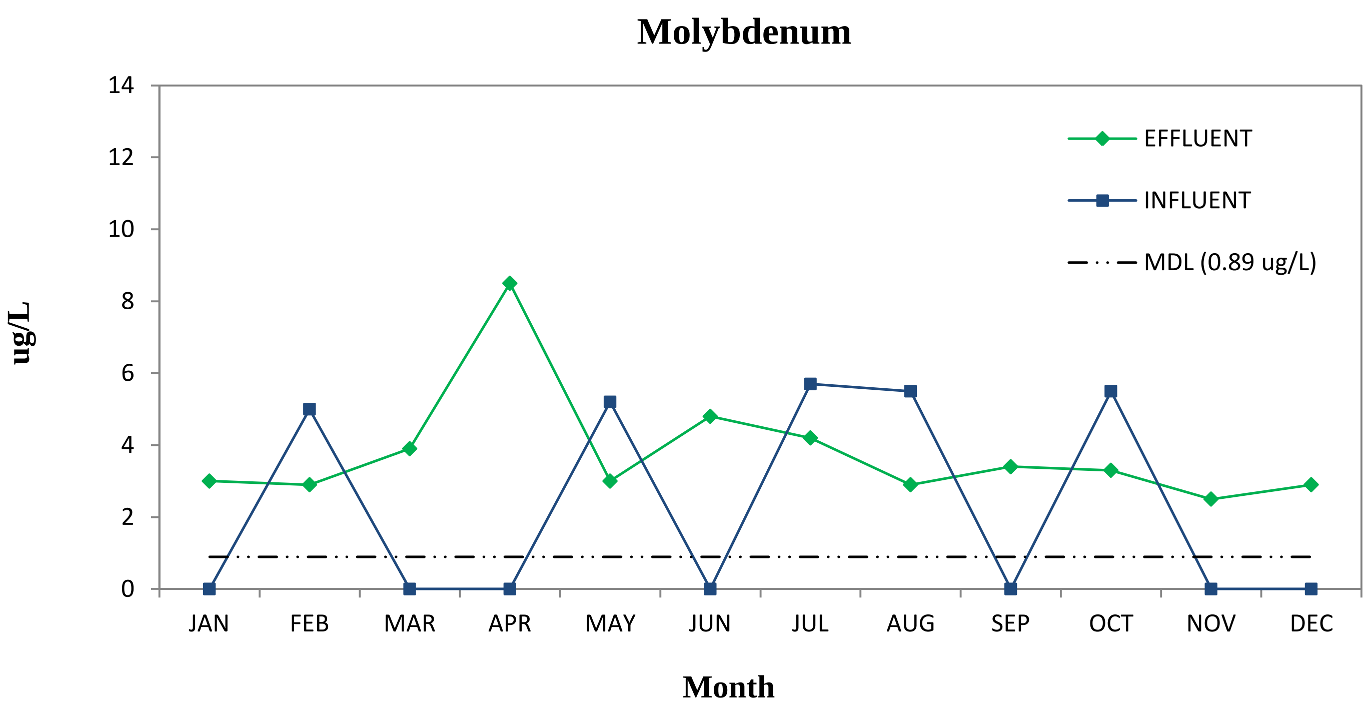
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



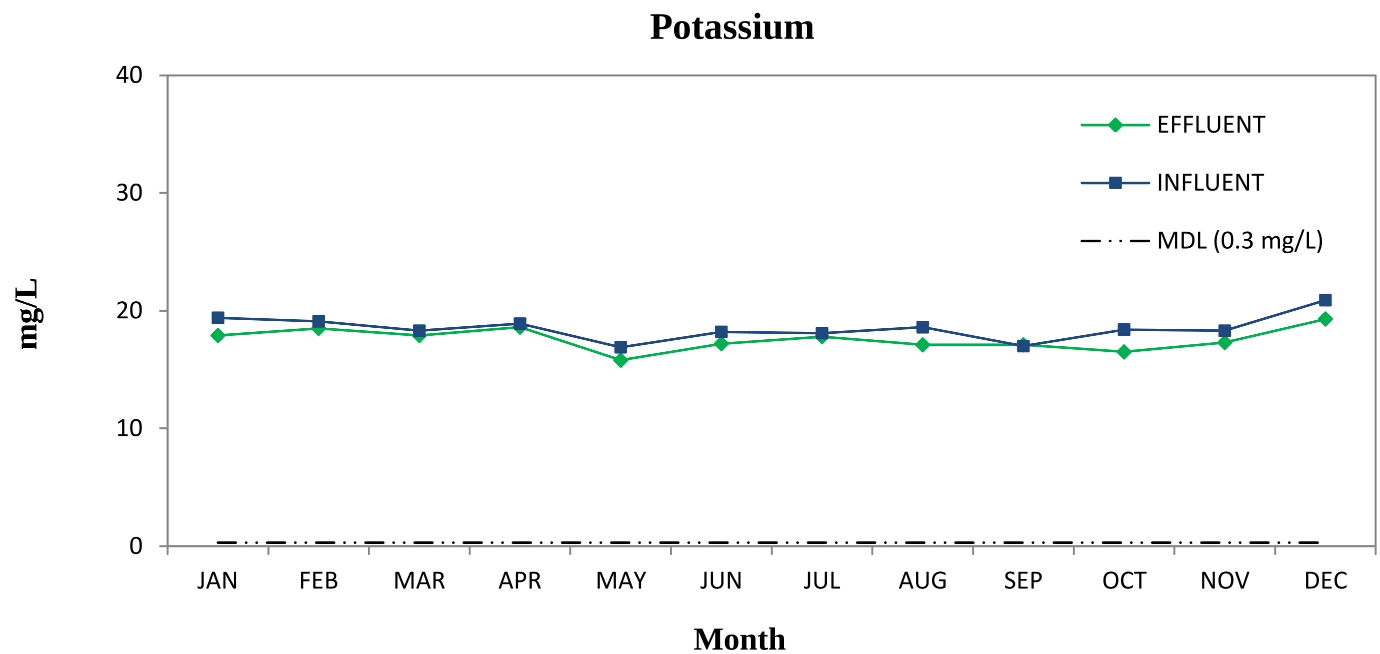



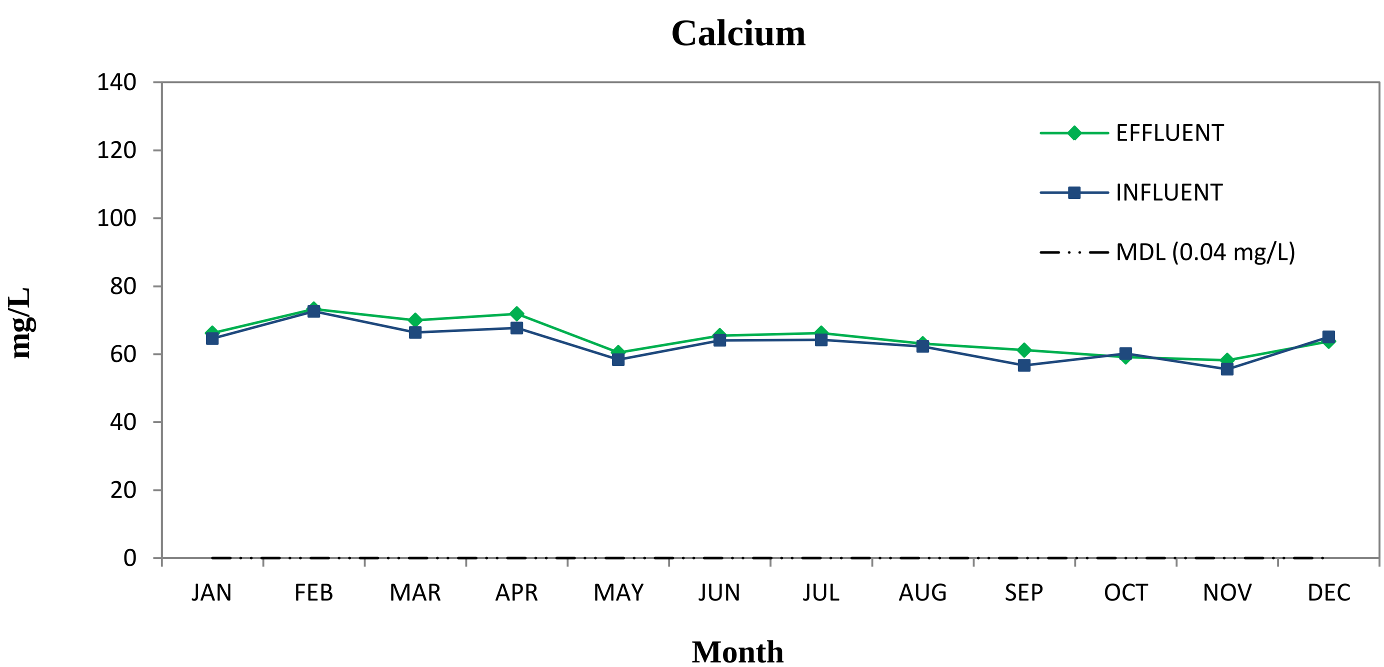
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



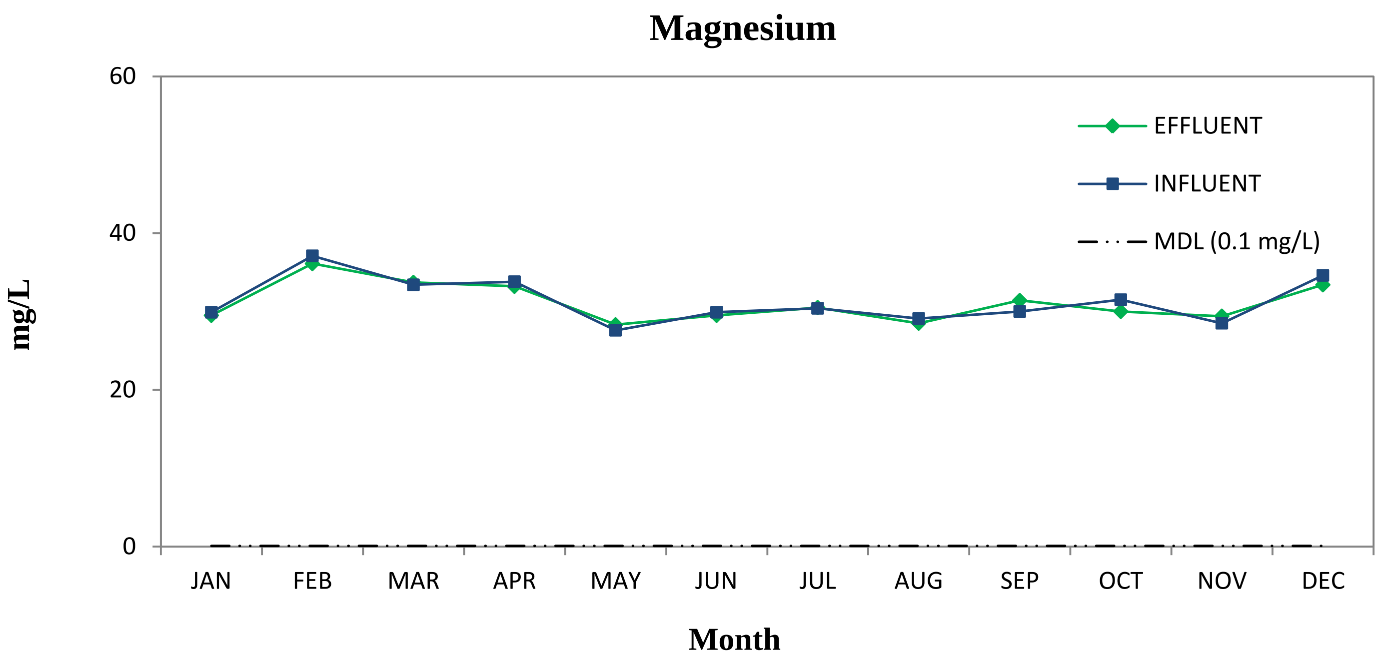



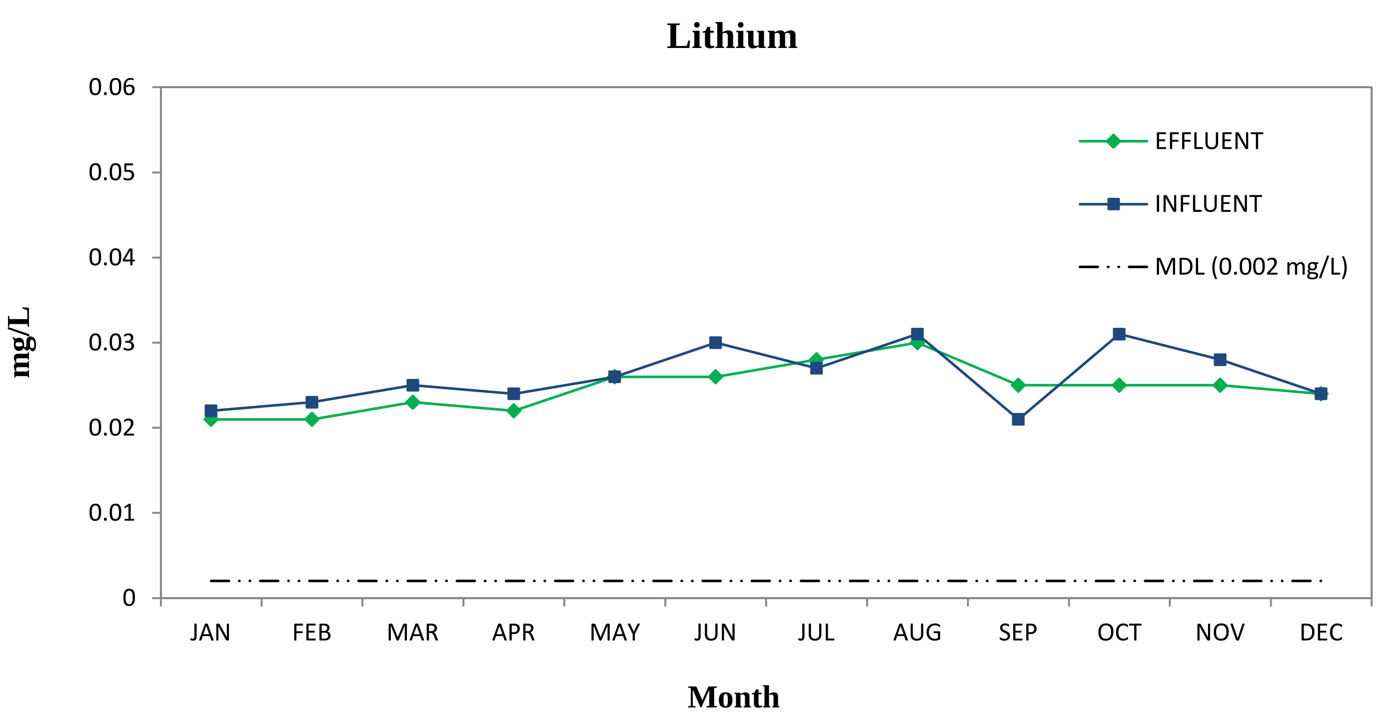
# 2012 South Bay Water Reclamation Plant
# Monthly Averages



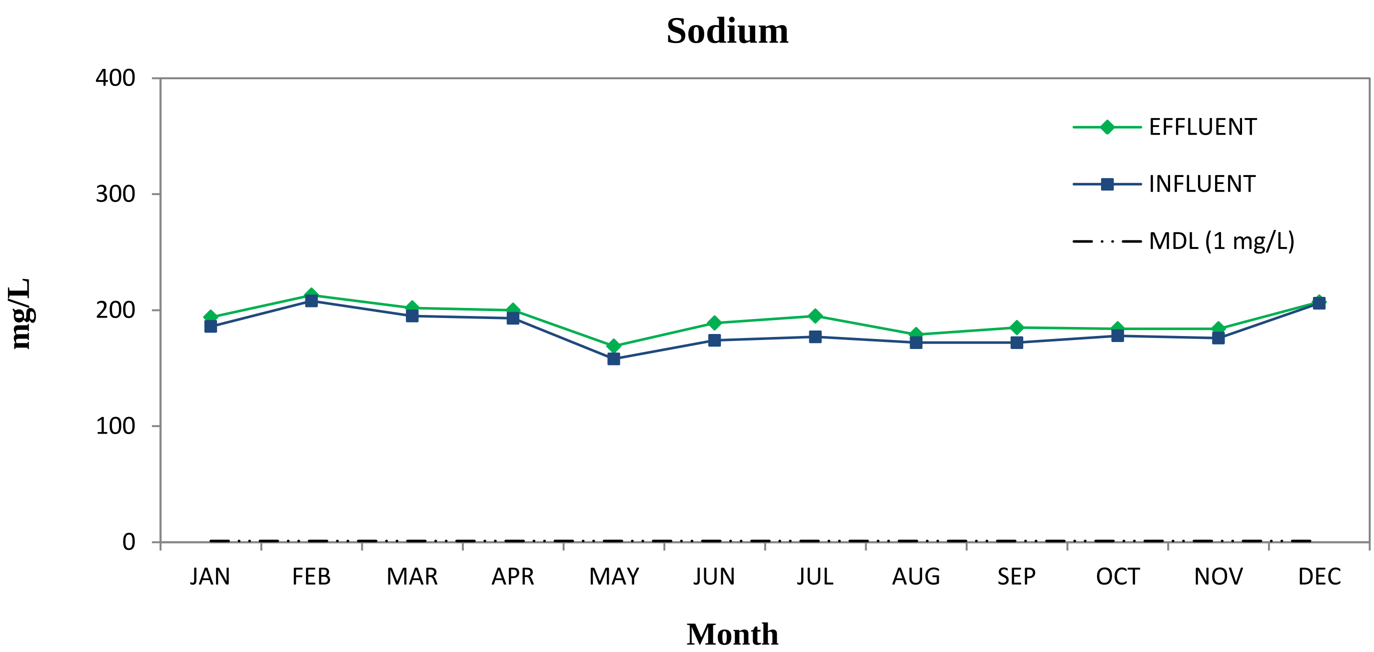



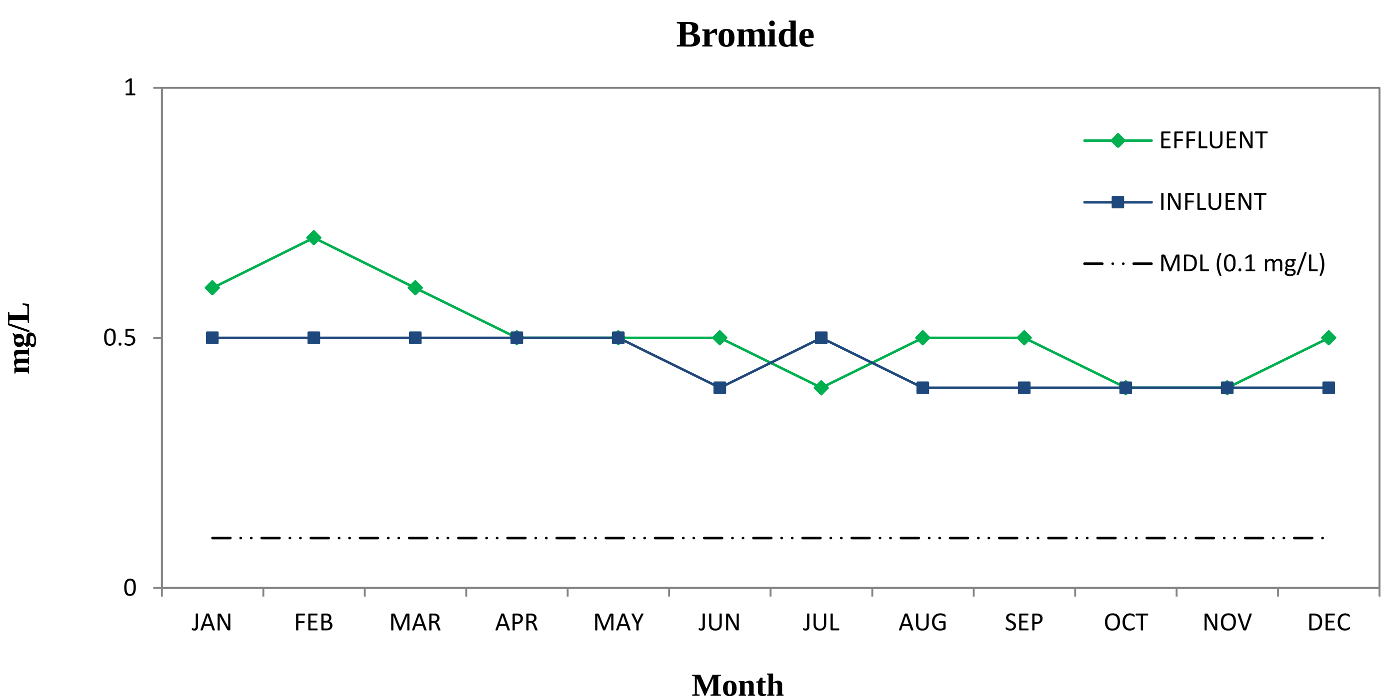
**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



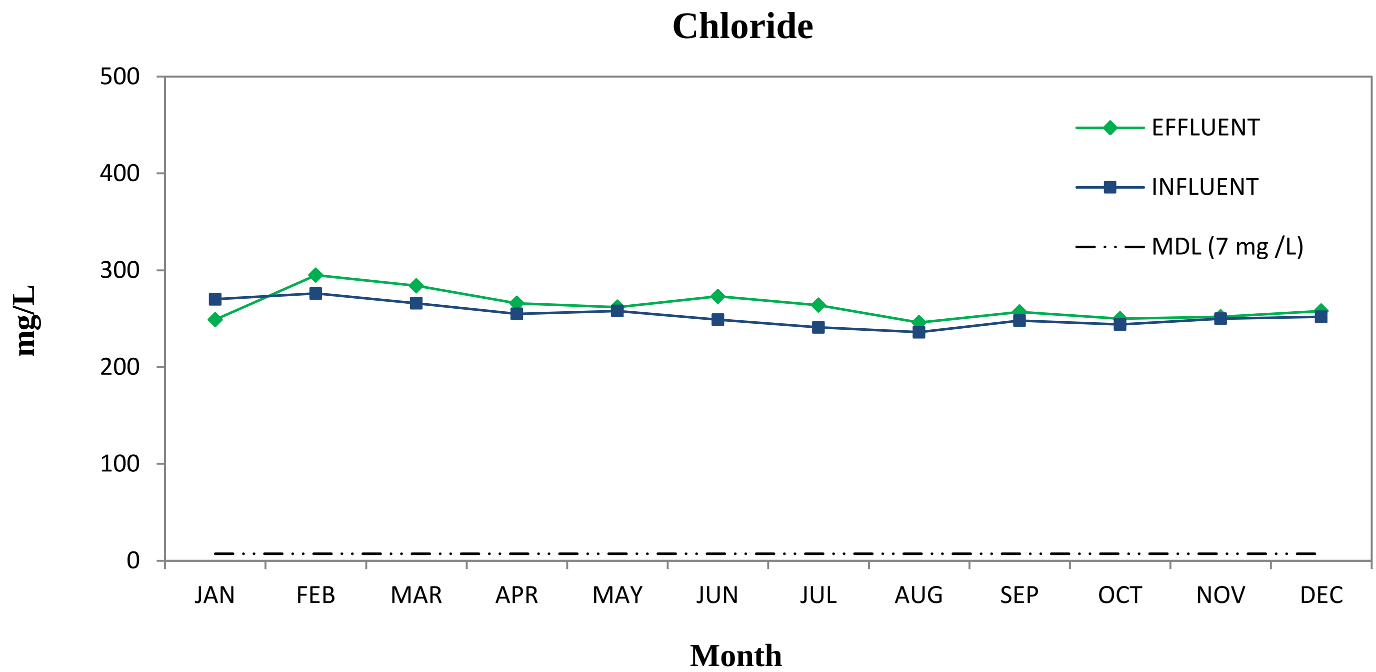



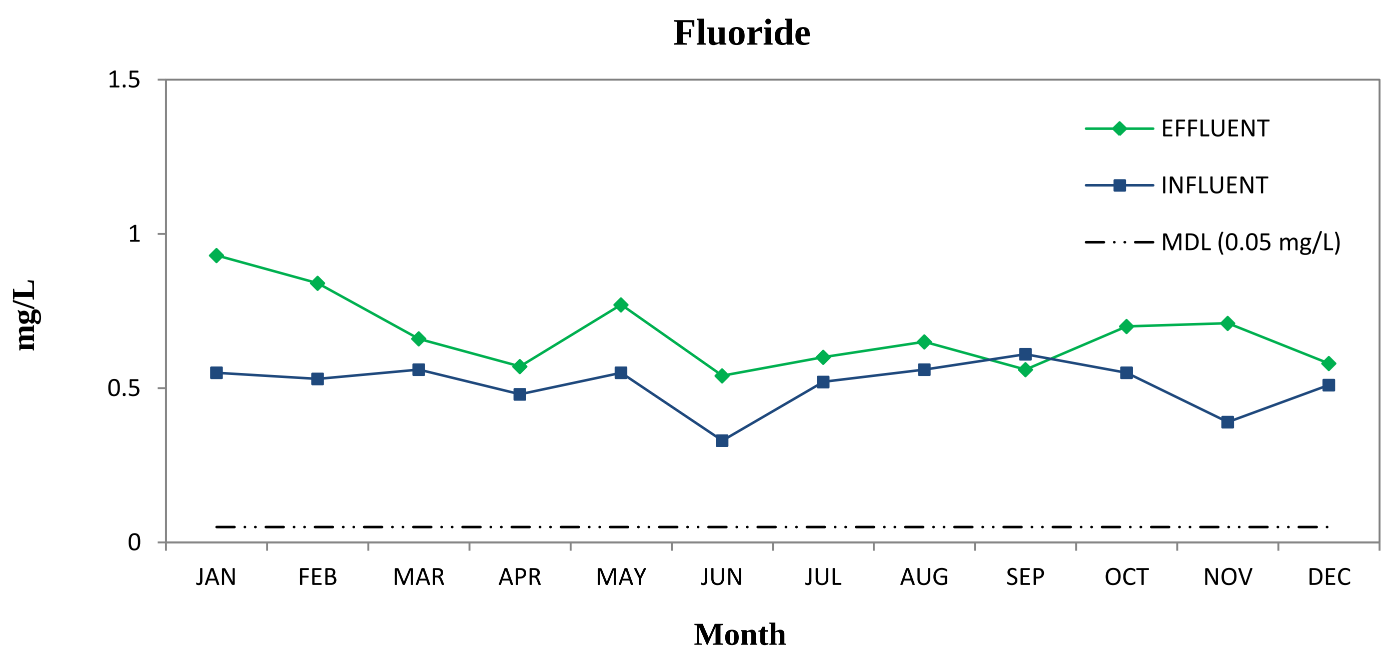
## 2012 South Bay Water Reclamation Plant
## Monthly Averages



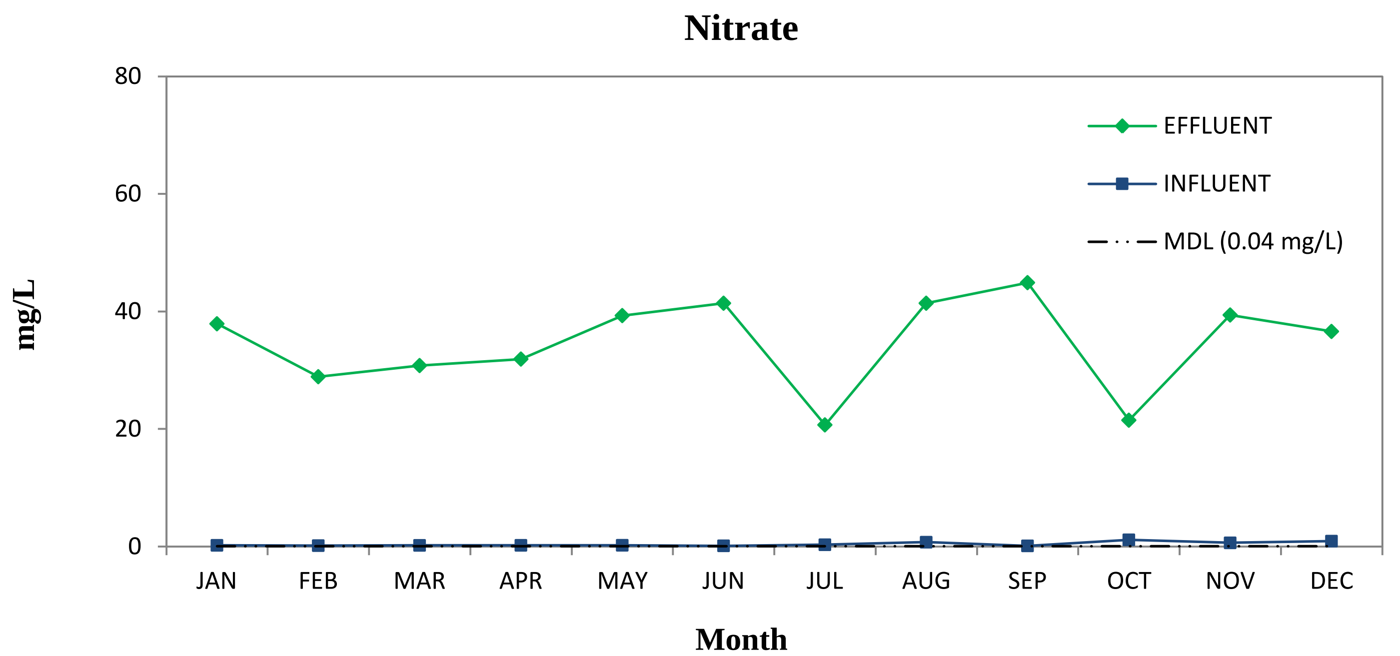



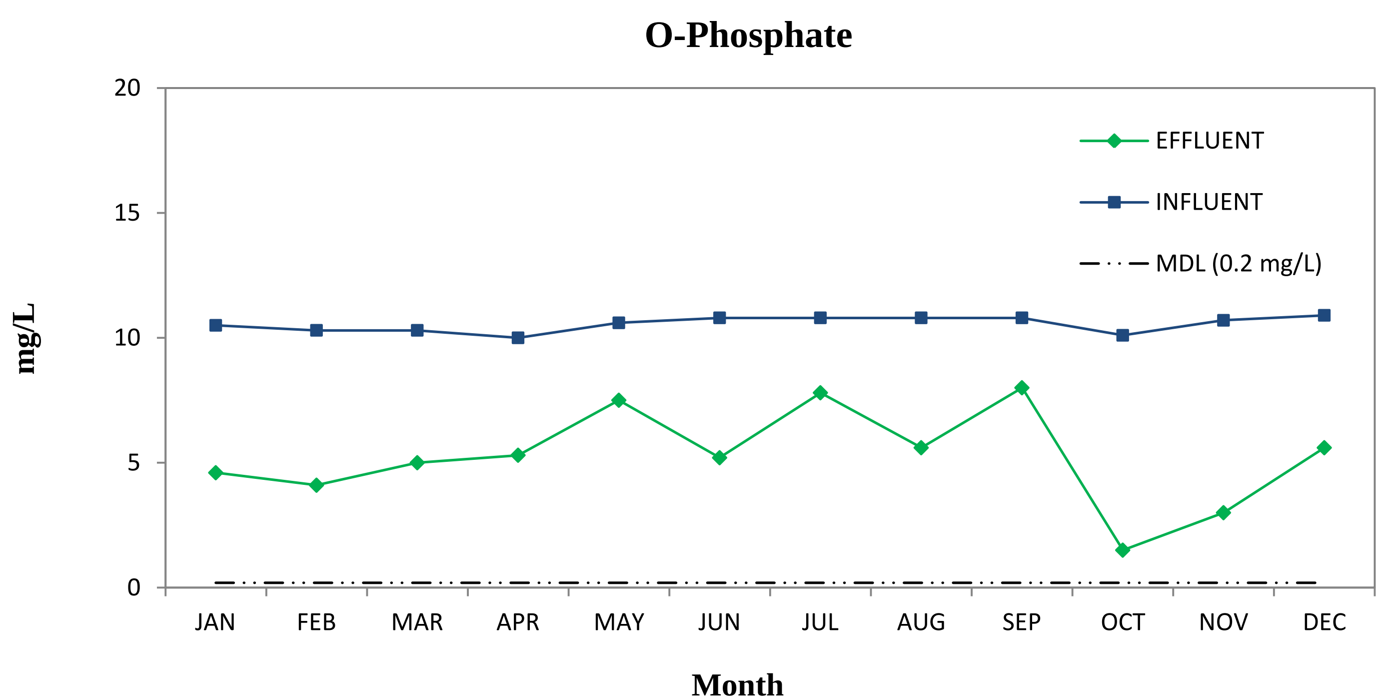
# 2012 South Bay Water Reclamation Plant
# Monthly Averages



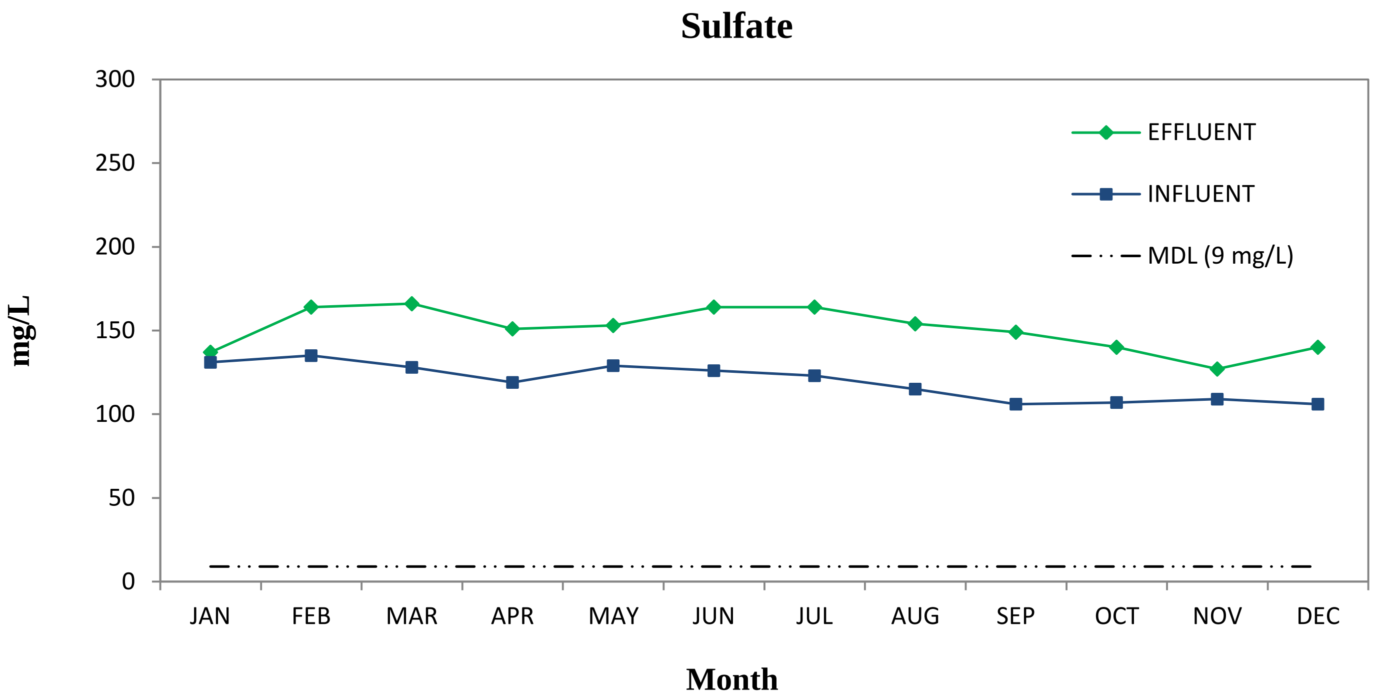



# 2012 South Bay Water Reclamation Plant
# Monthly Averages



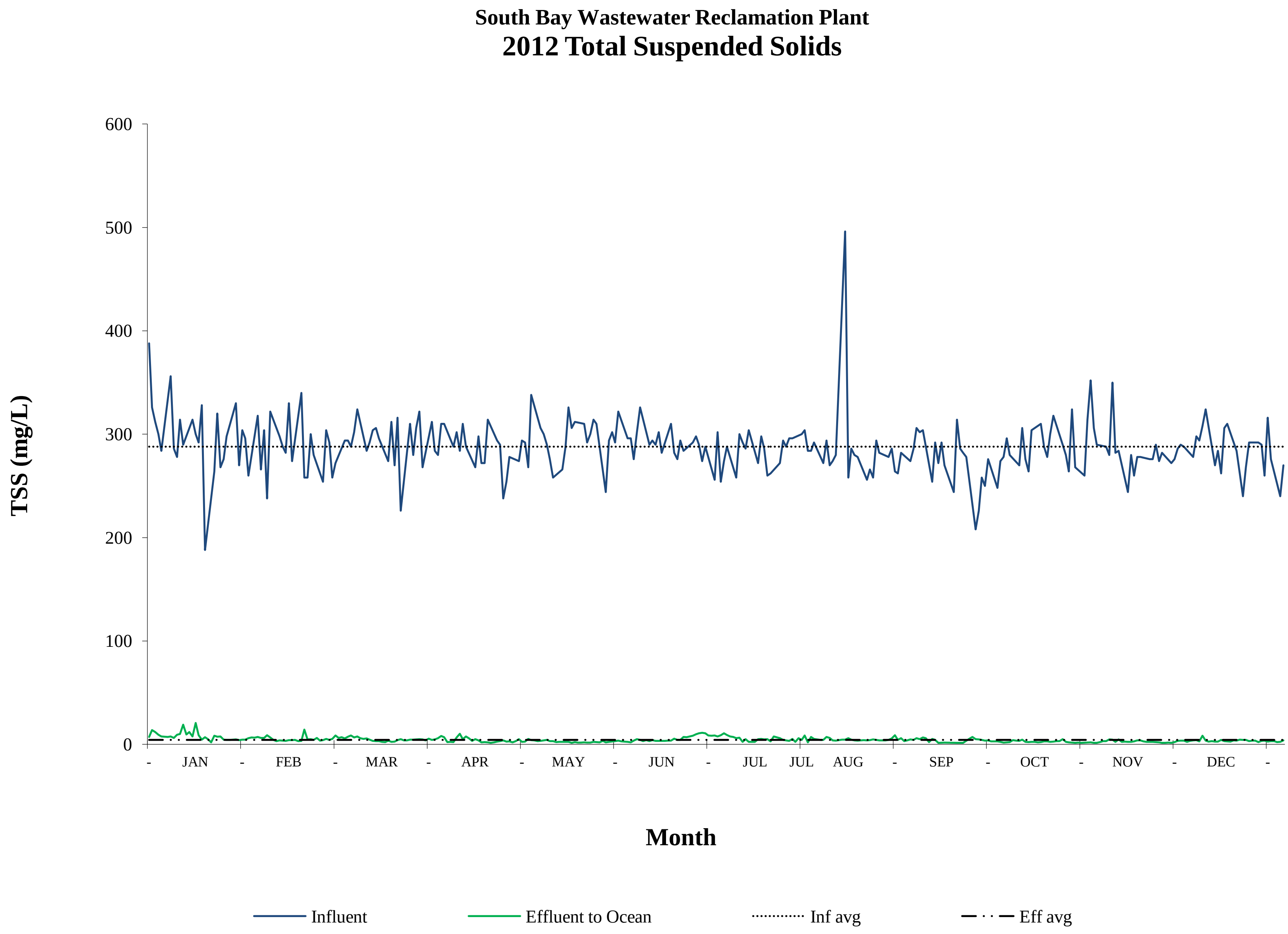



**2012 South Bay Water Reclamation Plant**
**Monthly Averages**



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.

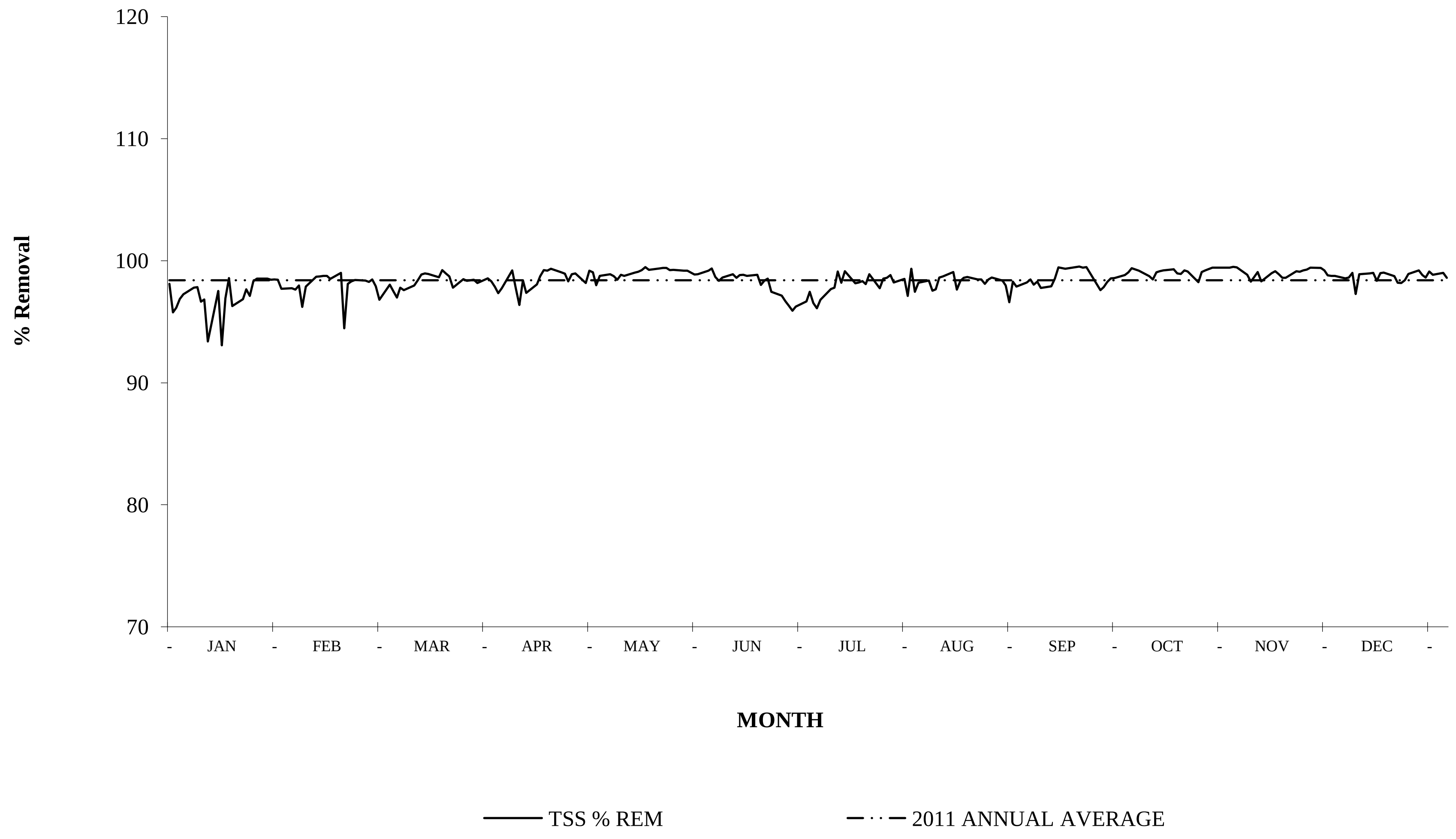


South Bay Wastewater Reclamation Plant
2012 Total Suspended Solids
TSS (mg/L)
600
500
400
300
200
100
0
- JAN - FEB - MAR - APR - MAY - JUN - JUL JUL AUG - SEP - OCT - NOV - DEC -
Month
Influent
Effluent to Ocean
Inf avg
Eff avg

# 2012 Total Suspended Solids

| | Jan | | Feb | | Mar | | Apr | | May | | Jun | | Jul | | Aug | | Sep | | Oct | | Nov | | Dec | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Day** | 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** | 388 | 7.3 | 296 | 4.6 | 272 | 8.7 | 312 | 4.5 | 292 | 2.8 | | 3.0 | 256 | 8.6 | 284 | 7.2 | | 4.0 | 274 | 2.6 | 290 | 1.6 | | 3.5 | | |
| **2** | 326 | 13.8 | 260 | 6.0 | | 6.4 | 284 | 4.8 | 268 | 5.4 | | 2.8 | 302 | 7.7 | 292 | 5.3 | 274 | 4.9 | 278 | 1.7 | | 2.2 | 278 | 4.0 | | |
| **3** | 312 | 12.0 | | 6.7 | | 7.0 | 280 | 6.0 | 338 | 4.2 | 296 | 2.4 | 254 | 8.8 | | 4.9 | 286 | 4.4 | 296 | | | 3.3 | 298 | 4.1 | | |
| **4** | 300 | 9.4 | | 6.6 | 294 | 5.8 | 310 | 8.3 | | 4.0 | 296 | 1.9 | 274 | 10.7 | | 4.4 | 306 | 6.0 | 280 | 2.3 | 288 | 3.3 | 294 | 2.9 | | |
| **5** | 284 | 7.8 | 318 | 7.2 | 294 | 7.4 | 310 | 7.0 | | 3.3 | 276 | 3.7 | 288 | 9.2 | 272 | 4.4 | 302 | 5.2 | | 4.3 | 280 | 4.8 | 308 | 8.4 | | |
| **6** | | | 266 | 6.3 | 288 | 8.7 | | 2.3 | 306 | 3.4 | 302 | 5.0 | | 7.7 | 294 | 7.2 | 304 | 6.8 | | 3.6 | 350 | 4.6 | 324 | 3.6 | | |
| **7** | | 7.3 | 304 | 6.2 | 302 | 6.7 | | 2.6 | 300 | 3.8 | 326 | 4.5 | | 7.3 | 270 | 6.3 | | 6.1 | 270 | 3.4 | 282 | 2.6 | | 2.7 | | |
| **8** | 356 | 7.8 | 238 | 9.0 | 324 | 7.8 | 288 | 2.3 | 290 | 4.5 | | 3.1 | 258 | 6.0 | 274 | 3.8 | | 2.3 | 306 | 4.7 | 284 | 4.8 | | 3.3 | | |
| **9** | 286 | 6.2 | 322 | 6.8 | | 6.0 | 302 | 6.8 | 276 | 3.2 | | 4.1 | 300 | 6.6 | 280 | 3.6 | 254 | 5.3 | 276 | 2.6 | | 2.6 | 270 | 2.8 | | |
| **10** | 278 | 9.3 | | 4.3 | | 5.3 | 284 | 10.3 | 258 | 3.2 | 290 | 3.2 | 292 | 2.6 | | | 292 | 4.3 | 264 | 2.3 | | 2.8 | 284 | 2.8 | | |
| **11** | 314 | 10.0 | | 3.2 | 284 | 5.8 | 310 | 5.0 | | 2.2 | 294 | 4.1 | 286 | 5.1 | | 4.7 | 272 | 1.5 | 304 | 2.4 | 244 | 2.5 | 262 | 4.3 | | |
| **12** | 290 | 19.2 | 298 | 3.9 | 292 | 4.7 | 288 | 7.6 | | 2.5 | 290 | 3.4 | 304 | 2.6 | 496 | 4.6 | 292 | | | 2.5 | 280 | 2.4 | 306 | 3.1 | | |
| **13** | | 9.5 | 288 | 3.7 | 304 | 3.4 | | 5.7 | 266 | 2.6 | 302 | 3.5 | | 2.6 | 258 | 6.1 | 270 | 1.8 | | 2.1 | 260 | 2.9 | 310 | 3.0 | | |
| **14** | | 12.0 | 282 | 3.5 | 306 | 3.2 | | 3.5 | 288 | 2.6 | 282 | 3.5 | | 2.4 | 286 | 4.7 | | | 310 | 2.2 | 278 | 3.9 | | 2.8 | | |
| **15** | 314 | 7.8 | 330 | 4.1 | 296 | 3.2 | 268 | 5.2 | 326 | 2.5 | | 3.5 | 272 | 5.0 | 280 | 3.9 | | | 288 | 3.0 | 278 | 3.9 | | 3.8 | | |
| **16** | 300 | 20.8 | 274 | 4.1 | | 2.6 | 298 | 3.8 | 306 | 1.6 | | 3.7 | 298 | 5.3 | 278 | 3.7 | 244 | | 278 | 3.0 | | 3.0 | 284 | 3.6 | | |
| **17** | 292 | 9.0 | | 4.3 | | 2.2 | 272 | 2.1 | 312 | 2.3 | 310 | 3.6 | 286 | 4.8 | | 3.8 | 314 | 1.5 | 300 | 2.4 | | 2.4 | 262 | 4.7 | | |
| **18** | 328 | 4.7 | | 3.3 | 274 | 3.7 | 272 | 2.2 | | 1.8 | 282 | 5.6 | 260 | 5.0 | | 4.2 | 286 | 1.6 | 318 | 2.8 | 276 | 2.4 | 240 | 4.4 | | |
| **19** | 188 | 7.0 | 340 | 3.4 | 312 | 2.4 | 314 | 2.1 | | 1.8 | 276 | 4.5 | 262 | 2.9 | 256 | 3.9 | 282 | 1.5 | | 3.3 | 276 | 2.5 | 268 | 4.3 | | |
| **20** | | 5.1 | 258 | 14.3 | 270 | 2.8 | | 1.5 | 310 | 2.0 | 294 | 4.3 | | 7.7 | 266 | 4.1 | 278 | | | 3.3 | 290 | 2.3 | 292 | 3.2 | | |
| **21** | | 2.0 | 258 | 4.9 | 316 | 4.1 | | 1.9 | 292 | 1.7 | 284 | 7.2 | | | 258 | 4.9 | | 5.6 | 290 | 5.1 | 274 | 2.0 | | 3.8 | | |
| **22** | 264 | 8.3 | 300 | 5.1 | 226 | 5.0 | 294 | 2.8 | 300 | 1.8 | | 7.0 | 272 | 6.1 | 294 | 4.5 | | 7.2 | 280 | 2.6 | 282 | 1.6 | | 3.7 | | |
| **23** | 320 | 7.5 | 280 | 4.4 | | 4.0 | 290 | 3.1 | 314 | 2.4 | | 7.8 | 294 | 4.3 | 282 | 3.9 | 208 | 5.0 | 264 | 2.1 | | 1.7 | 292 | 2.3 | | |
| **24** | 268 | 7.7 | | 6.2 | | 3.9 | 238 | 4.0 | 310 | 2.3 | 292 | 8.3 | 288 | 4.0 | | 3.9 | 226 | 4.9 | 324 | | | 1.7 | 290 | 3.4 | | |
| **25** | 276 | 4.6 | | 3.6 | 310 | 4.7 | 254 | 2.8 | | 2.0 | 298 | 9.9 | 296 | 3.5 | | 4.0 | 258 | 4.5 | 268 | 1.5 | 272 | 1.6 | 260 | 3.6 | | |
| **26** | 298 | 4.4 | 254 | 4.1 | 280 | 4.6 | 278 | 2.9 | | 3.5 | 290 | 10.7 | 296 | 5.3 | 278 | 4.5 | 250 | 3.6 | | 1.8 | 276 | 2.2 | 316 | 2.8 | | |
| **27** | | 4.4 | 304 | 5.3 | 306 | 4.9 | | 2.1 | 244 | 2.0 | 274 | 11.2 | | 2.5 | 286 | 5.8 | 276 | 3.9 | | 1.5 | 286 | 3.4 | 276 | 3.2 | | |
| **28** | | 4.6 | 292 | 4.5 | 322 | 5.0 | | 3.1 | 294 | 2.4 | 288 | 10.8 | | 6.0 | 264 | 9.0 | | 2.9 | 260 | | 290 | 3.6 | | 3.1 | | |
| **29** | 330 | 4.9 | 258 | 5.4 | 268 | 4.9 | 274 | 5.0 | 302 | | | 8.7 | 300 | 4.5 | 262 | 4.5 | | | 314 | | 288 | 3.6 | | 2.3 | | |
| **30** | 270 | 4.2 | | | | 4.0 | 294 | 2.4 | 292 | 3.3 | | 8.3 | 304 | 8.8 | 282 | 6.0 | 248 | 2.9 | 352 | 2.0 | | 2.6 | 240 | 2.4 | Annual Summary | |
| **31** | 304 | 4.7 | | | | 5.6 | | | 322 | 3.6 | | | 284 | 1.9 | | 3.3 | | | 306 | 1.5 | | | 270 | 3.8 | INF | EFF |
| **Ave** | 299 | 8.1 | 287 | 5.3 | 292 | 5.0 | 287 | 4.1 | 296 | 2.8 | 292 | 5.4 | 284 | 5.5 | 286 | 4.8 | 272 | 4.1 | 291 | 2.7 | 282 | 2.8 | 283 | 3.5 | 288 | 4.5 |
| **Min** | 188 | 2.0 | 238 | 3.2 | 226 | 2.2 | 238 | 1.5 | 244 | 1.6 | 274 | 1.9 | 254 | 1.9 | 256 | 3.3 | 208 | 1.5 | 260 | 1.5 | 244 | 1.6 | 240 | 2.3 | 188 | 1.5 |
| **Max** | 388 | 20.8 | 340 | 14.3 | 324 | 8.7 | 314 | 10.3 | 338 | 5.4 | 326 | 11.2 | 304 | 10.7 | 496 | 9.0 | 314 | 7.2 | 352 | 5.1 | 350 | 4.8 | 324 | 8.4 | 496 | 20.8 |

South Bay Wastewater Reclamation Plant
2012 TSS Percent Removal

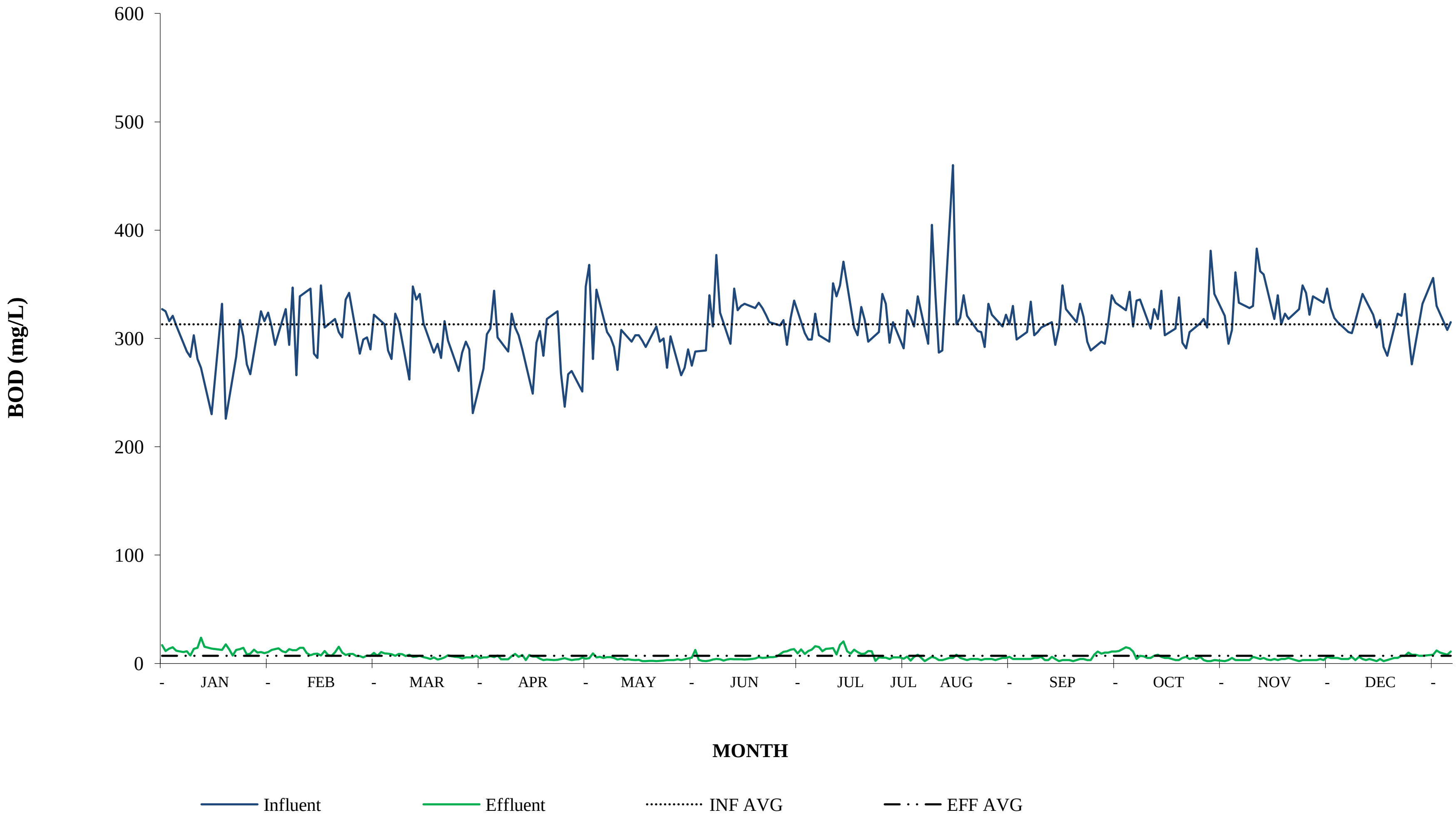


# 2012 TSS Percent Removals

| Day | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 98.1 | 98.4 | 96.8 | 98.6 | 99.0 | | 96.7 | 97.5 | | 99.1 | 99.4 | | |
| 2 | 95.8 | 97.7 | | 98.3 | 98.0 | | 97.5 | 98.2 | 98.2 | 99.4 | | 98.6 | |
| 3 | 96.2 | | | 97.9 | 98.8 | 99.2 | 96.5 | | 98.5 | | | 98.6 | |
| 4 | 96.9 | | 98.0 | 97.3 | | 99.4 | 96.1 | | 98.0 | 99.2 | 98.9 | 99.0 | |
| 5 | 97.2 | 97.7 | 97.5 | 97.7 | | 98.7 | 96.8 | 98.4 | 98.3 | | 98.3 | 97.3 | |
| 6 | | 97.6 | 97.0 | | 98.9 | 98.3 | | 97.6 | 97.8 | | 98.7 | 98.9 | |
| 7 | | 98.0 | 97.8 | | 98.7 | 98.6 | | 97.7 | | 98.7 | 99.1 | | |
| 8 | 97.8 | 96.2 | 97.6 | 99.2 | 98.4 | | 97.7 | 98.6 | | 98.5 | 98.3 | | |
| 9 | 97.8 | 97.9 | | 97.7 | 98.8 | | 97.8 | 98.7 | 97.9 | 99.1 | | 99.0 | |
| 10 | 96.6 | | | 96.4 | 98.8 | 98.9 | 99.1 | | 98.5 | 99.1 | | 99.0 | |
| 11 | 96.8 | | 98.0 | 98.4 | | 98.6 | 98.2 | | 99.4 | 99.2 | 99.0 | 98.4 | |
| 12 | 93.4 | 98.7 | 98.4 | 97.4 | | 98.8 | 99.1 | 99.1 | | | 99.1 | 99.0 | |
| 13 | | 98.7 | 98.9 | | 99.0 | 98.8 | | 97.6 | 99.3 | | 98.9 | 99.0 | |
| 14 | | 98.8 | 99.0 | | 99.1 | 98.8 | | 98.4 | | 99.3 | 98.6 | | |
| 16 | 97.5 | 98.8 | 98.9 | 98.1 | 99.2 | | 98.2 | 98.6 | | 99.0 | 98.6 | | |
| 16 | 93.1 | 98.5 | | 98.7 | 99.5 | | 98.2 | 98.7 | | 98.9 | | 98.7 | |
| 17 | 96.9 | | | 99.2 | 99.3 | 98.8 | 98.3 | | 99.5 | 99.2 | | 98.2 | |
| 18 | 98.6 | | 98.6 | 99.2 | | 98.0 | 98.1 | | 99.4 | 99.1 | 99.1 | 98.2 | |
| 19 | 96.3 | 99.0 | 99.2 | 99.3 | | 98.4 | 98.9 | 98.5 | 99.5 | | 99.1 | 98.4 | |
| 20 | | 94.5 | 99.0 | | 99.4 | 98.5 | | 98.5 | | | 99.2 | 98.9 | |
| 21 | | 98.1 | 98.7 | | 99.4 | 97.5 | | 98.1 | | 98.2 | 99.3 | | |
| 22 | 96.8 | 98.3 | 97.8 | 99.0 | 99.4 | | 97.8 | 98.5 | | 99.1 | 99.4 | | |
| 23 | 97.7 | 98.4 | | 98.9 | 99.2 | | 98.5 | 98.6 | 97.6 | 99.2 | | 99.2 | |
| 24 | 97.1 | | | 98.3 | 99.3 | 97.1 | 98.6 | | 97.8 | | | 98.8 | |
| 25 | 98.3 | | 98.5 | 98.9 | | 96.7 | 98.8 | | 98.3 | 99.4 | 99.4 | 98.6 | |
| 26 | 98.5 | 98.4 | 98.4 | 99.0 | | 96.3 | 98.2 | 98.4 | 98.6 | | 99.2 | 99.1 | |
| 27 | | 98.3 | 98.4 | | 99.2 | 95.9 | | 98.0 | 98.6 | | 98.8 | 98.8 | |
| 28 | | 98.5 | 98.4 | | 99.2 | 96.3 | | 96.6 | | | 98.8 | | |
| 29 | 98.5 | 97.9 | 98.2 | 98.2 | 100.0 | | 98.5 | 98.3 | | | 98.8 | | |
| 30 | 98.4 | | | 99.2 | 98.9 | | 97.1 | 97.9 | 98.8 | 99.4 | | 99.0 | |
| 31 | 98.5 | | | | 98.9 | | 99.3 | | | 99.5 | | 98.6 | Annual Summary |
| **Average** | 97.1 | 98.0 | 98.2 | 98.4 | 99.1 | 98.1 | 98.0 | 98.2 | 98.6 | 99.1 | 98.9 | 98.7 | 98.3 |
| **Minimum** | 93.1 | 94.5 | 96.8 | 96.4 | 98.0 | 95.9 | 96.1 | 96.6 | 97.6 | 98.2 | 98.3 | 97.3 | 93.1 |
| **Maximum** | 98.6 | 99.0 | 99.2 | 99.3 | 100.0 | 99.4 | 99.3 | 99.1 | 99.5 | 99.5 | 99.4 | 99.2 | 100.0 |

**South Bay Wastewater Reclamation Plant**

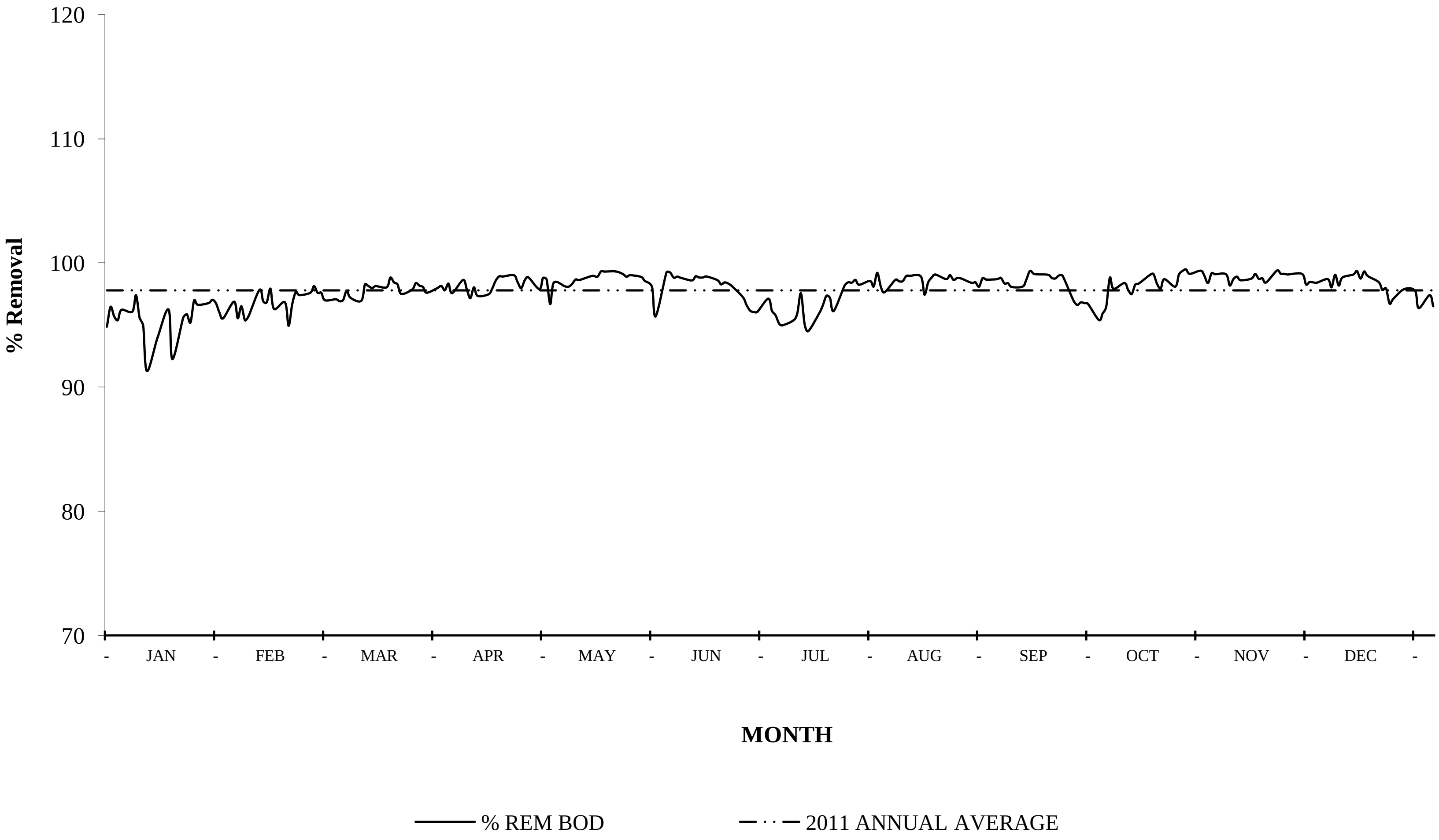
## 2012 Biochemical Oxygen Demand



# 2012 Biochemical Oxygen Demand

| | Jan | | Feb | | Mar | | Apr | | May | | Jun | | Jul | | Aug | | Sep | | Oct | | Nov | | Dec | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Day** | 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** | 327 | 17 | 311 | 13 | 322 | 10 | 272 | 5 | 368 | 5 | | 3 | 305 | 9 | 311 | 6 | | 4 | 343 | 14 | 333 | 3 | | 4 | | |
| **2** | 325 | 12 | 294 | 13 | | 7 | 304 | 6 | 281 | 9 | | 2 | 299 | 12 | 339 | 8 | 306 | 4 | 311 | 11 | | 3 | 306 | 4 | | |
| **3** | 316 | 14 | | 14 | | 11 | 309 | 7 | 345 | 5 | 289 | 2 | 299 | 13 | | 5 | 334 | 4 | 335 | 4 | | 3 | 305 | 6 | | |
| **4** | 321 | 15 | | 11 | 313 | 9 | 344 | 6 | | 6 | 340 | 3 | 323 | 16 | | 2 | 303 | 5 | 336 | 7 | 328 | 3 | 316 | 3 | | |
| **5** | 312 | 12 | 327 | 10 | 289 | 9 | 301 | 7 | | 5 | 311 | 4 | 303 | 15 | 295 | 4 | 306 | 5 | | 7 | 330 | 6 | 329 | 6 | | |
| **6** | | | 294 | 13 | 281 | 8 | | 4 | 306 | 6 | 377 | 4 | | 11 | 405 | 6 | 310 | 6 | | 5 | 383 | 5 | 341 | 4 | | |
| **7** | | 10 | 347 | 12 | 323 | 7 | | 4 | 301 | 6 | 324 | 4 | | 13 | 341 | 5 | | 3 | 309 | 5 | 362 | 4 | | 3 | | |
| **8** | 288 | 11 | 266 | 12 | 315 | 9 | 288 | 4 | 292 | 5 | | 3 | 297 | 14 | 287 | 3 | | 3 | 327 | 7 | 359 | 5 | | 4 | | |
| **9** | 283 | 7 | 339 | 15 | | 9 | 323 | 7 | 271 | 4 | | 4 | 351 | 14 | 289 | 3 | 315 | 6 | 318 | 8 | | 4 | 322 | 3 | | |
| **10** | 303 | 13 | | 14 | | 7 | 310 | 9 | 308 | 4 | 295 | 4 | 339 | 8 | | | 294 | 4 | 344 | 6 | | 3 | 310 | 2 | | |
| **11** | 281 | 14 | | 10 | 262 | 8 | 303 | 6 | | 3 | 346 | 4 | 349 | 17 | | 5 | 310 | 2 | 303 | 5 | 318 | 4 | 317 | 4 | | |
| **12** | 273 | 24 | 346 | 7 | 348 | 6 | 290 | 8 | | 4 | 326 | 4 | 371 | 20 | 460 | 5 | 349 | 3 | | 5 | 340 | 3 | 292 | 2 | | |
| **13** | | 15 | 286 | 9 | 336 | 6 | | 3 | 297 | 3 | 330 | 4 | | 11 | 313 | 8 | 327 | 3 | | 4 | 313 | 4 | 284 | 3 | | |
| **14** | | | 282 | 9 | 341 | 7 | | 8 | 303 | 3 | 332 | 4 | | 9 | 319 | 5 | | 3 | 309 | 3 | 323 | 4 | | 4 | | |
| **15** | 230 | 14 | 349 | 7 | 314 | 6 | 249 | 6 | 303 | 3 | | 4 | 310 | 13 | 340 | 4 | | 2 | 338 | 3 | 318 | 5 | | 5 | | |
| **16** | | | 310 | 12 | | 5 | 296 | 6 | 298 | 2 | | 4 | 303 | 10 | 321 | 3 | 315 | 3 | 296 | 5 | | 4 | 323 | 5 | | |
| **17** | | | | 8 | | 4 | 307 | 4 | 292 | 2 | 328 | 5 | 329 | 9 | | 4 | 332 | 4 | 291 | 6 | | 3 | 321 | 7 | | |
| **18** | 332 | 13 | | 7 | 287 | 6 | 284 | 3 | | 2 | 333 | 6 | 317 | 9 | | 4 | 320 | 4 | 306 | 4 | 327 | 2 | 341 | 7 | | |
| **19** | 226 | 18 | 318 | 10 | 295 | 3 | 318 | 3 | | 2 | 328 | 5 | 297 | 12 | 307 | 4 | 297 | 3 | | 5 | 349 | 3 | 305 | 10 | | |
| **20** | | 13 | 306 | 16 | 282 | 4 | | 3 | 311 | 2 | 322 | 5 | | 11 | 306 | 3 | 289 | 3 | | 4 | 342 | 3 | 276 | 8 | | |
| **21** | | 7 | 301 | 10 | 316 | 5 | | 3 | 297 | | 315 | 6 | | 2 | 292 | 4 | | 8 | 314 | 6 | 322 | 3 | | 8 | | |
| **22** | 283 | 13 | 336 | 8 | 298 | 7 | 325 | 3 | 300 | 3 | | 6 | 306 | 6 | 332 | 4 | | 11 | 318 | 3 | 339 | 3 | | 7 | | |
| **23** | 317 | 13 | 342 | 9 | | 7 | 268 | 4 | 273 | 3 | | 6 | 341 | 5 | 322 | 4 | 297 | 9 | 310 | 2 | | 3 | 332 | 7 | | |
| **24** | 302 | 15 | | 9 | | 6 | 237 | 5 | 302 | 3 | 312 | 9 | 332 | 5 | | 3 | 295 | 10 | 381 | 2 | | 4 | | | | |
| **25** | 276 | 8 | | 7 | 270 | 6 | 267 | 4 | | 3 | 317 | 11 | 296 | 4 | | 4 | 315 | 10 | 341 | 3 | 333 | 3 | | | | |
| **26** | 267 | 9 | 286 | 7 | 287 | 5 | 270 | 3 | | 4 | 294 | 11 | 315 | 6 | 311 | 5 | 340 | 11 | | | 346 | 6 | 356 | 8 | | |
| **27** | | 13 | 299 | 6 | 297 | 5 | | 4 | 266 | 3 | 319 | 13 | | | 322 | 5 | 333 | 11 | | | 328 | 5 | 330 | 12 | | |
| **28** | | 10 | 301 | 7 | 290 | 6 | | 4 | 273 | 4 | 335 | 13 | | 5 | 313 | 6 | | 12 | 321 | 2 | 319 | 5 | | 10 | | |
| **29** | 325 | 11 | 290 | 7 | 231 | 6 | 251 | 5 | 290 | | | 9 | 291 | 4 | 330 | 4 | | | 295 | 3 | 315 | 5 | | 9 | | |
| **30** | 316 | 9 | | | | 7 | 348 | 4 | 275 | 5 | | 13 | 326 | 6 | 299 | 4 | 326 | 15 | 308 | 5 | | 4 | 308 | 8 | Annual Summary | |
| **31** | 324 | 11 | | | | 5 | | | 288 | 12 | | | 320 | 3 | | 4 | | | 361 | 3 | | | 315 | 11 | INF | EFF |
| **Avg** | 297 | 13 | 311 | 10 | 300 | 7 | 294 | 5 | 297 | 4 | 324 | 6 | 318 | 10 | 325 | 4 | 315 | 6 | 322 | 5 | 335 | 4 | 316 | 6 | 313 | 7 |
| **Min** | 226 | 7 | 266 | 6 | 231 | 3 | 237 | 3 | 266 | 2 | 289 | 2 | 291 | 2 | 287 | 2 | 289 | 2 | 291 | 2 | 313 | 2 | 276 | 2 | 226 | 2 |
| **Max** | 332 | 24 | 349 | 16 | 348 | 11 | 348 | 9 | 368 | 12 | 377 | 13 | 371 | 20 | 460 | 8 | 349 | 15 | 381 | 14 | 383 | 6 | 356 | 12 | 460 | 24 |

South Bay Wastewater Reclamation Plant
2012 BOD Percent Removal



# 2012 BOD Percent Removals

| Day | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual Summary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 94.9 | 96.0 | 97.0 | 98.0 | 98.7 | | 97.1 | 98.1 | | 95.9 | 99.1 | | |
| **2** | 96.5 | 95.5 | | 98.2 | 96.7 | | 96.2 | 97.6 | 98.7 | 96.5 | | 98.7 | |
| **3** | 95.7 | | | 97.8 | 98.4 | 99.2 | 95.8 | | 98.8 | 98.8 | | 98.0 | |
| **4** | 95.4 | | 97.1 | 98.3 | | 99.2 | 95.1 | | 98.3 | 97.9 | 99.1 | 99.1 | |
| **5** | 96.2 | 96.9 | 96.9 | 97.6 | | 98.8 | 95.0 | 98.6 | 98.4 | | 98.2 | 98.2 | |
| **6** | | 95.5 | 97.0 | | 98.1 | 98.9 | | 98.5 | 98.1 | | 98.7 | 98.8 | |
| **7** | | 96.5 | 97.8 | | 98.1 | 98.8 | | 98.5 | | 98.4 | 98.9 | | |
| **8** | 96.1 | 95.4 | 97.2 | 98.6 | 98.3 | | 95.4 | 99.0 | | 97.9 | 98.6 | | |
| **9** | 97.4 | 95.7 | | 97.9 | 98.7 | | 96.0 | 99.0 | 98.1 | 97.5 | | 99.1 | |
| **10** | 95.6 | | | 97.2 | 98.6 | 98.6 | 97.6 | | 98.6 | 98.3 | | 99.4 | |
| **11** | 94.9 | | 96.9 | 98.0 | | 98.9 | 95.1 | | 99.4 | 98.3 | 98.7 | 98.7 | |
| **12** | 91.3 | 97.8 | 98.3 | 97.4 | | 98.8 | 94.5 | 98.9 | 99.1 | | 99.1 | 99.3 | |
| **13** | | 96.9 | 98.1 | | 98.9 | 98.8 | | 97.4 | 99.1 | | 98.7 | 98.9 | |
| **14** | | 96.8 | 98.0 | | 99.0 | 98.9 | | 98.4 | | 99.0 | 98.8 | | |
| **15** | 94.0 | 97.9 | 98.1 | 97.5 | 98.9 | | 95.9 | 98.8 | | 99.1 | 98.4 | | |
| **16** | | 96.3 | | 97.9 | 99.3 | | 96.6 | 99.1 | 99.0 | 98.3 | | 98.5 | |
| **17** | | | | 98.6 | 99.3 | 98.6 | 97.3 | | 98.8 | 97.9 | | 97.8 | |
| **18** | 96.2 | | 98.0 | 98.9 | | 98.3 | 97.2 | | 98.8 | 98.7 | 99.4 | 97.9 | |
| **19** | 92.3 | 96.8 | 98.8 | 98.9 | | 98.4 | 96.1 | 98.7 | 99.0 | | 99.1 | 96.7 | |
| **20** | | 94.9 | 98.4 | | 99.3 | 98.3 | | 99.0 | 99.0 | | 99.1 | 97.1 | |
| **21** | | 96.7 | 98.3 | | | 98.1 | | 98.6 | | 98.1 | 99.1 | | |
| **22** | 95.6 | 97.7 | 97.5 | 99.0 | 99.1 | | 98.2 | 98.8 | | 99.1 | 99.1 | | |
| **23** | 95.9 | 97.4 | | 98.5 | 98.9 | | 98.4 | 98.8 | 97.0 | 99.4 | | 97.9 | |
| **24** | 95.2 | | | 98.0 | 99.0 | 97.3 | 98.4 | | 96.6 | 99.5 | | | |
| **25** | 97.0 | | 97.9 | 98.6 | | 96.6 | 98.6 | | 96.8 | 99.1 | 99.1 | | |
| **26** | 96.6 | 97.6 | 98.4 | 98.8 | | 96.2 | 98.2 | 98.4 | 96.8 | | 98.3 | 97.8 | |
| **27** | | 98.1 | 98.2 | | 98.9 | 96.1 | | 98.4 | 96.7 | | 98.5 | 96.4 | |
| **28** | | 97.6 | 98.1 | | 98.6 | 96.1 | | 98.1 | | 99.4 | 98.4 | | |
| **29** | 96.8 | 97.6 | 97.6 | 97.9 | 100.0 | | 98.5 | 98.8 | | 99.0 | 98.4 | | |
| **30** | 97.0 | | | 98.8 | 98.1 | | 98.1 | 98.7 | 95.4 | 98.4 | | 97.4 | |
| **31** | 96.8 | | | | 95.7 | | 99.2 | | | 99.2 | | 96.5 | |
| **Average** | 95.6 | 96.75 | 97.8 | 98.2 | 98.6 | 98.1 | 96.9 | 98.6 | 98.1 | 98.4 | 98.8 | 98.1 | 97.8 |
| **Minimum** | 91.3 | 94.93 | 96.9 | 97.2 | 95.7 | 96.1 | 94.5 | 97.4 | 95.4 | 95.9 | 98.2 | 96.4 | 91.3 |
| **Maximum** | 97.4 | 98.1 | 98.8 | 99.0 | 100.0 | 99.2 | 99.2 | 99.1 | 99.4 | 99.5 | 99.4 | 99.4 | 100.0 |

# F. Toxicity Testing: South Bay Water Reclamation Plant 2012

## INTRODUCTION

The City of San Diego's Toxicology Laboratory (CSDTL) conducted aquatic toxicity tests (bioassays) as required by NPDES Permit No. CA0109045, Order No. R9-2006-0067 for the South Bay Water Reclamation Plant (SBWRP). The testing requirements are designed to determine the acute and chronic toxicity of effluent samples collected from the SBWRP. In accordance with the above Order, the City also conducted toxicity tests of the 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 calendar year 2012.

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 animals. The City of San Diego is required to conduct acute toxicity tests of SBWRP effluent and the combined SBWRP/IWTP 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 Materials

***SBWRP Effluent***

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 ºC until test initiation. All tests were initiated within 36 hours of sample collection. The effluent exposure series 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 ºC, and used within 96 hours of collection or frozen to produce hypersaline brine. Detailed descriptions for all toxicity tests are provided in the City of San Diego Toxicology Laboratory Quality Assurance Manual (City of San Diego 2012).

***Combined Effluent***

Composite samples for these bioassays were collected during overlapping 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 comingled effluent samples are hereinafter referred to as "Combined Effluent".

The Combined Effluent samples were stored at 4 ºC and testing was initiated within 36 hours of sample collection. The effluent exposure series 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 SIO, filtered, held at 4 ºC, and used within 96 hours of collection or frozen to produce hypersaline brine. Detailed descriptions for all toxicity tests are provided in the City of San Diego Toxicology Laboratory Quality Assurance Manual (City of San Diego 2012).

# Acute Bioassays

## *Topsmelt Survival Bioassay*

During the current reporting period (January–December 2012), acute bioassays using the topsmelt *Atherinops affinis* were conducted for the SBWRP effluent and the Combined Effluent on a quarterly basis. For the SBWRP effluent, these tests were performed as a part of the routine monitoring program. For the Combined Effluent, these tests were performed as a part of the mandated multiple-species screening effort. All tests were conducted in accordance with USEPA protocol EPA-821-R-02-012 (USEPA 2002).

Larval topsmelt (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 daily.

Simultaneous reference toxicant testing was performed using reagent grade copper chloride plus a negative control (i.e., SIO seawater). Test concentrations consisted of 56, 100, 180, 320, and 560 µg/L copper. Dilution water was obtained from SIO, filtered, held at 4 ºC, 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%. Data were analyzed using a multiple comparison and point estimation methods prescribed by USEPA (2002). ToxCalc (Tidepool Scientific Software 2002) and CETIS (Tidepool Scientific Software 2010) were used for all statistical analyses. In addition, all multi-concentration tests conducted according to EPA-821-R02-012 are subjected to an evaluation of the concentration-response relationship.

### Mysid Survival Bioassay

During the current reporting period (January–December 2012), acute bioassays using the mysid shrimp, *Mysidopsis bahia* were conducted for the SBWRP effluent on a quarterly basis as a part of the mandated multiple-species screening effort. All tests were conducted in accordance with USEPA protocol EPA-821-R-02-012 (USEPA 2002).

Larval mysids (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 plus a negative control (i.e., SIO seawater).  Test concentrations consisted of 56, 100, 180, 320, and 560 µg/L copper. Dilution water was obtained from SIO, filtered, held at 4 ºC, 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%. Data were analyzed using a multiple comparison and point estimation methods prescribed by USEPA (2002). ToxCalc (Tidepool Scientific Software 2002) and CETIS (Tidepool Scientific Software 2010) were used for all statistical analyses. In addition, all multi-concentration tests conducted according to EPA-821-R02-012 are subjected to an evaluation of the concentration-response relationship.

## Chronic Bioassays

#### *Kelp Germination and Growth Test*

During the current reporting period (January–December 2012), chronic bioassays using the giant kelp, *Macrocystis pyrifera*, were conducted for the SBWRP effluent across multiple months as a part of the mandated multiple-species screening effort. Quarterly tests were also conducted for the Combined Effluent as a part of the routine monitoring program. All tests were conducted in accordance with USEPA protocol EPA/600/R-95/136 (USEPA 1995).

Kelp zoospores were obtained from the reproductive blades (sporophylls) of adult *Macrocystis* plants at the kelp beds near La Jolla, California one day prior to test initiation. The zoospores were exposed in a static system for 48 hours to the effluent exposure series.  A SIO water control was also tested.

Simultaneous reference toxicant testing was performed using reagent grade copper chloride. The concentrations of copper in the exposure series were 5.6, 10, 18, 32, 100, and 180 µg/L. A SIO seawater control was also tested.

At the end of the exposure period, 100 randomly-selected zoospores from each replicate were examined and the percent germination was recorded. In addition, germ-tube length was measured and recorded for 10 of the germinated zoospores.

Data were analyzed in accordance with "Flowchart for statistical analysis of giant kelp, *Macrocystis pyrifera*, germination data" and "Flowchart for statistical analysis of giant kelp, *Macrocystis pyrifera*, growth data" (see USEPA 1995). ToxCalc (Tidepool Scientific Software 2002) and CETIS (Tidepool Scientific Software 2010) were used for all statistical analyses.

In accordance with USEPA guidelines on method variability, the lower "Percent MSD" (PMSD) bound was also evaluated in order to minimize Type 1 error (i.e., false positive). If the relative difference between an exposure concentration and the control was smaller than the $10^{th}$ percentile PMSD value listed for the test method in the USEPA guidance document (i.e., 6.5 for germination and 7.9 for growth), then the exposure concentration was treated as if it did not differ significantly from control for the purpose of determining the NOEC (USEPA, 2000).

***Red Abalone Development Bioassay***

During the current reporting period (January–December 2012), chronic bioassays using the red abalone *Haliotis rufescens* were attempted for the SBWRP effluent on a monthly basis in accordance with USEPA protocol EPA/600/R-95/136 (USEPA 1995). Three consecutive quarterly tests were also conducted for the Combined Effluent as a part of the mandated multiple-species screening effort. Due to poor gamete release during spawning induction, no red abalone tests were conducted during December.

Test organisms were purchased from Cultured Abalone (Goleta, California), and/or American Abalone Farm (Davenport, California), and shipped via overnight delivery to the CSDTL. Mature male and female abalones were placed in gender-specific natural seawater tanks and held at 15 ºC. For each test event, spawning was induced in 6-10 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 SIO water control was also tested.

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

At the end of the exposure period, 100 randomly-selected embryos were examined and the number of normally and abnormally developed embryos was recorded. The percentage of normally developed embryos for each replicate was arcsine square root transformed. Data were analyzed in accordance with "Flowchart for statistical analysis of red abalone *Haliotis rufescens*, development data" (USEPA 1995). ToxCalc (Tidepool Scientific Software 2002) and CETIS (Tidepool Scientific Software 2010) were used for all statistical analyses.

The red abalone tests were scored both inclusive and exclusive of unicellular embryos, which can be indicative of poor animal quality. As shown in previous studies, the inclusive scoring method induced greater variability and reduced test sensitivity. Moreover, data from past and present studies showed no association between the distribution of unicellular embryos and exposure to the reference toxicant, which further support the use of the exclusive method in scoring the red abalone tests.

In accordance with USEPA guidelines on method variability, the lower “Percent MSD” (PMSD) bound was also evaluated in order to minimize Type 1 error (i.e., false positive). If the relative difference between an exposure concentration and the control was smaller than the $10^{th}$ percentile PMSD value listed for the test method in the USEPA guidance document (i.e., 3.8), then the exposure concentration was treated as if it did not differ significantly from control for the purpose of determining the NOEC (USEPA, 2000).

***Topsmelt Survival and Growth Bioassays***

During the current reporting period (January–December 2012), chronic bioassays using the topsmelt, *Atherinops affinis*, were conducted for the SBWRP and Combined Effluent across multiple reporting periods as a part of the mandated multiple-species screening effort. All tests were conducted in accordance with EPA/600/R-95/136 (USEPA 1995).

Larval topsmelt (9-14 days old) were purchased from Aquatic Bio Systems (Fort Collins, CO) and exposed for seven days in a static-renewal system to the effluent. The test endpoints are survival and growth (dry biomass).

Simultaneous reference toxicant testing was performed using reagent grade copper chloride. The concentrations of copper in the exposure series were 32, 56, 100, 180, and 320 μg/L. A SIO seawater control was also tested.

Upon conclusion of the exposure period, percent survival and dry biomass were recorded. Data were analyzed in accordance with “Flowchart for statistical analysis of the topsmelt, *Atherinops affinis*, larval survival data” and “Flowchart for statistical analysis of the topsmelt, *Atherinops affinis*, larval growth data” (USEPA 1995). ToxCalc (Tidepool Scientific Software 2002) and CETIS (Tidepool Scientific Software 2010) were used for all statistical analyses.

In accordance with USEPA guidelines on method variability, the lower “Percent MSD” (PMSD) bound was also evaluated in order to minimize Type 1 error (i.e., false positive). Although PMSD bounds have not been established for the topsmelt, percentiles of PMSD for a comparable method using the inland silverside (*Menidia beryllina*) may be considered (Hemmer, 1992). If the relative difference between an exposure concentration and the control was smaller than the $10^{th}$ percentile PMSD value listed for the inland silverside test method in the USEPA guidance document (i.e., 7.0 for 96-h survival and 12.0 for growth), then the exposure concentration will be further evaluated using other EPA-approved statistical strategies (USEPA, 2000).

***Purple Sea Urchin Fertilization Bioassay***

During the current reporting period (January–December 2012), chronic bioassays using the purple sea urchin, *Strongylocentrotus purpuratus*, were conducted for the SBWRP effluent as an alternate to the red abalone development bioassay during months in which gravid red abalones were potentially unavailable or of questionable quality. All tests were conducted in accordance with USEPA protocol EPA/600/R-95/136 (USEPA 1995).

Test organisms were obtained from the Point Loma kelp beds by City of San Diego personnel and delivered to the CSDTL immediately following collection. The urchins were evaluated for health and evidence of spawning prior to being placed in natural seawater tanks and held at 15 ºC. For each test event, spawning was induced in at least 6 urchins and gametes from each animal were examined for quantity and quality. Eggs from at least two females and sperm from at least two males were used to create separate egg and sperm stocks. Density of the sperm and egg stocks were separately determine using a hemacytometer and a well slide, respectively.

Test initiation began upon delivery of 90,000 sperm into each test replicate. Following a 20-minute sperm-only exposure, 2,000 eggs were delivered into each test replicate and incubated for an additional 20 minutes to allow fertilization. A SIO seawater control was also tested.

Simultaneous reference toxicant testing was performed using reagent grade copper chloride. The exposure series consisted 10, 18, 32, 56, 100, and 180 µg/L copper. A SIO seawater control was also tested.

At the end of the test period, 100 randomly-selected eggs were examined and the number of fertilized and unfertilized eggs was recorded. The percentage of fertilized eggs for each replicate was arcsine square root transformed. Data were analyzed in accordance with “Flowchart for statistical analysis of sea urchin and sand dollar fertilization data” (USEPA 1995). ToxCalc (Tidepool Scientific Software 2002) and CETIS (Tidepool Scientific Software 2010) were used for all statistical analyses.

In accordance with USEPA guidelines on method variability, the lower “Percent MSD” (PMSD) bound was also evaluated in order to minimize Type 1 error (i.e., false positive). If the relative difference between an exposure concentration and the control was smaller than the $10^{th}$ percentile PMSD value listed for the test method in the USEPA guidance document (i.e., 5.1), then the exposure concentration was treated as if it did not differ significantly from control for the purpose of determining the NOEC.

**RESULTS & DISCUSSION**

# Acute Toxicity of SBWRP Effluent

In 2012, the City conducted quarterly acute bioassays of the SBWRP effluent using the topsmelt and three additional bioassays using the mysid shrimp. The latter tests were conducted in accordance with the biennial re-screening requirement. All valid tests met the test acceptability criterion and the NPDES permit’s acute toxicity performance goal (Table T.1).

# Chronic Toxicity of SBWRP Effluent

In 2012, the City conducted monthly chronic bioassays of the SBWRP effluent using the red abalone and additional bioassays using the giant kelp, topsmelt, and purple sea urchin. The latter tests were conducted in accordance with the biennial re-screening requirement. All valid tests met the NPDES permit's chronic toxicity performance goal (Table T.2).

**Combined Effluent Toxicity**

The City also conducted quarterly acute and chronic bioassays for the Combined Effluent in 2012. All acute tests were conducted using the topsmelt and met the acceptability criterion (Table T.3).

During the first three quarterly chronic events, the City tested multiple species concurrently in order to enable a side-by-side comparison of test sensitivity among the giant kelp, red abalone, topsmelt and purple sea urchin bioassays. The results showed comparable sensitivity among all bioassays to the Combined Effluent. Therefore, the City conducted all subsequent routine acute toxicity monitoring tests with the giant kelp, which exhibited the greatest sensitivity during a previous multiple-species screening event. All tests met the acceptability criteria (Table T.4).

Although this combined effluent testing is a requirement of the SBWRP monitoring program, there are no compliance limits or performance goals for these data.

# REFERENCES


City of San Diego. 2012. Quality Assurance Manual. City of San Diego Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA

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USEPA. 2002. Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms. Fifth Edition. U.S. Environmental Protection Agency, Office of Water (4303T), Washington, DC, EPA-821-R-02-012.

**Table T.1**

Results of SBWRP effluent acute toxicity tests conducted in 2012. Data are presented as acute toxic units (TUa).

| Sample Date | Topsmelt 96-Hour Survival | Mysid 96-Hour Survival |
|---|---|---|
| 01/22/2012 | <1.50 | <1.50 |
| 05/20/2012 | <1.50 | <1.50 |
| 09/23/2012 | <1.50 | N.V. |
| 10/14/2012 | <1.50 | <1.50 |
| N | 4 | 3 |
| No. in compliance | 4 | 3 |
| Mean TUa | <1.50 | <1.50 |

NPDES permit performance goal: 3.1 TUa.

N.V.: Test not valid

**Table T.2**

Results of SBWRP effluent chronic toxicity tests conducted in 2012. Data are presented as chronic toxic units (TUc).

| Sample Date | Red Abalone | | Giant Kelp | | Topsmelt | | Purple Urchin |
|---|---|---|---|---|---|---|---|
| | Development | | Germination | Growth | Survival | Growth | Fertilization |
| | Exclusive | Inclusive | | | | | |
| 01/09/2012 | 23.8 | 23.8 | - | - | - | - | - |
| 02/14/2012 | 23.8 | 23.8 | - | - | - | - | - |
| 03/05/2012 | 23.8 | 23.8 | - | - | - | - | 23.8 |
| 04/17/2012 | 23.8 | 23.8 | - | - | - | - | 23.8 |
| 05/07/2012 | 23.8 | 23.8 | 23.8 | N.V. | - | - | - |
| 06/11/2012 | 23.8 | 23.8 | N.V. | 23.8 | N.V. | 23.8 | 23.8 |
| 07/09/2012 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | - |
| 08/06/2012 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 |
| 09/10/2012 | 95.2 | 95.2 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 |
| 10/08/2012 | 23.8 | 23.8 | - | - | - | - | - |
| 11/05/2012 | 23.8 | 23.8 | - | - | - | - | - |
| 11/27/2012 | - | - | - | - | - | - | 23.8 |
| 12/17/2012 | DNS | DNS | - | - | - | - | 23.8 |
| N | 11 | 11 | 4 | 4 | 3 | 4 | 7 |
| No. in compliance | 11 | 11 | 4 | 4 | 3 | 4 | 7 |
| Mean TUc | 30.3 | 30.3 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 |

NPDES permit performance goal is 95.6 TUc.

N.V.: Test not valid

DNS: Animals gravid but did not spawn

**Table T.3**

Results of SBWRP/IWTP combined effluent acute toxicity tests conducted in 2012. Data are presented as acute toxic units (TUa).

| Sample Date | Topsmelt 96-Hour Survival |
|---|---|
| 01/23/2012 | <1.52 |
| 04/02/2012 | <1.57 |
| 08/20/2012 | <1.50 |
| 11/16/2012 | <1.50 |

**Table T.4**

Results of SBWRP/IWTP combined effluent chronic toxicity tests conducted in 2012. Data are presented as chronic toxic units (TUc).

| Sample Date | Red Abalone Development | | Giant Kelp Germination | Giant Kelp Growth | Topsmelt Survival | Topsmelt Growth | Purple Urchin Fertilization |
|---|---|---|---|---|---|---|---|
| | Exclusive | Inclusive | | | | | |
| 02/10/2012 | - | - | - | - | 23.8 | 23.8 | - |
| 02/13/2012 | - | - | 23.8 | 23.8 | - | - | - |
| 02/15/2012 | 23.8 | 23.8 | - | - | - | - | - |
| 04/13/2012 | - | - | - | - | 23.8 | 23.8 | - |
| 04/16/2012 | - | - | 23.8 | 23.8 | - | - | - |
| 04/18/2012 | 23.8 | 23.8 | - | - | - | - | 23.8 |
| 09/11/2012 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 | 23.8 |
| 12/11/2012 | - | - | 23.8 | 23.8 | - | - | - |

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