

2016 Annual Report and Summary for the South Bay Wastewater Reclamation Plant & Ocean Outfall



NPDES No. CA 0109045
Order No. R9-2013-0006
&
Order No. 2000-203



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City of San Diego
Public Utilities Department

2016 Annual Report and Summary
for the
South Bay Wastewater
Reclamation Plant & Ocean Outfall

This report consists of the 2016 South Bay Water Reclamation Plant and Ocean Outfall Annual Reports and Summary, as specified in discharge Order No. R9-2013-0006, NPDES Permit No. CA0109045.

Section I is an Executive Summary providing general background information regarding the review and summary of findings and conclusions for 2016.

Section II through IX contain reports and information for 2016 as listed in the Table of Contents.

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City of San Diego
Public Utilities Department
Environmental Monitoring & Technical Services Division

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Credits and Acknowledgements

**South Bay Wastewater Reclamation Plant and Ocean Outfall Annual
Monitoring Report
2016**

City of San Diego
Public Utilities Department
Metropolitan Wastewater Branch

Environmental Monitoring & Technical Services Division
Wastewater Chemistry Laboratory
5530 Kiowa Drive
La Mesa, CA 91942
Phone: (619) 668-3215 FAX: (619) 668-3284

Supervising Editors & Science Staff:
Elvira Mercado
Lee King

Editorial Production & Support
Corinna Quinata

Data Management, Report Generation, Data Tables & Graphics
Fernando Martinez

Treatment & Disposal Division
2411 Dairy Mart Road
San Diego, CA
Phone: (619) 428-7306 FAX: (619) 428-6915

South Bay Wastewater Reclamation Plant Superintendent
Ernesto Molas

Senior WW Operations Supervisor
Kip Cooper

Senior Plant Technician Supervisor
Robert Rodriguez

WW Operations Supervisor- Process Control
Linda Ruiz Lopez

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Introduction

- A. Executive Summary
- B. Explanatory Notes
- C. Reporting Definitions
- D. Overview of the Metropolitan Wastewater (Metro) System
- E. Overview of SBWRP
- F. Discussion of Compliance Record
- G. Plant Facility Operations Report
- H. Correlation of Results to Plant Conditions

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I. Introduction

A. Executive Summary:

Purpose:

This report meets the annual reporting requirements of Monitoring and Reporting Program (MRP) in Order No. R9-2013-0006 (NPDES Permit No. CA0109045), Order No. R9-2013-0006 superseded R9-2006-0067 on April 3, 2013. This report contains summaries for Order No. 2000-203 relating to the production and purveyance of recycled water at the South Bay Water Reclamation Plant (SBWRP). It also serves as an historical record and reference of operational and compliance metrics.

Background:

The South Bay Water Reclamation Plant (SBWRP) is located at the intersection of Dairy Mart and Monument Roads in the Tijuana River Valley. The plant relieves the South Metro Sewer Interceptor System and provides local wastewater treatment services and reclaimed water to the South Bay. The plant opened in May 2002 and has a wastewater treatment capacity of 15 million gallons a day. The plant shares the South Bay Ocean Outfall (SBOO) with the International Wastewater Treatment Plant operated by the U.S. Section of the International Boundary and Water Commission (IBWC). While the plant has been operating since May 2002, distribution of reclaimed water started 4-years later in July 2006. The volume reclaimed and distributed varies depending on demand for recycled water.

During 2016, the plant received and treated 2.7 billion gallons of wastewater, reclaiming 80% or 2.2 billion gallons. Eighty percent of the reclaimed water was beneficially reused by the Otay Water District, the International Treatment Plant, or used for in-plant processes. Between the months of May thru October more than seventy percent of the reclaimed water was reused.

Key metrics for 2016	Daily Average Flow (mgd)	Total Annual Flow (million gallons)
Influent to plant (Raw Wastewater Treated)	7.46	2,732
Effluent to Ocean Outfall	3.31	1,209
Reclaimed Water Produced	6.01	2,202
Beneficial Reuse (recycled water distributed)	3.05	1117
Sludge and returns to South Metro Interceptor (SMI)	1.10	401
Plant Use of Reclaimed Water	0.78	287

For a detailed discussion of the plant and treatment process see sections I. F., Plant Facility Operation Report, and Chapter III. Plant Operations Summary.

B. Explanatory Notes:

The past year's data are presented in tabular and graphical form. We include annual monitoring results, special items and discussions itemized in the permits. This document is comprehensive, including supporting information on monitoring methods, frequency and changes in analyses, long-term tables of selected analytes, operational data, background analyses and treatment plant process control. Where the permit sets limits or requests the analysis of various groups of compounds (such as chlorinated and non-chlorinated phenols, PCBs, hexachlorocyclohexanes, etc.) we have provided summaries and averages of these groups and also of the individual compounds.

The Recycled Water Users Summary Report as described in Permit No. 2000-203 is submitted separately from this report. However, we do include summary information and an evaluation of the Water Reclamation and beneficial reuse integral to the operations of the plant. Section 7 contains a thorough presentation and evaluation of the Reclaimed Water process information and monitoring data.

For averaging purposes, "less than" and "not detected" (nd) values were treated as zero. In many parts of the report, zero values are found. Our computer system reads "less than" values as zero for summaries, and in computing averages. In those areas where zeros are found the reader can find appropriate method detection limits (MDL) in the table of data. Because "less than" values are averaged as zero, values in summary tables may be less than detection limits; these are simple numeric means (or minimums). The data tables may also contain values expressed as a <X (less than), where X represents the MDL.

A further limitation is that statistical confidence in the results of an analysis is heavily dependent upon the concentration relative to the Method Detection Limit (MDL). Essentially all of our detection limits have been established using the procedure in 40 CFR, part 136. This statistical basis for the MDL results in a defined statistical confidence (at the 99% Confidence Interval) of essentially $\pm 100\%$ when the result is near the MDL. Only at concentrations approximately 5 times the MDL is the confidence interval at $\pm 20\%$. While the precision of our methods generally ranges from 2–3 significant figures, the above limitations of confidence should always be considered.

Where possible, the influent and effluent values of a given parameter have been included on the same graph to make the removals and other relationships readily apparent. Please note that many of the graphs are on expanded scales where the y-axes (concentration) do not start at zero, but instead are scaled to highlight the range of concentrations where variation takes place. These expanded scales make differences and some trends obvious that might normally not be noticed; however, they also may inadvertently place more weight on relatively minor changes or trends than deserved. Please reference the chart axis scales.

C. Reporting Definitions

a. Estimated Concentrations (“E” Qualifier)

The “E” qualifier stands for “estimated value,” and is used in data reduction to flag data that have a lower concentration than normally acceptable for monitoring programs, or the method under federal regulations or ELAP requirements, but the qualitative identification has high certainty. Using normal detection limit criteria, useful information would be lost. In making determinations and reporting data there are circumstances where, due to the nature of the analysis and the needs of the customer, the certainty in quantification can be less than the requirements necessary for general environmental monitoring and reporting for regulatory compliance.

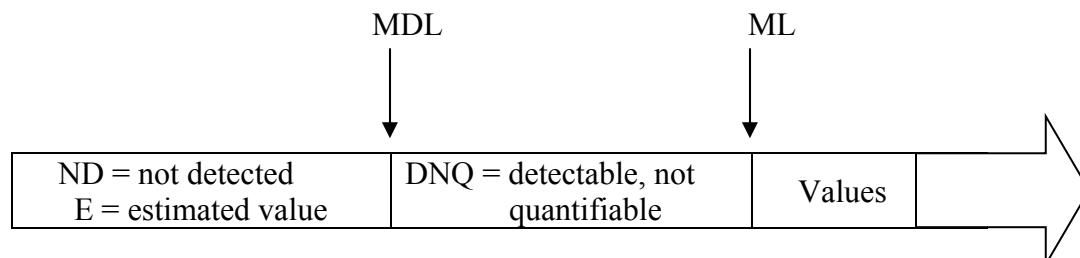
Data annotated with an “E” followed by a value (always less than the reported MDL) are estimated values. Data annotated in this manner have an uncertainty in concentrations unacceptable for compliance determinations or other concentration dependent conclusions.

b. Detected, but not qualified (“DNQ” Qualifier)

The “DNQ” qualifier is used for NPDES effluent reporting. DNQ is for analytical results that are less than the minimum level (ML), but greater than or equal to the MDL. Data annotated with DNQ will include a value, and the method’s MDL.

Summary of E and DNQ qualifiers

- E qualifier data in LIMS will have an “E” in the qualifier column, a value in the result value column, and the MDL deleted.
- DNQ qualifier data in LIMS will have a “DNQ” in the qualifier column, a value in the result value column, and the MDL.



D. Overview of the Metropolitan Wastewater (Metro) System

The City operates wastewater facilities to transport, treat, reclaim, reuse, and discharge wastewater and its by-products collected from the Metropolitan Wastewater System (the System). The System serves a population of approximately 3.2 million people providing for conveyance, treatment, reuse, and disposal of wastewater within a 450 square mile service area. The Metro System currently consists of several service areas including the City of San Diego (serviced by the Municipal Sub-System) and the 15-regional Participating Agencies. Wastewater treatment for the System is provided at the North City Water Reclamation Plant (NCWRP), the South Bay Water Reclamation Plant (SBWRP), and the Point Loma Wastewater Treatment Plant (PLWTP). Solids treatment and handling provided at the PLWTP and the Metro Biosolids Center (MBC). The City of San Diego contributes approximately 65% of the flow in the Metro System with the remainder coming from the Participating Agencies.

Each Participating Agency is responsible for the wastewater collection system within its boundaries to the point of discharge to the System. Wastewater flows from the Municipal Sub-System compose approximately 65% of the Metro Sub-System flows. All System facilities are owned by the City of San Diego and are managed by PUD.

A map detailing major facilities in the System and the participating agencies is included.

The System is a complex system of pipelines and pump stations that collect wastewater and convey it for treatment and disposal or reuse. The PLWTP serves as the terminus for the System and is capable of treating all flows generated within the System. Within the System are two water reclamation plants, the NCWRP and the SBWRP, that pull flow from the sewers for treatment and reuse. The System also includes the Metro Biosolids Center (MBC) that treats and disposes of all treatment process solids material removed by the treatment plants.

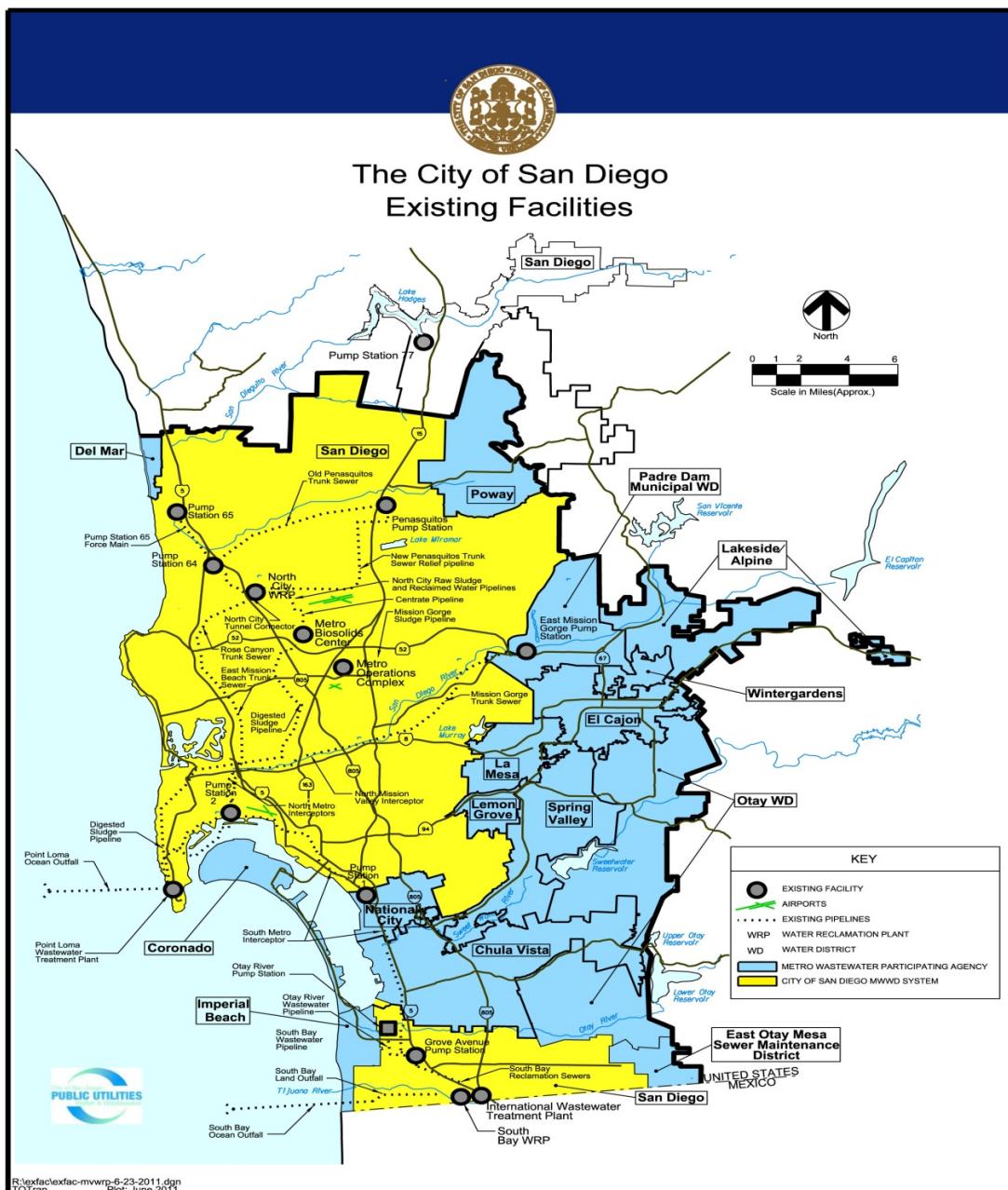
The PLWTP is the largest of the wastewater treatment plants in the System. The PLWTP is an advanced primary treatment WWTP that uses chemical addition to increase performance of the primary clarifiers and is the terminus for the System. The PLWTP discharges effluent through the Point Loma Ocean Outfall (PLOO). As an advanced primary treatment WWTP, performance is not measured entirely by effluent quality, but also against the California Ocean Plan and the Basin Plan that address the water quality and beneficial uses of the Pacific Ocean.

The plant has a rated capacity of 240 million gallons per day (mgd) and currently operates at 144 mgd. The NCWRP has a rated capacity of 30 mgd and currently operates at a nominal flow-rate of 15.4 mgd. The SBWRP has a rated capacity of 15 mgd and is currently treating a nominal 8.0 mgd. The PLWTP is a modern primary treatment facility and the NCWRP and SBWRP are both modern tertiary treatment facilities.

The other two facilities, the NCWRP and the SBWRP are scalping plants that divert water from the System and treat it for reclamation purposes. Both plants currently operate as secondary treatment plants and reclaim water to tertiary standards to meet demand. Demand will fluctuate depending on the time of year and the type and number of customers. The NCWRP returns all secondary effluent that is not reclaimed back to the System for treatment at the PLWTP. However, the solids that are removed, either by sedimentation or biological oxidation, are pumped to the MBC for further treatment. The

SBWRP discharges excess secondary effluent to the SBOO and returns all solids removed from the sewage to the System for transport to the PLWTP. Performance of both water reclamation plants is measured by each facility's ability to treat reclaimed water to the required standards when discharging to the reclaimed system. Performance of the SBWRP is also measured via secondary treatment standards, as defined in the facility's NPDES permit, when discharging to the South Bay Ocean Outfall (SBOO).

The MBC processes primary and secondary solids from the NCWRP through anaerobic digestion and dewatering, and processes the digested biosolids from the PLWTP through dewatering. The dewatered biosolids are beneficially used as cover at a local landfill or used as a soil amendment for agricultural purposes. The centrate from the centrifuges is returned to the sewer and treated at the PLWTP. Performance of this facility is measured by the quality of the solids product generated for use or disposal.



ISO 14001 Certification

Wastewater Treatment and Disposal Division (formerly called Operations and Maintenance Division) and the Monitoring and Reporting Programs operated by the Environmental Monitoring and Technical Services Division are certified in ISO¹ 14001, Environmental Management Systems.



¹ International Standards Organization

E. Overview of SBWRP\

The **South Bay Water Reclamation Plant (SBWRP)** relieves the South Metro Sewer Interceptor System and provides local wastewater treatment services and reclaimed or recycled water to the South Bay. The plant opened in May 2002 and has a wastewater treatment capacity of 15 million gallons a day. The plant design incorporates the newest technologies and provides advanced treatment for up to 15 million gallons of wastewater per day.



The advanced treatment meets tertiary or reclaimed water standards including disinfection. The SBWRP treatment process is a state-of-the-art implementation of traditional secondary treatment using activated-sludge. Much of the secondary effluent is reclaimed and beneficially reused after tertiary filtration through anthracite coal beds and disinfection with high-intensity ultraviolet (UV) light. The plant shares the South Bay Ocean Outfall (SBOO) with the International Wastewater Treatment Plant (IWTP) operated by the U.S. Section of the International Boundary and Water Commission (IBWC).

Treatment processes consist of mechanical bulky debris and grit removal at the headworks using standard traveling bar screens and aerated grit chambers. The removed debris is then dewatered and taken to landfills. Suspended solids of wastewater are removed by primary sedimentation. Scum removal is concurrent with primary sedimentation. Primary effluent is followed by industry standard aerated activated sludge secondary treatment. Secondary clarifiers allow settling and removal of the remainder of the solids (also called sludge) that is returned to the Metro System via the South Metro Interceptor and is pumped to the Point Loma WWTP. The resultant secondary effluent is either discharged to the South Bay Ocean Outfall or directed to tertiary treatment in the plant.

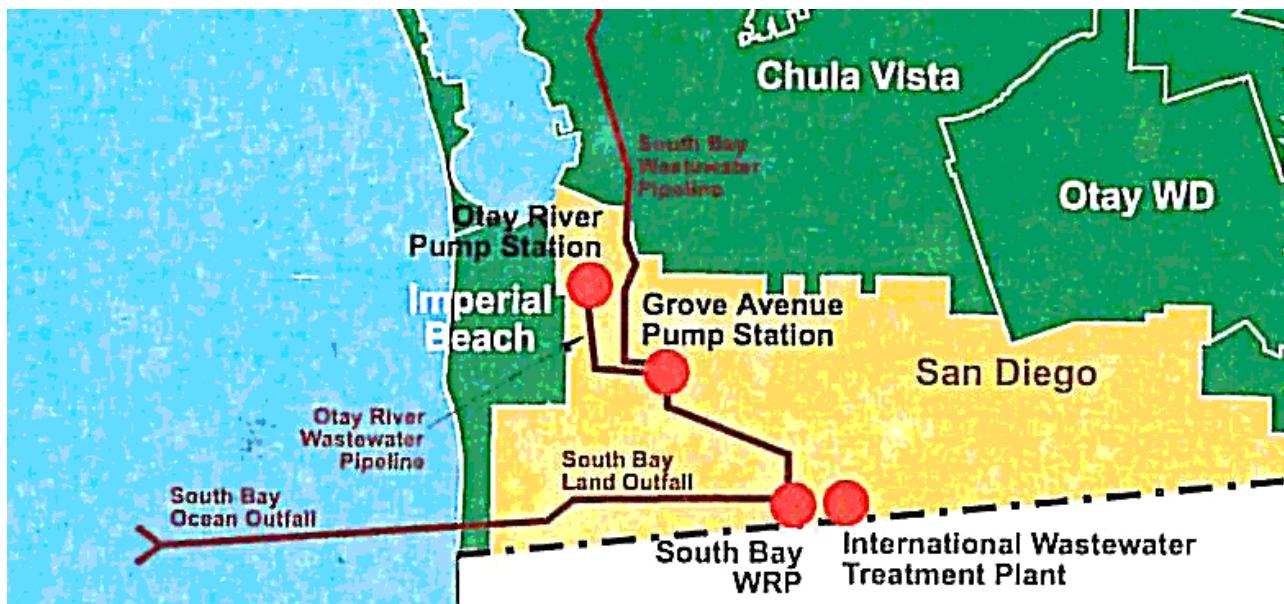


In 2013, approximately three quarters of the influent treated was directed to tertiary treatment. Tertiary treatment consists of running the secondary effluent through anthracite coal beds where it is filtered of remaining solids as it passes through the layered medium. The filtered water then passes through chambers where it is disinfected through exposure to high-energy ultraviolet light (UV). At this stage the "reclaimed" water meets California Title 22 full body contact requirements. Recycled or reclaimed water is beneficially reused for in-plant processes at SBWRP, at the nearby International Wastewater Treatment Plant and an increasing percentage of the recycled water is distributed to the Otay Water District for non-potable beneficial reuse off-setting demands for traditional potable water sources.

South Bay Ocean Outfall (SBOO)

The South Bay Water Reclamation Plant (SBWRP) is located at 2411 Dairy Mart Road, San Diego, CA 92154. It sits at the intersection of Dairy Mart and Monument Roads in the Tijuana River Valley just meters north of the U.S.-Mexico International border. The plant provides additional treatment capacity and reclaimed water for the southern service area of the Metro System (South Metro Sewer Interceptor System).

The South Bay Ocean Outfall extends approximately 3.5 miles offshore and discharges effluent in approximately 100 feet of water. The outfall tunnel has an 11 foot diameter and is 19,000 feet long.



F. Discussion of Compliance Record

The South Bay Water Reclamation Plant operates with two separate permits. NPDES Permit No. CA0109045/ Order No. 2013-0006 (with addenda) provides for the treatment and disposition of wastewater via the shared South Bay Ocean Outfall and Reclaimed Water Permit No. 2000-203 (with addenda) provides for water reclamation.

South Bay Ocean Outfall:

There were no discharge limitations exceeded for the South Bay Ocean outfall in 2016.

Recycled (Reclaimed) Water: This is the eleventh year of plant operation that reclaimed water was produced and distributed

Ranges of Major Constituents in Reclaimed Water, 2016.

Waste Discharge and Water Recycling Requirements for the South Bay Water Reclamation Plant (Order No. 2000-203)			
Parameter	Permit Limits		Measured Values CY 2016
BOD ₅	Monthly Average	30 mg/L	<2 - 10
	Daily Maximum	45 mg/L	25
Total Dissolved Solids (TDS)	Monthly Average	1,200 mg/L	959 - 1040
	Daily Maximum	1,300 mg/L	1,170
Sulfate	Monthly Average	250 mg/L	168 – 246
	Daily Maximum	300 mg/L	251
MBAS	Monthly Average	0.5 mg/L	0.05 – 0.14
	Daily Maximum	0.7 mg/L	0.34
Iron	Monthly Average	0.3 mg/L	0.034 – 0.126
	Daily Maximum	0.4 mg/L	0.13
Fluoride	Monthly Average	1.0 mg/L	0.41 – 0.51
	Daily Maximum	1.2 mg/L	0.6
Total Coliform	Daily Maximum	MPN 240/100-mLs	<1.8 – 17

*Measured parameter exceeded permit limit.

G. Plant Facility Operation Report

SOUTH BAY WATER RECLAMATION PLANT 2016 ANNUAL FACILITY REPORT Prepared by Plant Superintendent Ernesto Molas

This facility report summarizes some of the key operational considerations involved in the facility operation of the South Bay Water Reclamation Plant (SBWRP) during calendar year 2016. Numerical data and analysis presented in this section are based on plant staff work. Refer to the laboratory data in this document for validated results for official reporting purposes.

Influent Sampling:

Plant staff continues to implement a preventive maintenance program of switching and cleaning of the sample delivery pumps on a regular basis to ensure consistency in samples.

Basin Utilization:

The number of basins online for each unit processes meets the plant's overflow rates and detention time design criteria ranges which are as follows:

- 2 Primary Tanks on line with 3 offline as backups
- 5 Aeration Basin on line with 3 offline as backups
- 6 Secondary Basin on line with 2 as offline as backups

Influent Flows:

The design capacity of the plant is 15 million gallons per day (MGD), with a peak capacity of 18 MGD. The average daily influent flow treated during 2016 was 7.42 MGD. Effluent flow discharged to the ocean outfall was 3.3 MGD. Total reclaimed water usage was 3.83 MGD with 3.06 MGD of it was sold to customers and the remaining 0.78 MGD was used internally for filter backwashing and as utility water for plant equipment and processes.

Solids Handling:

The influent screening and washer/compaction units operated well, with adequate on-site hopper capacity. Approximately 28.33 tons of screenings were disposed of through the end of December 2016. Grit storage capacity was also adequate with 50.37 tons of grit hauled off site. All primary scum was returned to the MWWD collection system (for treatment at the Pt. Loma WWTP facility) by routing the scum collection discharge to the blended sludge pump wet well. Primary and secondary sludge is also routed to the collection system via the blended sludge pumps. The activated sludge process was maintained through the use of high capacity wasting directly from the aeration basins to the blended sludge pumps during the full period of 2016 operation. Average daily totals for blended sludge volumes returned to the Pt. Loma facility via the South Metro Interceptor were 1.09 MGD.

Secondary Performance:

Secondary treatment performance for TSS and BOD has been an average TSS of 9.64 mg/L and BOD of 11.33 mg/L for 2016. Average secondary effluent turbidity was 2.88 NTU. MCRT has typically been maintained between 5 to 7 days.

Tertiary Processes:

The average filter effluent turbidity for 2016 was 0.85 NTU. All seven filters were available for operation. An average 4 to 5 filters were on line to meet the RW demand.

Chlorine is added at the UV influent to control algae growth. The total chlorine residual is maintained at equal or below 0.5 mg/l. The frequency of chlorine addition is 12 hrs/day.

Water Reclamation & Distribution:

The average delivery rate to Otay Storage tank during 2016 was 3.05 MGD. During summer months, the average delivery rate was 5 to 7 mgd and only less than 1 mgd during the winter months.

Discussion of compliance record:

No permit limits were exceeded this year for the South Bay Reclaimed distributed water.

Vector Control:

The presence of midge flies has been an on-going issue with the potential to adversely affect effluent quality, primarily at the secondary clarifiers and tertiary filters. Plant staff continues to rotate secondary clarifiers to disrupt midge flies larvae production. Control measures also include lowering the water level of a secondary clarifier to expose the larvae adhering to the side walls so they can be hosed down and removed. The staff also washes the sides of the filter during its backwash cycle to disrupt the midge fly from reproducing. The effort to gain full control over this problem continues.

Engineering Projects:

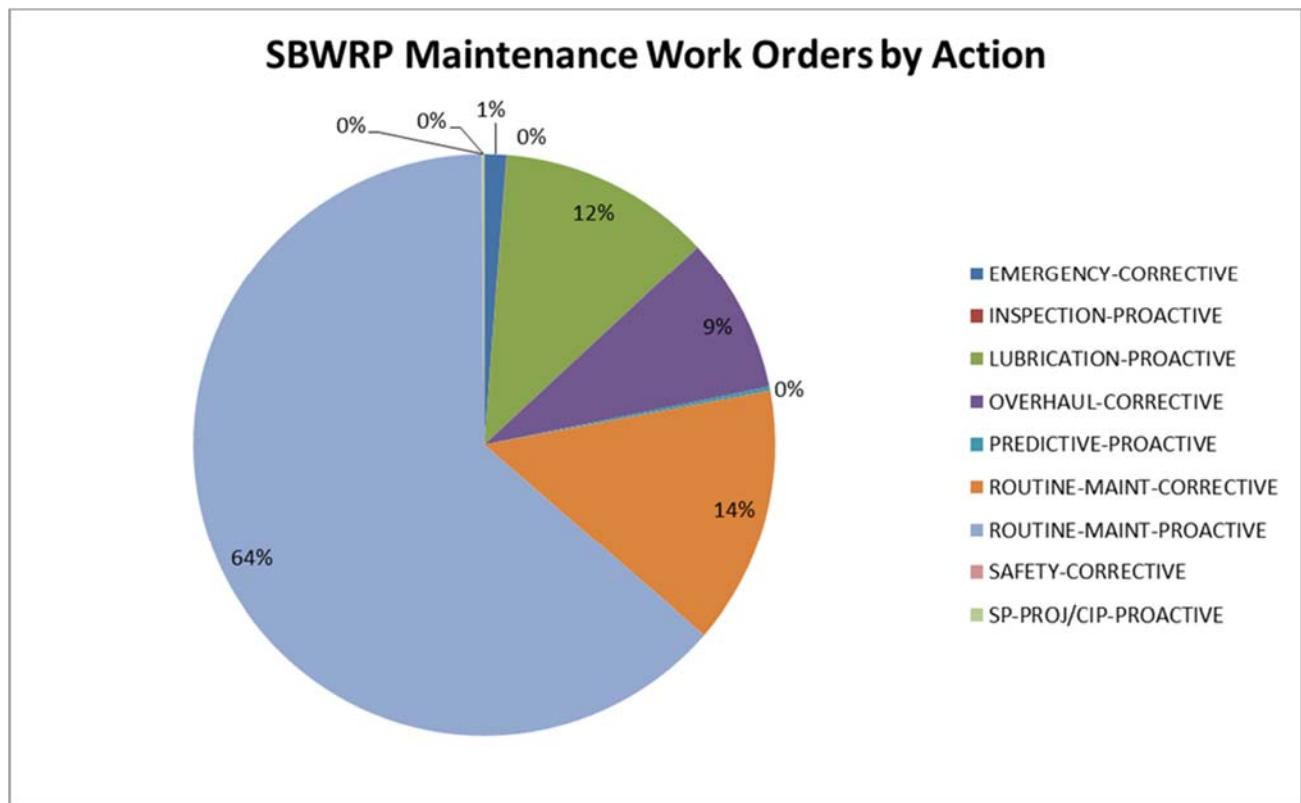
During 2016, the Engineering group for the Wastewater Treatment and Disposal Division (WWTD) provided engineer support for the plant. Their support is mainly on-demand (no resident engineer) so the on-going and completed projects identified below were accomplished by a combination of plant staff and by the WWTD engineering group.

1. Sludge Pumps Replacement Project – The original five (5) Primary Sludge Pumps are pneumatically operated pumps and will be replaced with two (2) electrical motorized pumps and grinders to lower the maintenance cost. The two pumps and grinders were installed and are in the start-up phase of the construction project.
2. Service Air Compressor Replacement Project – The two (2) air compressors currently use large amounts of reclaimed water (RW) for cooling. When the Sludge Pumps Replacement Project is completed, the two (2) air compressors will be replaced with an air cooled type compressors eliminating the need to use RW for cooling. The two (2) air compressors are in the process of fabrication and anticipate installation and start-up in early to mid-2017.
3. Demineralization project (EDR) – Project consists the installation of two (2) trailer-mounted Electrodialysis Reversal (EDR) equipment(existing), three (3) feed pumps, chemical tanks and associated pumps as well as associated piping and valves. The installation is almost complete and the project is nearing the start-up phase.

Maintenance Report 2016:

South Bay Maintenance Work Orders by Action

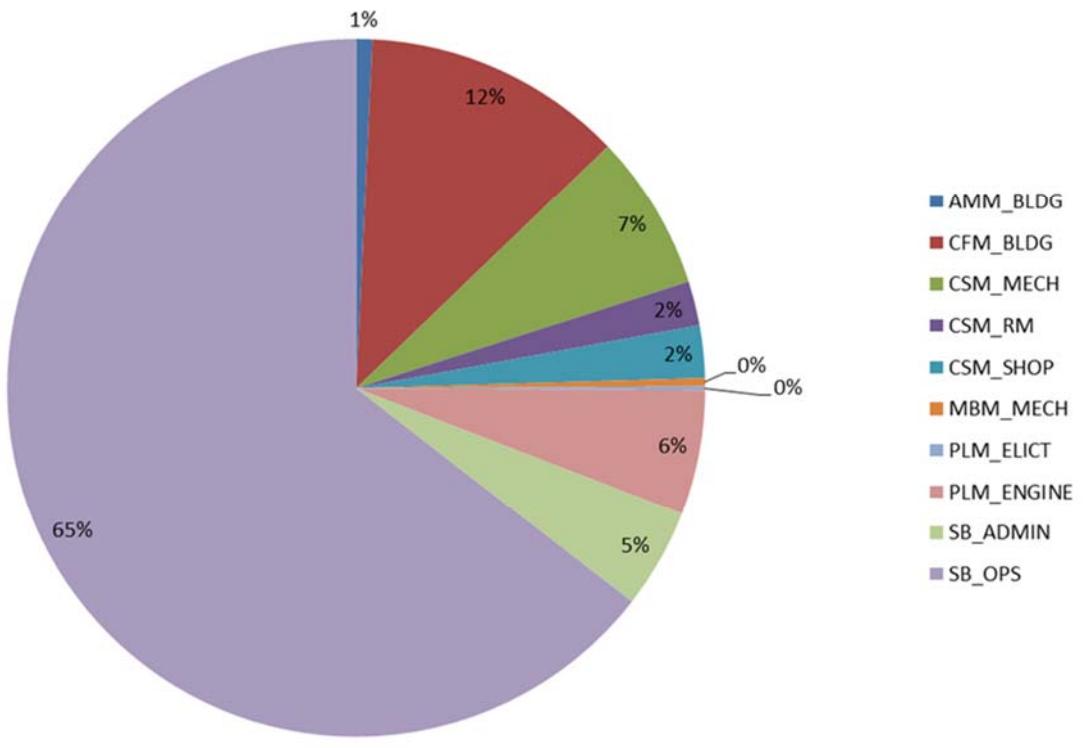
Action	Work Order Count
EMERGENCY-CORRECTIVE	50
INSPECTION-PROACTIVE	1
LUBRICATION-PROACTIVE	486
OVERHAUL-CORRECTIVE	357
PREDICTIVE-PROACTIVE	9
ROUTINE-MAINT-CORRECTIVE	588
ROUTINE-MAINT-PROACTIVE	2602
SAFETY-CORRECTIVE	1
SP-PROJ/CIP-PROACTIVE	5



South Bay Maintenance Work Orders by Crew

Crew	Work Order Count
AMM_BLDG	4
CFM_BLDG	65
CSM_MECH	39
CSM_RM	11
CSM_SHOP	13
MBM_MECH	2
PLM_ELICT	1
PLM_ENGINE	31
SB_ADMIN	25
SB_OPS	347

SBWRP Maintenance Work Orders by Crew



H. Correlation of Results to Plant Conditions

In 2016 the amount of system flows treated at the SBWRP averaged 8 million gallons per day.

Annual Totals

Year	SBWRP Influent (million gals)	SBWRP Discharge to South Bay Outfall (million gals)	SBWRP Distributed Recycled Water (million gals)	System Return Stream (million gals)	Net removed from Metro* (million gals)
2016	2,732	1,209	1,117	401	2,326
2015	2,724	1,274	956	479	2,230
2014	2,908	1,075	1,216	586	2,291
2013	2,948	1,171	1,172	590	2,343
2012	2,942	1,194	1,247	479	2,441
2011	3,001	1,288	1,177	505	2,465
2010	3,003	1,248	1,156	571	2,404
2009	3,050	958	1,501	564	2,459
2008	3,173	1,167	1,388	601	2,555
2007	3,158	1,467	1,101	527	2,568

*The net removed from Metro is the sum of discharge water to SB Outfall and Distributed water.

Comparative flow data:

flow stream	2013		2014		2015		2016	
	Daily Average	Annual Total						
Influent	8.08	2,948	7.97	2,908	7.47	2,724	7.46	2,732
RW (Reclaimed Water) Produced	5.96	2,176	6.02	2,199	5.35	1,954	6.01	2,202
RW Distributed	3.20	1,172	3.32	1,216	2.62	954	3.05	1,117
RW In-plant use	0.77	282	0.94	344	0.84	308	0.78	287
Total reuse	3.97	1,454	4.26	1,560	3.46	1,262	3.82	1,404
Effluent to SBOO	3.22	1,171	2.96	1,075	3.49	1,274	3.31	1,209
Return to SMI	1.62	590	1.60	586	1.31	479	1.10	401

II. Influent and Effluent Data Summary

- A. Mass Emissions
- B. Discharge Limits
- C. Influent and Effluent Data Summaries
- D. Influent and Effluent Graphs
- E. Daily Values of Selected Parameters
- F. Toxicity Bioassay

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A. Mass Emissions

Mass Emissions of Effluent Using 2016 Monthly Averages

DISCHARGE SPECIFICATIONS from NPDES Permit No. CA0109045/RWQCB Order No. 2013-0006 effective on April 4, 2013 with limits on pollutant discharges.

Effluent Limitations Based on Secondary Treatment Standards

Constituent/Property	Limit: Monthly Average (30 day) (lbs/day)	2016 Mass Emissions (lbs/day) ^[1]	2016 Average Concentration	Units
Flow (MGD)			3.31	MGD
Total Suspended Solids	3,753	116	4.2	mg/L
BOD	3,753	193	7	mg/L
Oil & Grease	3,128	50	1.8	mg/L

Effluent Limitations Based on 2005 California Ocean Plan

Constituent/Property	Limit: Daily Maximum (lbs/day)	2016 Mass Emissions (lbs/day) ^[1]	2016 Average Concentration	Units
Arsenic	350	0.019	0.7	ug/L
Cadmium	48	0.001	0.05	ug/L
Chromium	96	0.05	1.8	ug/L
Copper	120	0.3	11	ug/L
Lead	96	0.000	0	ug/L
Mercury	1.9	0.00006	0.002	ug/L
Nickel	240	0.12	4.46	ug/L
Selenium	720	0.018	0.66	ug/L
Silver	32	0.00	0	ug/L
Zinc	860	1.3	46.8	ug/L
Cyanide	48	0.006	0.0002	mg/L
Residual Chlorine	96	1.1	0.04	mg/L
Ammonia	29,000	19.3	0.7	mg/L
Non-Chor. Phenols	1,400	0	0	ug/L
Chlorinated Phenols	48	0	0	ug/L
Endosulfan	0.22	0.00	0	ng/L
Endrin	0.048	0.000	0	ng/L
hexachlorocyclohexanes *(HCH)	0.096	0.000	0	ng/L

* (all as Lindane, the gamma isomer)

Effluent Limitations Based on 2005 California Ocean Plan				
Constituent/Property	Limit: 30-Day Average (lbs/day)	2016 Mass Emissions (lbs/day) ^[1]	2016 Average Concentration	Units
Acrolein	2,600	0	0	ug/L
Antimony	14,000	0.011	0.4	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	0.18	6.4	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	0.01	0.32	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	0.00	0	ug/L
Bis(2-chloroethyl)ether	0.54	0.00	0	ug/L
Bis(2-ethylhexyl)phthalate	42	0	0	ug/L
Carbon Tetrachloride	11	0	0	ug/L
Chlordane	0.00027	0.00000	0	ng/L
Chlorodibromomethane	100	0.04	1.3	ug/L
Chloroform	1,500	0.09	3.4	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	0.077	2.8	ug/L
Dichloromethane (methylene chloride)	5,400	0.000	0	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: 30-Day Average <u>(lbs/day)</u>	2016 Mass Emissions <u>(lbs/day)</u> ^[1]	2016 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. R9-2013-0006 effective on April 4, 2013 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 lb/day		30 3,753	45 5,630		50 6,255
Total Suspended Solids	mg/L lb/day		30 3,753	45 5,630		50 6,255
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 lb/day		25 3,128	40 5,004		75 9,383
Settleable Solids	mL/L		1	1.5		3
Turbidity	NTU		75	100		225
Total Residual Chlorine(TRC)	mg/L lb/day	0.19 24			0.76 96	5.7 718
Copper, Total Recoverable	ug/L lb/day	98 12			960 120	2,700 340

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

Performance Goals Based on 2005 California Ocean Plan				
Constituent	Units	6-month Median	Daily Maximum	Instantaneous Maximum
Arsenic	ug/L	480	2,800	7,400
	lb/day	60	350	920
Cadmium	ug/L	96	380	960
	lb/day	12	48	120
Chromium 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	3.8	15.0	38
	lb/day	0.47	1.9	4.8
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	1,200	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	0.024	0.048	0.072
HCH (hexachlorocyclohexanes)	ng/L	380	760	1,100
	lb/day	0.04	0.096	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 2.9×10^{-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, [mailto:Tstebbins@sandiego.gov]

Performance Goals Based on 2005 California Ocean Plan Continued		
Constituent	Monthly Average (30-Day)	
	ug/L	lbs/day
Acrolein	21,000	2600
Antimony	110,000	14,000
Bis(2-chloroethoxy) methane	420	53
Bis(2-chloroisopropyl) ether	110,000	14,000
Chlorobenzene	54,000	6800
Chromium (III) 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 have 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 2016

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 -2016	7.40	318	19626	6.11	8	408	97.5
FEBRUARY -2016	7.46	319	19847	4.12	11	378	96.6
MARCH -2016	7.52	320	20069	4.31	11	395	96.6
APRIL -2016	7.47	312	19438	3.95	10	329	96.8
MAY -2016	7.59	314	19876	3.45	11	317	96.5
JUNE -2016	7.70	325	20871	2.47	8	165	97.5
JULY -2016	7.59	292	18484	1.50	6	75	97.9
AUGUST -2016	7.59	296	18737	1.58	5	66	98.3
SEPTEMBER-2016	7.46	316	19660	2.61	3	65	99.1
OCTOBER -2016	7.25	348	21042	1.53	3	38	99.1
NOVEMBER -2016	7.29	345	20976	3.02	4	101	98.8
DECEMBER -2016	7.26	361	21858	5.02	4	167	98.9
Average	7.47	322	20040	3.31	7	209	97.8

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 2016

Total Suspended Solids Concentration
(24-hour composite)

Source:	Influent Flow	Influent Daily TSS	Influent Daily VSS	Influent Percent VSS	Influent Daily Mass Emission
Month/ Units:	(MGD)	(mg/L)	(mg/L)	(%)	(lbs/Day)
JANUARY -2016	7.40	268	246	91.8	16540
FEBRUARY -2016	7.46	262	245	93.5	16301
MARCH -2016	7.52	273	254	93.0	17122
APRIL -2016	7.47	270	251	93.0	16821
MAY -2016	7.59	277	259	93.5	17534
JUNE -2016	7.70	303	282	93.1	19458
JULY -2016	7.59	276	253	91.7	17471
AUGUST -2016	7.59	288	266	92.4	18231
SEPTEMBER-2016	7.46	274	252	92.0	17047
OCTOBER -2016	7.25	297	273	91.9	17958
NOVEMBER -2016	7.29	279	256	91.8	16963
DECEMBER -2016	7.26	280	261	93.2	16954
Average	7.47	279	258		17367

Total Suspended Solids Concentration
(24-hour composite)

Source:	Effluent Flow	Daily Effluent TSS	Daily Effluent VSS	Daily Percent VSS	Daily Effluent Mass Emission	Percent Removal TSS	Percent Removal VSS
Month/ Units:	(MGD)	(mg/L)	(mg/L)	(%)	(lbs/Day)	(%)	(%)
JANUARY -2016	6.11	7.3	6.5	89.0	372	97.3	97.4
FEBRUARY -2016	4.12	7.0	6.4	91.4	241	97.3	97.4
MARCH -2016	4.31	6.4	5.9	92.2	230	97.7	97.7
APRIL -2016	3.95	6.8	6.2	91.2	224	97.5	97.5
MAY -2016	3.45	7.3	6.8	93.2	210	97.4	97.4
JUNE -2016	2.47	6.6	6.0	90.9	136	97.8	97.9
JULY -2016	1.50	6.0	5.4	90.0	75	97.8	97.9
AUGUST -2016	1.58	<2.5	<2.5	*	0	100.0	100.0
SEPTEMBER-2016	2.61	<2.5	<2.5	*	0	100.0	100.0
OCTOBER -2016	1.53	<2.5	<2.5	*	0	100.0	100.0
NOVEMBER -2016	3.02	<2.5	<2.5	*	0	100.0	100.0
DECEMBER -2016	5.02	2.6	<2.5	0.0	109	99.1	100.0
Average	3.31	4.2	3.6		133	98.5	98.6

*= undetermined, the percent VSS was not calculated because TSS and VSS results were below the MDL.

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

SOUTH BAY WATER RECLAMATION PLANT

Annual 2016

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 -2016	6.11	7.35	ND	8	7.3	6.5	1010
FEBRUARY -2016	4.12	7.37	ND	11	7.0	6.4	949
MARCH -2016	4.31	7.46	ND	11	6.4	5.9	994
APRIL -2016	3.95	7.34	ND	10	6.8	6.2	1020
MAY -2016	3.45	7.33	ND	11	7.3	6.8	1020
JUNE -2016	2.47	7.35	ND	8	6.6	6.0	1010
JULY -2016	1.50	7.31	ND	6	6.0	5.4	1060
AUGUST -2016	1.58	7.37	ND	5	<2.5	<2.5	974
SEPTEMBER-2016	2.61	7.30	ND	<5	<2.5	<2.5	986
OCTOBER -2016	1.53	7.28	ND	3	<2.5	<2.5	1010
NOVEMBER -2016	3.02	7.26	ND	4	<2.5	<2.5	1010
DECEMBER -2016	5.02	7.25	ND	4	2.6	<2.5	1080
Average	3.31	7.33	0.0	7	4.2	3.6	1010

Analyte:	Oil & Grease	Outfall Temperature	Residual Chlorine	Turbidity	Dissolved Oxygen
Units:	(mg/L)	(°C)	(mg/L)	(NTU)	(mg/L)
JANUARY -2016	2.4	22.8	0.04	2.35	4.84
FEBRUARY -2016	1.6	23.8	0.06	3.61	3.69
MARCH -2016	1.2	24.2	0.05	3.27	3.75
APRIL -2016	1.2	25.0	0.04	2.90	3.46
MAY -2016	1.2	25.5	0.05	3.46	4.40
JUNE -2016	2.4	26.4	0.05	3.19	4.19
JULY -2016	2.9	27.9	0.05	2.81	3.15
AUGUST -2016	<5.1	28.6	0.05	1.66	2.74
SEPTEMBER-2016	<1.2	28.3	0.06	1.52	1.46
OCTOBER -2016	3.7	27.2	0.03	1.31	2.15
NOVEMBER -2016	3.3	26.2	0.04	1.57	1.37
DECEMBER -2016	2.0	24.0	ND	1.60	1.34
Average	1.8	25.8	0.04	2.44	3.05

NR=not detected

NR=not required

SOUTH BAY WATER RECLAMATION PLANT

Annual 2016

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 -2016	7.40	NR	1060	318	268	246	NR
FEBRUARY -2016	7.46	7.59	1060	319	262	245	213
MARCH -2016	7.52	NR	1080	320	273	254	NR
APRIL -2016	7.47	NR	1080	312	270	251	NR
MAY -2016	7.59	7.29	1080	314	277	259	226
JUNE -2016	7.70	NR	1060	325	303	282	NR
JULY -2016	7.59	NR	1050	292	276	253	NR
AUGUST -2016	7.59	7.53	1030	293	288	266	228
SEPTEMBER-2016	7.46	NR	1010	316	274	252	NR
OCTOBER -2016	7.25	7.51	1050	348	297	273	256
NOVEMBER -2016	7.29	NR	1050	345	279	256	NR
DECEMBER -2016	7.26	NR	1090	361	280	261	NR
Average	7.47	7.48	1058	322	279	258	231

NR=not detected

NR=not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Trace Metals

ANNUAL 2016

Analyte:	Aluminum	Aluminum	Antimony	Antimony	Arsenic	Arsenic
MAX_MDL Units:	23.8	23.8	2.44	2.44	.824	.412
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:						2800
JANUARY -2016	629	ND	4.0	ND	1.1	0.9
FEBRUARY -2016	580	ND	ND	ND	0.7	0.4
MARCH -2016	585	<24	ND	<2.4	0.9	0.5
APRIL -2016	559	44	ND	ND	0.7	0.5
MAY -2016	501	ND	ND	ND	0.9	0.6
JUNE -2016	533	ND	ND	ND	1.0	0.6
JULY -2016	532	ND	ND	ND	2.8	2.0
AUGUST -2016	516	ND	ND	ND	1.5	1.2
SEPTEMBER-2016	506	ND	ND	ND	1.0	0.7
OCTOBER -2016	611	ND	ND	ND	ND	0.1
NOVEMBER -2016	499	26	3.6	4.4	1.2	0.8
DECEMBER -2016	497	ND	ND	ND	0.4	ND
AVERAGE	546	6	0.6	0.4	1.0	0.7

Analyte:	Barium	Barium	Beryllium	Beryllium	Boron	Boron
MAX_MDL Units:	.7	.7	.05	.05	2.66	2.66
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:						
JANUARY -2016	77.8	62.6	ND	ND	331	328
FEBRUARY -2016	79.5	54.1	ND	ND	397	384
MARCH -2016	98.0	62.6	ND	ND	360	359
APRIL -2016	116	79.2	ND	ND	334	319
MAY -2016	113	85.1	ND	ND	382	352
JUNE -2016	117	74.4	ND	ND	395	393
JULY -2016	134	84.3	ND	ND	471	466
AUGUST -2016	117	32.1	ND	ND	327	331
SEPTEMBER-2016	110	66.5	ND	ND	294	314
OCTOBER -2016	160	51.5	ND	ND	314	323
NOVEMBER -2016	127	86.0	ND	ND	331	334
DECEMBER -2016	121	83.8	ND	ND	357	377
AVERAGE	114	68.5	0.0	0.0	358	357

Analyte:	Cadmium	Cadmium	Chromium	Chromium	Cobalt	Cobalt
MAX_MDL Units:	.26	.26	.54	.54	.54	.24
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		48		760		
JANUARY -2016	0.50	ND	3.5	2.5	NR	0.50
FEBRUARY -2016	0.41	ND	3.8	2.7	0.61	0.44
MARCH -2016	ND	ND	6.1	2.1	0.76	0.53
APRIL -2016	0.43	ND	3.6	2.3	0.67	0.52
MAY -2016	0.35	0.32	3.9	2.0	0.83	0.60
JUNE -2016	0.39	0.28	5.2	2.6	0.78	0.57
JULY -2016	0.13	ND	2.5	0.6	0.53	0.25
AUGUST -2016	0.15	ND	5.0	2.2	1.07	0.82
SEPTEMBER-2016	0.42	ND	3.7	1.1	0.73	0.33
OCTOBER -2016	ND	ND	6.6	1.3	1.14	0.75
NOVEMBER -2016	ND	ND	4.9	1.2	1.39	1.03
DECEMBER -2016	ND	ND	3.5	0.7	0.64	ND
AVERAGE	0.23	0.05	4.4	1.8	0.83	0.53

ND= not detected

NR= not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Trace Metals

ANNUAL 2016

Analyte:	Copper	Copper	Iron	Iron	Lead	Lead
MAX_MDL Units:	2.16	2.16	15.6	15.6	1.68	1.68
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		960				760
JANUARY -2016	52	6	750	51	3.0	ND
FEBRUARY -2016	78	9	548	50	ND	ND
MARCH -2016	86	9	581	66	2.2	ND
APRIL -2016	75	10	729	49	2.2	ND
MAY -2016	83	9	630	51	ND	ND
JUNE -2016	83	11	682	56	3.1	ND
JULY -2016	76	13	744	58	1.7	0.3
AUGUST -2016	99	13	6040	283	4.6	ND
SEPTEMBER -2016	96	18	835	79	3.9	ND
OCTOBER -2016	123	9	3860	189	4.1	ND
NOVEMBER -2016	112	18	822	49	2.0	ND
DECEMBER -2016	88	11	648	60	ND	ND
AVERAGE	88	11	1406	87	2.2	0.0
Analyte:	Manganese	Manganese	Mercury	Mercury	Molybdenum	Molybdenum
MAX_MDL Units:	.78	.78	.025	.005	.32	.32
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:				15.00		
JANUARY -2016	93.1	74.8	0.036	ND	NR	4.90
FEBRUARY -2016	82.1	34.2	0.051	0.007	9.14	5.86
MARCH -2016	85.4	43.7	0.069	ND	7.41	4.55
APRIL -2016	89.2	23.3	0.159	ND	6.74	3.98
MAY -2016	73.8	25.2	0.090	0.006	7.44	4.25
JUNE -2016	86.5	33.1	0.100	0.005	9.16	4.41
JULY -2016	98.8	36.0	0.166	ND	7.22	3.82
AUGUST -2016	95.2	75.4	0.146	ND	6.79	5.34
SEPTEMBER -2016	81.1	33.4	0.139	ND	14.2	5.90
OCTOBER -2016	94.5	56.2	0.156	ND	7.89	4.23
NOVEMBER -2016	99.4	33.3	0.120	ND	7.14	3.71
DECEMBER -2016	95.5	15.5	0.139	0.003	7.23	3.59
AVERAGE	89.5	40.3	0.114	0.002	8.21	4.55

ND= not detected

NR= not requested

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Trace Metals

ANNUAL 2016

Analyte:	Nickel	Nickel	Selenium	Selenium	Silver	Silver
MAX_MDL Units:	.53	.53	.17	.17	.73	.73
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:		1900		5700		250
JANUARY -2016	5.60	5.10	1.04	0.40	ND	ND
FEBRUARY -2016	5.17	3.89	1.33	0.35	ND	ND
MARCH -2016	11.0	8.56	2.21	0.55	ND	ND
APRIL -2016	6.16	4.09	2.36	0.92	ND	ND
MAY -2016	6.88	6.76	1.65	0.88	0.75	ND
JUNE -2016	6.61	4.23	1.76	0.69	ND	ND
JULY -2016	5.53	3.82	2.78	1.12	ND	ND
AUGUST -2016	5.29	3.48	1.73	0.85	ND	ND
SEPTEMBER-2016	5.44	3.65	2.10	0.50	ND	ND
OCTOBER -2016	5.72	3.82	1.25	0.54	26.0	ND
NOVEMBER -2016	5.02	3.46	1.78	0.73	25.5	ND
DECEMBER -2016	4.77	2.62	1.47	0.37	ND	ND
AVERAGE	6.10	4.46	1.79	0.66	4.35	0.0
Analyte:	Thallium	Thallium	Vanadium	Vanadium	Zinc	Zinc
MAX_MDL Units:	3.12	3.12	2.2	2.2	4.19	4.19
Source:	Influent	Effluent	Influent	Effluent	Influent	Effluent
Month/Limit:					6900	
JANUARY -2016	ND	ND	NR	1.10	103	32.0
FEBRUARY -2016	ND	ND	1.85	0.80	161	45.2
MARCH -2016	ND	ND	2.47	0.87	159	30.5
APRIL -2016	ND	ND	1.81	0.63	169	55.9
MAY -2016	ND	ND	2.59	1.30	178	57.0
JUNE -2016	ND	ND	1.78	ND	250	142
JULY -2016	ND	ND	4.46	3.20	179	55.2
AUGUST -2016	ND	ND	9.85*	3.47*	204	9.2
SEPTEMBER-2016	ND	ND	2.20	1.59	174	35.0
OCTOBER -2016	ND	ND	2.44	2.03	217	12.0
NOVEMBER -2016	ND	3.81	1.88	ND	201	44.9
DECEMBER -2016	ND	ND	1.99	1.18	177	42.5
AVERAGE	0.0	0.32	2.35	1.15	181	46.8

ND= not detected

NR= not requested

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Cations

ANNUAL 2016

Source: MDL/Units:	Calcium		Magnesium		Lithium	
	INF	.04 mg/L	INF	.1 mg/L	INF	.002 mg/L
Source:	INF	EFF	INF	EFF	INF	EFF
JANUARY -2016	66.5	69.4	31.2	29.9	0.041	0.039
FEBRUARY -2016	62.4	64.5	27.9	27.6	0.034	0.029
MARCH -2016	72.0	71.3	34.2	33.4	NA	0.039
APRIL -2016	79.4	78.6	28.8	28.0	0.048	0.046
MAY -2016	81.4	88.3	31.5	31.0	0.054*	0.055*
JUNE -2016	74.6	76.0	25.9	25.4	0.047	0.047
JULY -2016	74.2	75.3	26.8	26.2	0.040	0.040
AUGUST -2016	76.1	73.1	27.9	27.4	0.038	0.037
SEPTEMBER-2016	61.3	62.6	23.2	22.7	0.040	0.038
OCTOBER -2016	70.9	74.3	27.1	28.2	0.044	0.045
NOVEMBER -2016	85.2	88.2	32.0	31.4	0.052	0.046
DECEMBER -2016	75.9	81.3	28.2	28.0	0.047	0.046
Average:	73.3	75.2	28.7	28.3	0.043	0.041

Source: MDL/Units:	Sodium		Potassium	
	INF	1 mg/L	INF	.3 mg/L
Source:	INF	EFF	INF	EFF
JANUARY -2016	217	224	18.6	17.2
FEBRUARY -2016	196	194	19.7	17.5
MARCH -2016	214	214	21.7	19.5
APRIL -2016	192	198	20.4	18.8
MAY -2016	219	220	23.8	21.3
JUNE -2016	184	180	19.2	17.5
JULY -2016	187	190	19.6	18.0
AUGUST -2016	196	198	20.7	18.8
SEPTEMBER-2016	164	165	18.1	16.5
OCTOBER -2016	204	187	19.3	17.9
NOVEMBER -2016	243	242	21.4	19.7
DECEMBER -2016	190	196	18.6	17.2
Average:	201	201	20.1	18.3

*= method blank > 10% samples.

ND=not detected; NA=not analyzed

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Anions

ANNUAL 2016

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 -2016	0.4	0.4	245	283	0.23	0.47
FEBRUARY -2016	0.3	0.4	240	238	0.16	0.51
MARCH -2016	0.3	0.3	237	242	0.15	0.48
APRIL -2016	0.3	0.3	223	234	0.22	0.44
MAY -2016	0.4	ND	230	238	0.46	0.49
JUNE -2016	0.4	0.4	222	231	0.44	0.46
JULY -2016	0.4	0.4	231	242	0.33	0.49
AUGUST -2016	0.3	0.3	218	225	0.36	0.45
SEPTEMBER-2016	0.3	0.3	210	212	0.31	0.41
OCTOBER -2016	0.3	0.3	228	226	0.27	0.42
NOVEMBER -2016	0.3	0.3	218	231	0.29	0.45
DECEMBER -2016	0.3	0.3	234	233	0.26	0.42
AVERAGE	0.3	0.3	228	236	0.29	0.46

Analyte:	Nitrate	Nitrate	O-Phosphate	O-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 -2016	1.32	51.0	10.6	1.4	159	181
FEBRUARY -2016	1.12	56.7	11.6	0.8	140	154
MARCH -2016	0.23	13.0	11.2	1.0	153	182
APRIL -2016	1.97	37.6	10.8	4.9	201	235
MAY -2016	0.74	36.9	10.8	7.5	171	225
JUNE -2016	2.32	41.4	10.5	5.7	173	233
JULY -2016	1.06	38.3	9.4	7.1	177	226
AUGUST -2016	1.57	15.8	9.0	1.7	167	208
SEPTEMBER-2016	2.09	35.0	9.1	6.1	160	198
OCTOBER -2016	<0.04	42.7	10.1	5.8	169	210
NOVEMBER -2016	0.06	50.1	10.8	5.6	174	233
DECEMBER -2016	<0.04	51.0	10.5	1.0	193	241
AVERAGE	1.04	39.1	10.4	4.1	170	211

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Ammonia-Nitrogen and Total Cyanides

ANNUAL 2016

Analyte:	Ammonia-N	Ammonia-N	Total Cyanides	Total Cyanides
MDL/Units:	.3 MG/L	.3 MG/L	.002 MG/L	.002 MG/L
Source:	SB_INF_02	SB_OUTFALL_01	SB_INF_02	SB_OUTFALL_01
=====	=====	=====	=====	=====
JANUARY -2016	36.7	ND	ND	ND
FEBRUARY -2016	37.8*	ND*	ND	ND
MARCH -2016	37.6	0.6	ND	ND
APRIL -2016	37.7	ND	ND	ND
MAY -2016	33.6	ND	ND	ND
JUNE -2016	36.7	ND	ND	ND
JULY -2016	34.6	ND	<0.002	ND
AUGUST -2016	37.6	7.4	ND	0.002
SEPTEMBER-2016	33.2	ND	ND	ND
OCTOBER -2016	30.5	ND	ND	ND
NOVEMBER -2016	37.6	ND	ND	ND
DECEMBER -2016	42.5	ND	ND	ND
=====	=====	=====	=====	=====
Average:	36.2	0.7	0.0	0.0002

*= The ammonia was analyzed with an expired buffer solution, not used in average.

ND= not detected

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

Analyzed by: TestAmerica Laboratories Richland

ANNUAL 2016

Month	Gross Alpha Radiation	Gross Beta Radiation
JANUARY -2016	-0.3 ± 4.4	20.1 ± 5.2
FEBRUARY -2016	-0.7 ± 3.6	20.1 ± 4.2
MARCH -2016	3.1 ± 3.0	23.3 ± 4.5
APRIL -2016	7.8 ± 5.2	24.3 ± 6.2
MAY -2016*	8.6 ± 2.1	10.1 ± 1.6
JUNE -2016*	2.2 ± 2.1	4.2 ± 1.9
JULY -2016*	3.4 ± 2.0	8.8 ± 1.6
AUGUST -2016*	4.3 ± 2.3	6.6 ± 1.6
SEPTEMBER-2016*	4.6 ± 2.7	10.5 ± 2.5
OCTOBER -2016*	4.8 ± 3.1	5.1 ± 2.1
NOVEMBER -2016*	6.2 ± 2.5	12.1 ± 1.8
DECEMBER -2016*	3.0 ± 2.2	12.1 ± 1.9
AVERAGE	3.9 ± 2.9	13.1 ± 2.9

*= analyzed by: FGL Environmental Laboratory

Units in picocuries/liter (pCi/L)

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: EFFLUENT (SB_OUTFALL_01)

CHLORINATED PESTICIDE ANALYSIS, EPA Method 608 (WITH ADDITIONS)

ANNUAL 2016

Source: Date: Analyte	MDL	Units	EFFLUENT												Avg
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Aldrin	4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	4.3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	2.15	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	2	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	1.71	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	2	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	1.4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p-DDT	3	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	2	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o,p-DDT	2.4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	.89	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	9.4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	1.4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	1.83	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	2	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans Nonachlor	1.1	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis Nonachlor	4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	1.5	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta Endosulfan	3.1	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	7	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	6	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	5.4	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	2.3	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	20	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	250	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1016	250	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1221	2000	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1232	750	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1242	250	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1248	250	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1254	500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1260	500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	4.3	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Hexachlorocyclohexanes	2.15	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
DDT and derivatives	4	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Chlordane + related cmpds.	2	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Polychlorinated biphenyls	2000	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Endosulfans	7	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Heptachlors	9.4	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Chlorinated Hydrocarbons	2000	NG/L	0	0	0	0	0	0	0	0	0	0	0	0	0

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
 SOURCE: INFLUENT (SB_INF_02)

CHLORINATED PESTICIDE ANALYSIS, EPA Method 608 (WITH ADDITIONS)

ANNUAL 2016

Source: Date: Analyte	MDL	Units	INFLUENT				Avg
			FEB	MAY	AUG	OCT	
Aldrin	4	NG/L	ND	ND	ND	ND	ND
Dieldrin	4.3	NG/L	ND	ND	ND	ND	ND
BHC, Alpha isomer	2.15	NG/L	ND	ND	ND	ND	ND
BHC, Beta isomer	2	NG/L	ND	ND	ND	ND	ND
BHC, Gamma isomer	1.71	NG/L	ND	ND	ND	ND	ND
BHC, Delta isomer	2	NG/L	ND	ND	ND	ND	ND
p,p-DDD	4	NG/L	ND	ND	ND	ND	ND
p,p-DDE	1.4	NG/L	ND	ND	ND	ND	ND
p,p-DDT	3	NG/L	ND	ND	ND	ND	ND
o,p-DDD	4	NG/L	ND	ND	340	ND	85
o,p-DDE	2	NG/L	ND	ND	ND	ND	ND
o,p-DDT	2.4	NG/L	ND	ND	ND	ND	ND
Heptachlor	.89	NG/L	ND	ND	ND	ND	ND
Heptachlor epoxide	9.4	NG/L	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	1.4	NG/L	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	1.83	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	2	NG/L	ND	ND	ND	ND	ND
Trans Nonachlor	1.1	NG/L	ND	ND	ND	ND	ND
Cis Nonachlor	4	NG/L	ND	ND	ND	ND	ND
Alpha Endosulfan	1.5	NG/L	ND	ND	ND	ND	ND
Beta Endosulfan	3.1	NG/L	ND	ND	ND	ND	ND
Endosulfan Sulfate	7	NG/L	ND	ND	ND	ND	ND
Endrin	6	NG/L	ND	ND	ND	ND	ND
Endrin aldehyde	5.4	NG/L	ND	ND	ND	ND	ND
Mirex	2.3	NG/L	ND	ND	ND	ND	ND
Methoxychlor	20	NG/L	ND	ND	ND	ND	ND
Toxaphene	250	NG/L	ND	ND	ND	ND	ND
PCB 1016	250	NG/L	ND	ND	ND	ND	ND
PCB 1221	2000	NG/L	ND	ND	ND	ND	ND
PCB 1232	750	NG/L	ND	ND	ND	ND	ND
PCB 1242	250	NG/L	ND	ND	ND	ND	ND
PCB 1248	250	NG/L	ND	ND	ND	ND	ND
PCB 1254	500	NG/L	ND	ND	ND	ND	ND
PCB 1260	500	NG/L	ND	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	ND	ND
Aldrin + Dieldrin	4.3	NG/L	0	0	0	0	0
Hexachlorocyclohexanes	2.15	NG/L	0	0	0	0	0
DDT and derivatives	4	NG/L	0	0	340	0	85
Chlordane + related cmpds.	2	NG/L	0	0	0	0	0
Polychlorinated biphenyls	2000	NG/L	0	0	0	0	0
Endosulfans	7	NG/L	0	0	0	0	0
Heptachlors	9.4	NG/L	0	0	0	0	0
Chlorinated Hydrocarbons	2000	NG/L	0	0	340	0	85

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
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Organophosphorus Pesticides - EPA Method 614/622 (with additions)

ANNUAL 2016

Source:		Influent 03-MAY-2016	Influent 04-OCT-2016	Effluent 03-MAY-2016	Effluent 04-OCT-2016
Date:	MDL Units	P857791	P895201	P857796	P895206
<hr/>					
Demeton O	.02 UG/L	ND	ND	ND	ND
Demeton S	.08 UG/L	ND	ND	ND	ND
Diazinon	.04 UG/L	ND	ND	ND	ND
Guthion	.09 UG/L	ND	ND	ND	ND
Malathion	.06 UG/L	ND	ND	ND	ND
Parathion	.07 UG/L	ND	ND	ND	ND
Dichlorvos	.04 UG/L	ND	ND	ND	ND
Disulfoton	.04 UG/L	ND	ND	ND	ND
Dimethoate	.12 UG/L	ND	NR	ND	NR
Stirophos	.05 UG/L	ND	ND	ND	ND
Coumaphos	.07 UG/L	ND	ND	ND	ND
Chlorpyrifos	.04 UG/L	ND	ND	ND	ND
<hr/>					
Thiophosphorus Pesticides	.09 UG/L	0.0	0.0	0.0	0.0
Demeton -O, -S	.08 UG/L	0.0	0.0	0.0	0.0
<hr/>					
Total Organophosphorus Pesticides	.12 UG/L	0.0	0.0	0.0	0.0

ND=not detected; NR=not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

Tributyl Tin Analysis

ANNUAL 2016

Source:	Date:	Analyte	INFLUENT					
			MDL	Units	FEB	MAY	AUG	OCT
		Dibutyltin	7	UG/L	ND	ND	ND	ND
		Monobutyltin	16	UG/L	ND	ND	NR	ND
		Tributyltin	2	UG/L	ND	ND	ND	ND

Source:	Date:	Analyte	EFFLUENT					
			MDL	Units	FEB	MAY	AUG	OCT
		Dibutyltin	7	UG/L	ND	ND	ND	ND
		Monobutyltin	16	UG/L	ND	ND	NR	ND
		Tributyltin	2	UG/L	ND	ND	ND	ND

ND=not detected; NR=not required

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02) AND EFFLUENT (SB_OUTFALL_01)

PRIORITY POLLUTANT ANALYSIS-ACID EXTRACTABLE COMPOUNDS, EPA Method 625

ANNUAL 2016

Source: Date: Analyte	MDL	Units	EFFLUENT												AVG
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Additional analytes determined

| 2-Methylphenol | 2.15 UG/L | ND |
|------------------------------------|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 3-Methylphenol(4-MP is unresolved) | UG/L | NA |
| 4-Methylphenol(3-MP is unresolved) | 2.11 UG/L | ND |
| 2,4,5-Trichlorophenol | 1.66 UG/L | ND |

Source: Date: Analyte	MDL	Units	INFLUENT					AVG
			FEB	MAY	AUG	OCT		
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND	ND	
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND	ND	
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND	ND	
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND	ND	
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND	ND	
Phenol	1.76	UG/L	30.4	40.5	53.8	54.4	44.8	
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	30.4	40.5	53.8	54.4	44.8	
Total Phenols	2.16	UG/L	30.4	40.5	53.8	54.4	44.8	

Additional analytes determined

2-Methylphenol	2.15 UG/L	ND	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)	UG/L	NA	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11 UG/L	83.9	104	115	121	106
2,4,5-Trichlorophenol	1.66 UG/L	ND	ND	ND	ND	ND

ND=not detected

NA=not analyzed

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: EFFLUENT (SB_OUTFALL_01)

Priority Pollutants Base/Neutral Compounds, EPA Method 625

ANNUAL 2106

Source: Date: Analyte	MDL	Units	EFFLUENT			AVG
			FEB	MAY	AUG	
Bis-(2-chloroethyl) ether	1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16	UG/L	ND	ND	ND	ND
Nitrobenzene	1.6	UG/L	ND	ND	ND	ND
Hexachloroethane	1.32	UG/L	ND	ND	ND	ND
Isophorone	1.53	UG/L	ND*	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Naphthalene	1.65	UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25	UG/L	ND	ND	ND	ND
Acenaphthylene	1.77	UG/L	ND	ND	ND	ND
Dimethyl phthalate	1.44	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53	UG/L	ND	ND	ND	ND
Acenaphthene	1.8	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36	UG/L	ND	ND	ND	ND
Fluorene	1.61	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57	UG/L	ND	ND	ND	ND
Diethyl phthalate	3.05	UG/L	ND	ND	25.7	6.4
N-nitrosodiphenylamine	3.48	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4	UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48	UG/L	ND	ND	ND	ND
Phenanthrene	1.34	UG/L	ND	ND	ND	ND
Anthracene	1.29	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27	UG/L	ND	ND	ND	ND
Fluoranthene	1.33	UG/L	ND	ND	ND	ND
Pyrene	1.43	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND*	ND	ND*	ND*
Butyl benzyl phthalate	2.84	UG/L	ND	ND	ND	ND
Chrysene	1.16	UG/L	ND	ND	ND	ND
Benzo[a]anthracene	1.1	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96	UG/L	ND	ND	<9.0	0.0
Di-n-octyl phthalate	1	UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35	UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96	UG/L	0.0	0.0	0.0	25.7
						6.4

Additional analytes determined

1-Methylnaphthalene	2.18	UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46	UG/L	ND	ND	ND	ND
Benzo[e]pyrene	1.44	UG/L	ND	ND	ND	ND
Perylene	1.41	UG/L	ND	ND	ND	ND
Biphenyl	2.29	UG/L	ND	ND	ND	ND

*= Quality control for internal check standard and matrix spike standard was below acceptance criteria. Data not reportable and not included in average calculations.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
SAMPLE SOURCE: INFLUENT (SB_INF_02)

Priority Pollutants Base/Neutral Compounds, EPA Method 625

ANNUAL 2106

Source: Date: Analyte	MDL	Units	INFLUENT				AVG
			FEB	MAY	AUG	OCT	
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	5.6	3.9	5.2	4.9	4.9
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	16.3	ND	29.2	34.0	19.9
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	21.9	3.9	34.4	38.9	24.8

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

*= Quality control for internal check standard and matrix spike standard was below acceptance criteria. Data not reportable and not included in average calculations.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: EFFLUENT (SB_OUTFALL_01)

Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

ANNUAL 2016

Source: Date: Analyte	MDL	Units	EFFLUENT				Average
			FEB	MAY	AUG	OCT^	
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND	ND
Chloromethane	.5	UG/L	ND	DNQ0.8	ND	ND	0.0
Vinyl chloride	.4	UG/L	ND	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	ND	DNQ0.57*DNQ0.70.0		
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	.37	UG/L	ND	DNQ0.7DNQ0.38*DNQ0.60.0			
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	.3	UG/L	DNQ0.7	13.5	DNQ0.3DNQ1.6	3.4	
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	.43	UG/L	ND	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	ND	11.2	ND	ND	2.8
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	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	5.2	ND	ND	1.3
Chlorobenzene	.4	UG/L	ND	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND	ND
Bromoform	.5	UG/L	ND	DNQ0.5	ND	ND	0.0
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	.46	UG/L	ND	DNQ0.9	ND	ND	0.0
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	0.0	13.5	0.0	0.0	3.4
Purgeable Compounds	1.3	UG/L	0.0	29.9	0.0	0.0	7.5

Additional analytes determined

Methyl Iodide	.6	UG/L	ND	ND	ND	ND	ND
Carbon disulfide	.6	UG/L	ND	ND	ND	ND	ND
Acetone	6.74	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	.41	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	.85	UG/L	ND	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND	ND

*= Method blank value above the MDL; result not used in average calculations.

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

ND= not detected

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

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

ANNUAL 2016

Source: Date: Analyte	MDL	Units	INFLUENT			Average
			FEB	MAY	AUG	
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
Chloromethane	.5	UG/L	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	DNQ0.53*	DNQ0.60.0	
Chloroethane	.9	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
Acrolein	1.3	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.5DNQ0.9DNQ0.9DNQ1.0		0.0	
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ1.3	2.3	2.4	2.7
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	DNQ1.0DNQ0.9DNQ0.5DNQ0.8		0.0	
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Bromoform	.5	UG/L	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	DNQ0.4DNQ1.3	ND	DNQ0.7	0.0
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.6
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.5	UG/L	0.0	2.3	2.4	2.7
Purgeable Compounds	1.3	UG/L	0.0	2.3	2.4	2.7
						1.9

Additional analytes determined

Methyl Iodide	.6	UG/L	ND	ND	ND	ND
Carbon disulfide	.6	UG/L	4.0	6.8	3.8	5.1
Acetone	6.74	UG/L	143	189	135	361
Allyl chloride	.6	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	DNQ0.6	ND	ND	DNQ0.5
Chloroprene	.4	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	6.3	UG/L	DNQ6.6DNQ6.5	ND	DNQ7.3	0.0
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND
2-Nitropropane	12	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; result not used in average calculations.

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

ND= not detected

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

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Dioxin and Furan Analysis

ANNUAL 2016

Source: Date: Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				JAN	FEB	MAR	APR
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	DNQ2.42	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	21.9	DNQ13.7	DNQ12.5	DNQ16.8
octa CDD	.0012	PG/L	0.001	210	150	120	150
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	DNQ1.61
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-hexa CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	DNQ1.95
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	DNQ4.58	DNQ4.26	DNQ2.86	DNQ3.47
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	DNQ9.05	DNQ9.68	DNQ7.64	DNQ7.08

Source: Date: Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				MAY	JUN	JUL	AUG
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	DNQ3.27	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	DNQ3.7	DNQ10.6	DNQ7.11
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	DNQ16.6	25.9	70.4	42.7
octa CDD	.0012	PG/L	0.001	160	140	130	170
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	DNQ1.11	DNQ3.08
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	DNQ2.87
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	DNQ4.55	DNQ3.85
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	DNQ7.83	DNQ8.85	DNQ8.06

Source: Date: Analyte	MDL	Units	Equiv	INF	INF	INF	INF
				SEP	OCT	NOV	DEC
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	DNQ8.18	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	48.7	DNQ3.71	DNQ3.39
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	DNQ13.8	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	DNQ18.1	282	DNQ15.0	DNQ16.5
octa CDD	.0012	PG/L	0.001	130	240	110	110
2,3,7,8-tetra CDF	.0307	PG/L	0.100	DNQ0.706	DNQ1.82	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	DNQ5.08	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	DNQ0.948	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	DNQ1.52	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	DNQ1.99	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	DNQ2.36	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	DNQ2.91	DNQ6.13	DNQ3.16	DNQ2.88
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	DNQ1.59	ND	ND
octa CDF	.0017	PG/L	0.001	DNQ6.09	DNQ9.37	DNQ6.56	DNQ5.49

ND= not detected

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

Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: EFFLUENT (SB_OUTFALL_01)

Dioxin and Furan Analysis

ANNUAL 2016

Source:			EFF	EFF	EFF	EFF	
Date:			JAN	FEB	MAR	APR	
Analyte	MDL	Units	Equiv	P829459	P831486	P840222	P851729
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	ND	ND	ND	DNQ2.14
octa CDD	.0012	PG/L	0.001	DNQ4.64	DNQ5.03	DNQ4.11	DNQ34.0
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	ND	ND	ND

Source:			EFF	EFF	EFF	EFF	
Date:			MAY	JUN	JUL	AUG	
Analyte	MDL	Units	Equiv	P857796	P863748	P873576	P878465
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	ND	ND	DNQ2.20	ND
octa CDD	.0012	PG/L	0.001	ND	ND	DNQ4.42	DNQ5.46
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	ND	ND	ND

Source:			EFF	EFF	EFF	EFF	
Date:			SEP	OCT	NOV	DEC	
Analyte	MDL	Units	Equiv	P886312	P895206	P903458	P909780
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	ND	DNQ1.92	ND	ND
octa CDD	.0012	PG/L	0.001	DNQ5.43	DNQ7.09	ND	ND
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	ND	ND	ND

ND= not detected

DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.
Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
SOURCE: INFLUENT (SB_INF_02)

Dioxin and Furan Analysis

ANNUAL 2016

Source:	MDL	Units	Equiv	INF	INF	INF	INF
				TCCD	JAN	FEB	MAR
Date:							
Analyte				P829455	P831481	P840218	P851725
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	DNQ0.242	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	0.219	DNQ0.137	DNQ0.125	DNQ0.168
octa CDD	.0012	PG/L	0.001	0.210	0.150	0.120	0.150
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	DNQ0.161
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hepta CDF	.0521	PG/L	0.100	ND	ND	ND	DNQ0.195
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	DNQ0.046	DNQ0.043	DNQ0.029	DNQ0.035
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	DNQ0.009	DNQ0.010	DNQ0.008	DNQ0.007
Source:							
Analyte				P857791	P863744	P873572	P878460
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	DNQ0.327	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	DNQ0.370	DNQ1.060	DNQ0.711
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	DNQ0.166	0.259	0.704	0.427
octa CDD	.0012	PG/L	0.001	0.160	0.140	0.130	0.170
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	DNQ0.111	DNQ0.308
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hepta CDF	.0521	PG/L	0.100	ND	ND	ND	DNQ0.287
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	DNQ0.046	DNQ0.039
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	DNQ0.008	DNQ0.009	DNQ0.008
Source:							
Analyte				P886308	P895201	P902955	P909776
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	DNQ0.818	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	4.870	DNQ0.371	DNQ0.339
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	DNQ1.380	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	DNQ0.181	2.820	DNQ0.150	DNQ0.165
octa CDD	.0012	PG/L	0.001	0.130	0.240	0.110	0.110
2,3,7,8-tetra CDF	.0307	PG/L	0.100	DNQ0.071	DNQ0.182	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	DNQ0.254	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	DNQ0.474	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	DNQ0.152	ND	ND
1,2,3,6,7,8-hepta CDF	.0521	PG/L	0.100	ND	DNQ0.199	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	DNQ0.236	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	DNQ0.029	DNQ0.061	DNQ0.032	DNQ0.029
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	DNQ0.016	ND	ND
octa CDF	.0017	PG/L	0.001	DNQ0.006	DNQ0.009	DNQ0.007	DNQ0.005

ND= not detected

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

Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
 SOURCE: EFFLUENT (SB_OUTFALL_01)
 Dioxin and Furan Analysis

ANNUAL 2016

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

Source:	MDL	Units	Equiv	EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
Date:				JAN	FEB	MAR	APR
Analyte				P829459	P831486	P840222	P851729
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	ND	ND	ND	DNQ0.021
octa CDD	.0012	PG/L	0.001	DNQ0.005	DNQ0.005	DNQ0.004	DNQ0.034
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	ND	ND	ND
Source:				EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
Date:				MAY	JUN	JUL	AUG
Analyte				P857796	P863748	P873576	P878465
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	ND	ND	DNQ0.022	ND
octa CDD	.0012	PG/L	0.001	ND	ND	DNQ0.004	DNQ0.005
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	ND	ND	ND
Source:				EFF	EFF	EFF	EFF
				TCCD	TCCD	TCCD	TCCD
Date:				SEP	OCT	NOV	DEC
Analyte				P886312	P895206	P903458	P909780
2,3,7,8-tetra CDD	.316	PG/L	1.000	ND	ND	ND	ND
1,2,3,7,8-penta CDD	.3035	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8_hexa_CDD	.0808	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDD	.0891	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDD	.0756	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDD	.00857	PG/L	0.010	ND	DNQ0.019	ND	ND
octa CDD	.0012	PG/L	0.001	DNQ0.005	DNQ0.007	ND	ND
2,3,7,8-tetra CDF	.0307	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8-penta CDF	.02105	PG/L	0.050	ND	ND	ND	ND
2,3,4,7,8-penta CDF	.2155	PG/L	0.500	ND	ND	ND	ND
1,2,3,4,7,8-hexa CDF	.0486	PG/L	0.100	ND	ND	ND	ND
1,2,3,6,7,8-hexa CDF	.0521	PG/L	0.100	ND	ND	ND	ND
1,2,3,7,8,9-hexa CDF	.0556	PG/L	0.100	ND	ND	ND	ND
2,3,4,6,7,8-hexa CDF	.0663	PG/L	0.100	ND	ND	ND	ND
1,2,3,4,6,7,8-hepta CDF	.00489	PG/L	0.010	ND	ND	ND	ND
1,2,3,4,7,8,9-hepta CDF	.0069	PG/L	0.010	ND	ND	ND	ND
octa CDF	.0017	PG/L	0.001	ND	ND	ND	ND

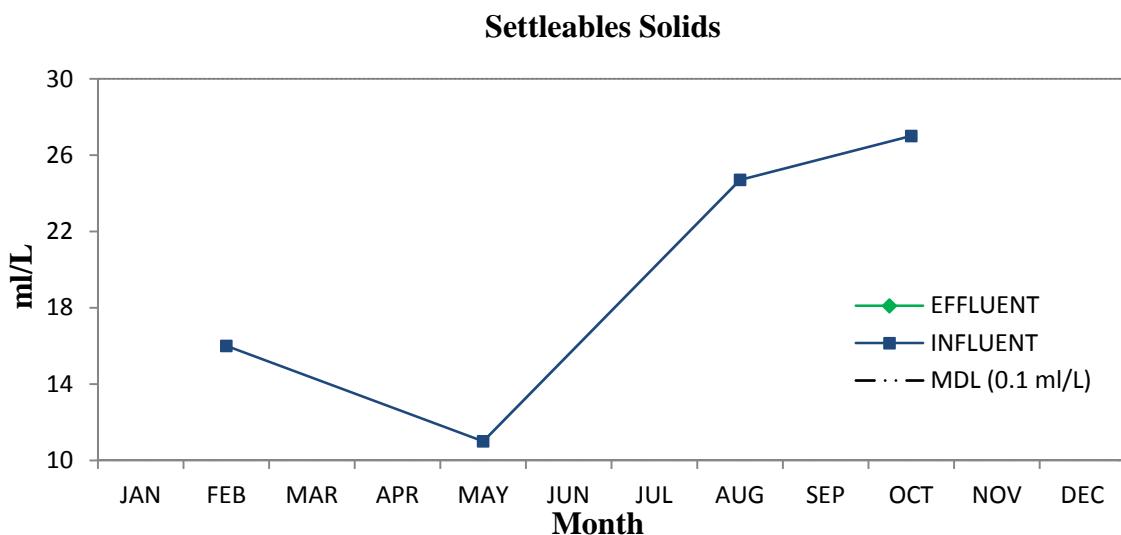
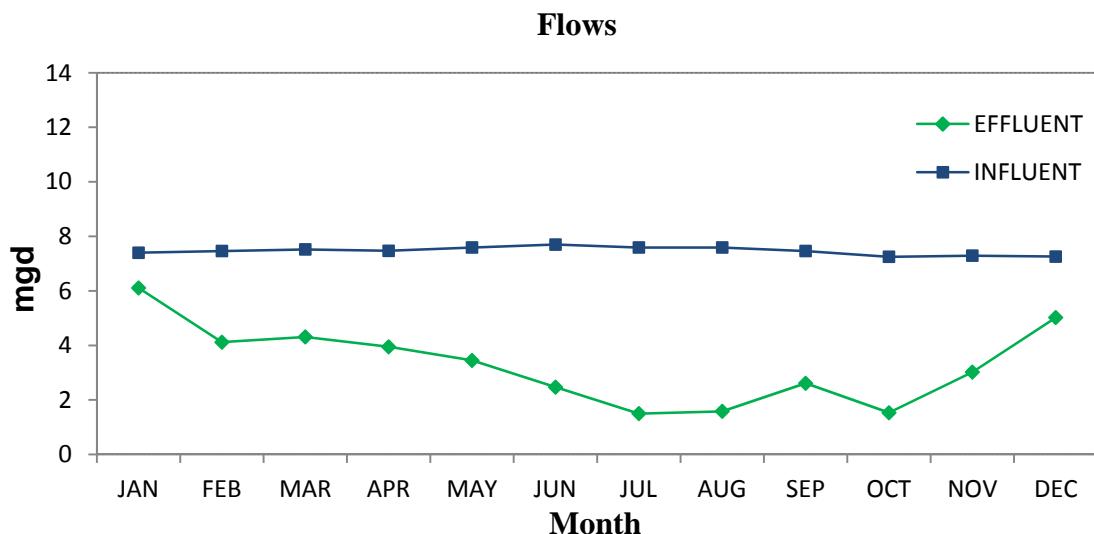
ND= not detected; Above are permit required CDD/CDF isomers.
 DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.

D. Influent and Effluent Graphs

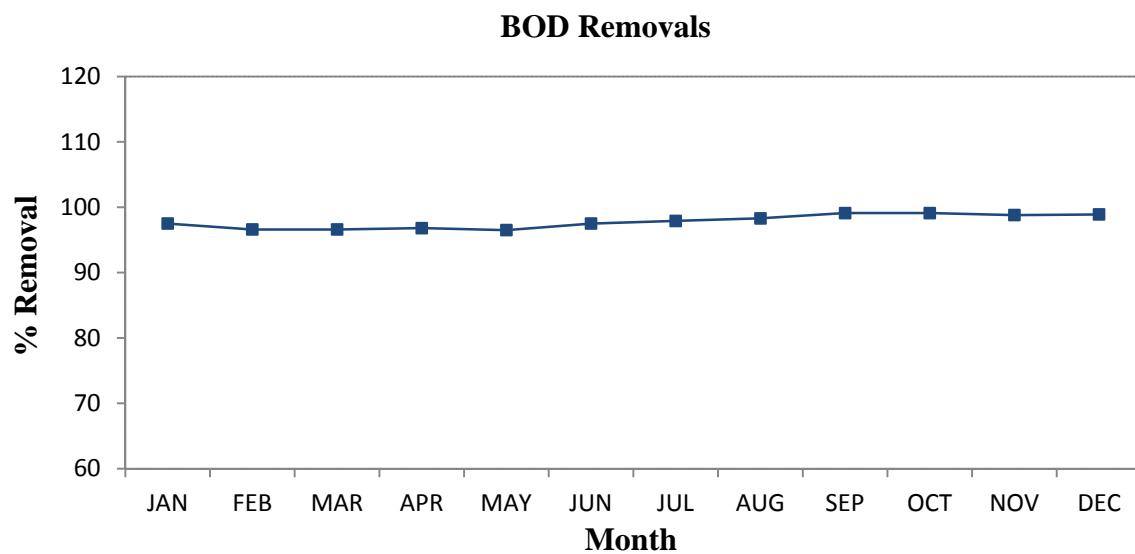
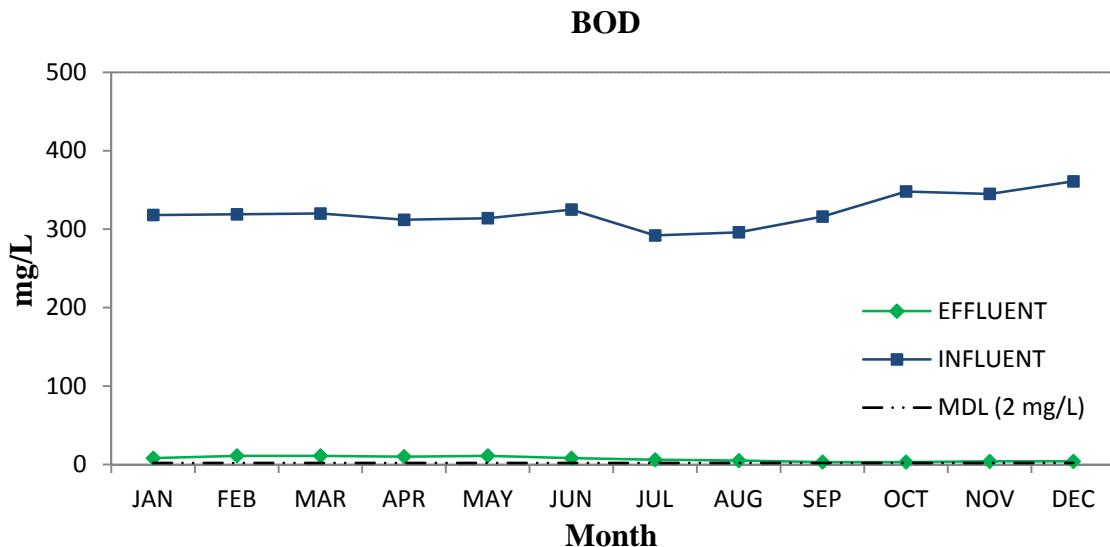
Graphs of monthly averages for permit parameters with measurable concentration averages.

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. Please note that many of the graphs are on expanded scales where the y-axes (concentration) do not start at zero, but instead are scaled to highlight the range of concentrations where variation takes place. These expanded scales make differences and some trends obvious that might normally not be noticed; however, they also may inadvertently place more weight on relatively minor changes or trends than deserved. Frequent reference to the scales and the actual differences in concentrations is therefore necessary.

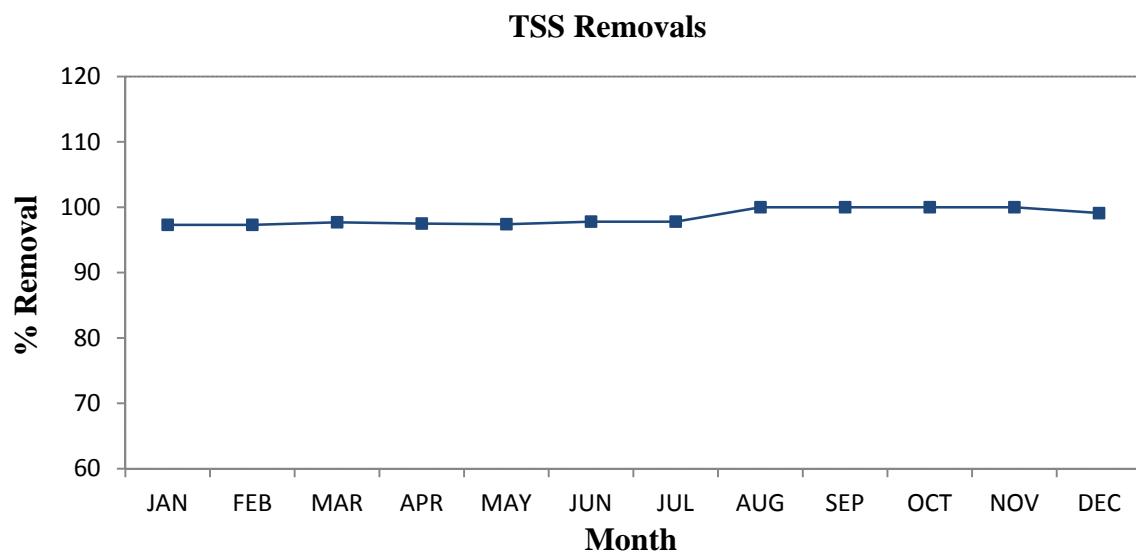
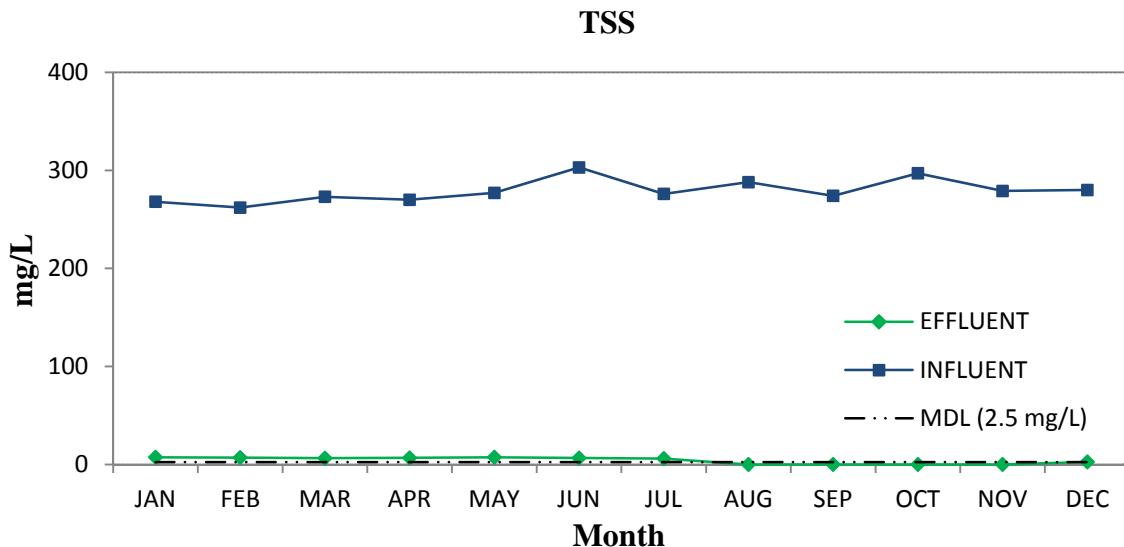
2016 South Bay Water Reclamation Plant Monthly Averages



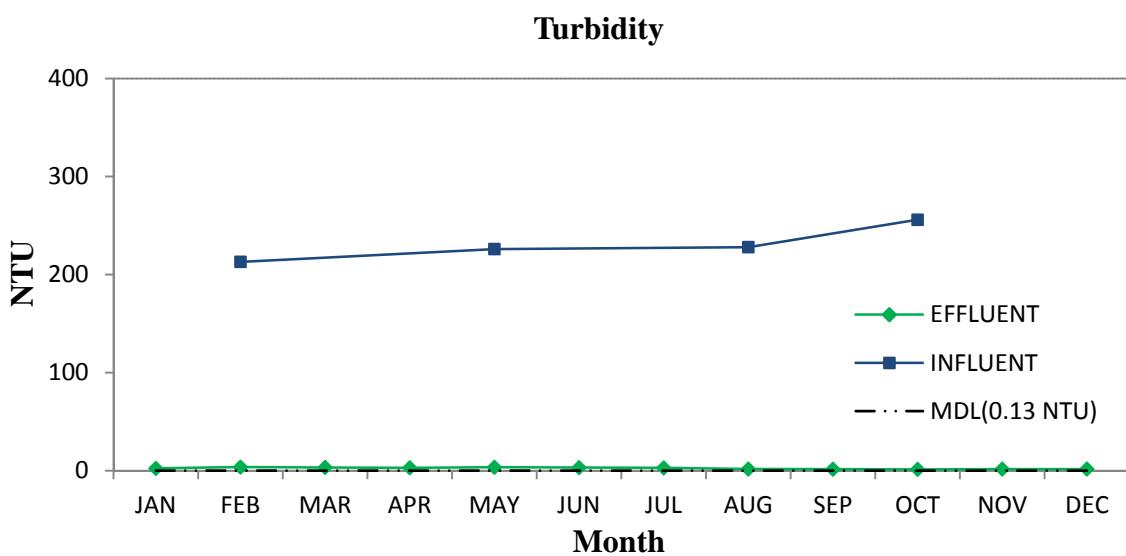
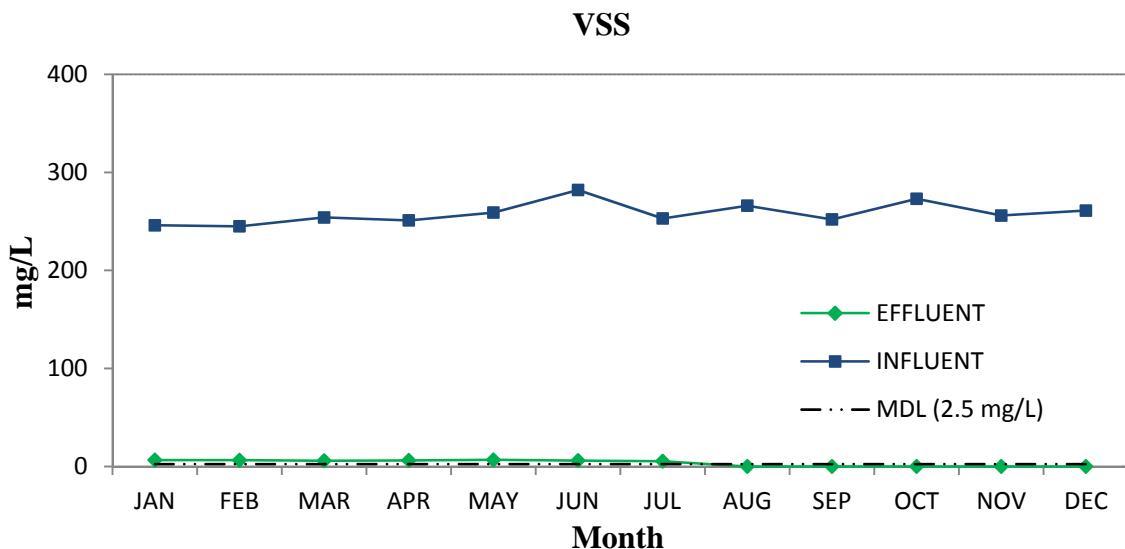
**2016 South Bay Water Reclamation Plant
Monthly Averages**



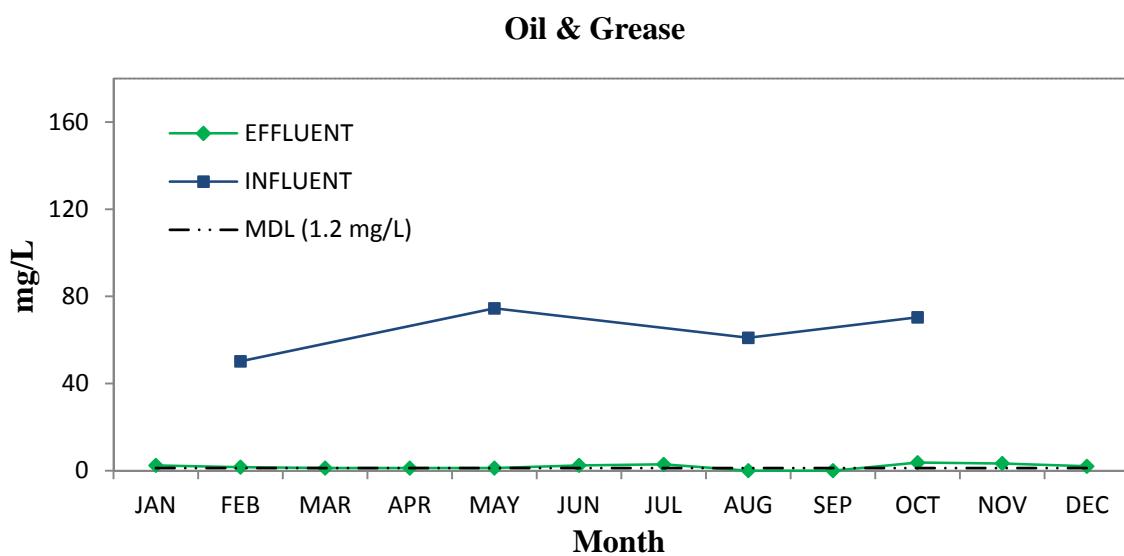
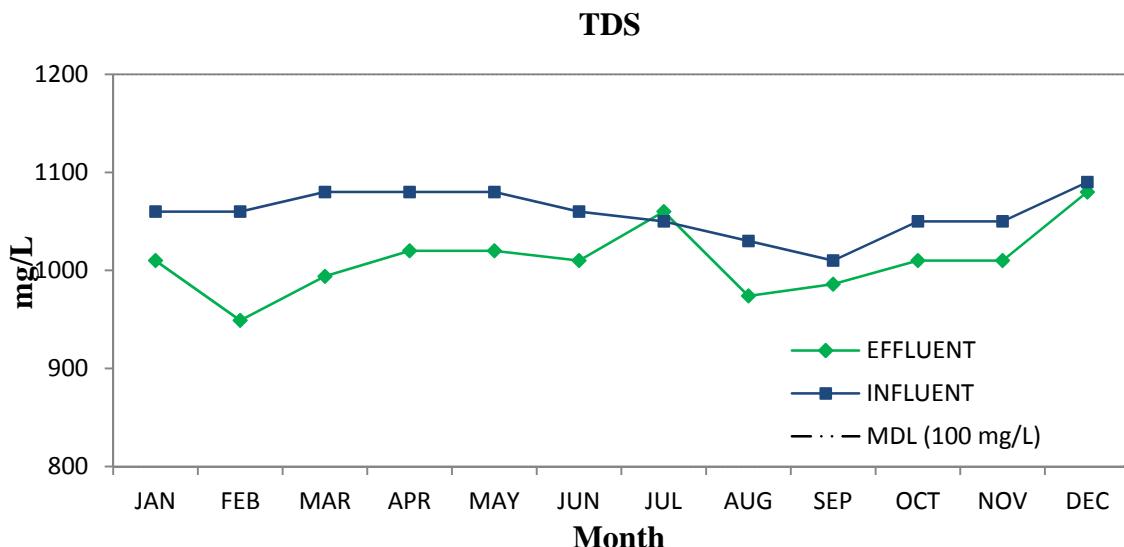
**2016 South Bay Water Reclamation Plant
Monthly Averages**



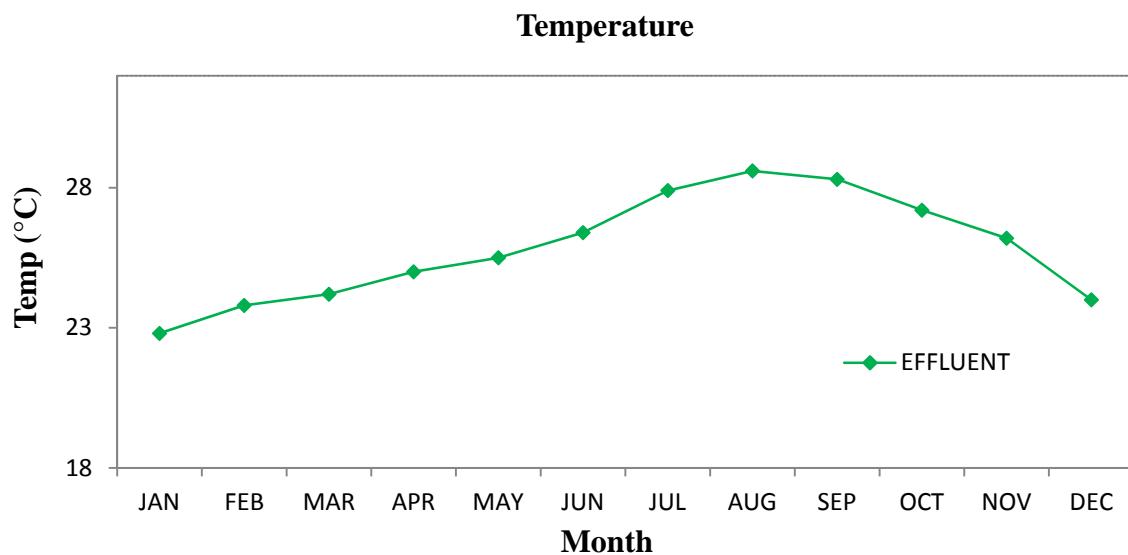
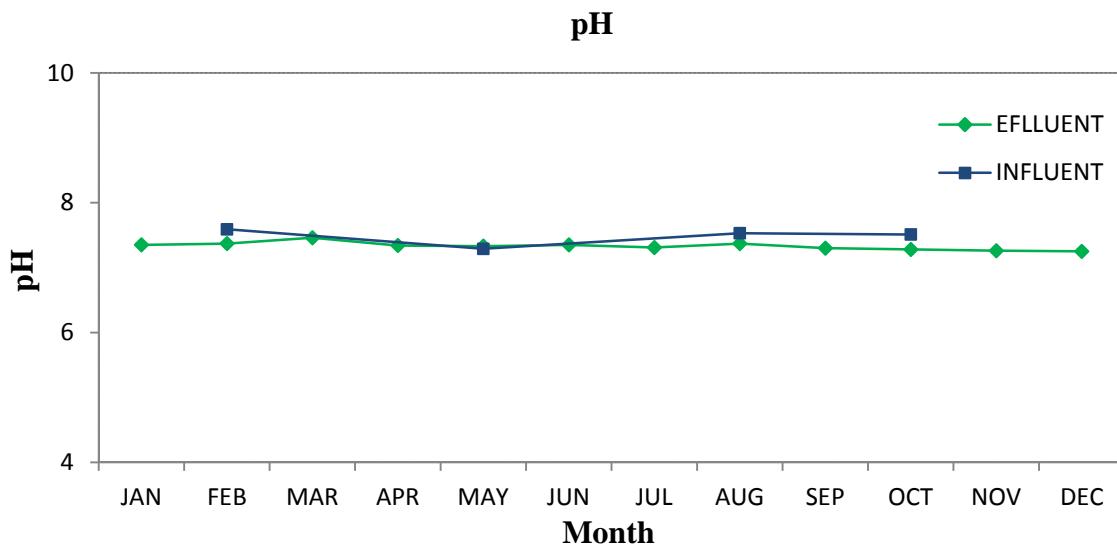
**2016 South Bay Water Reclamation Plant
Monthly Averages**



2016 South Bay Water Reclamation Plant Monthly Averages

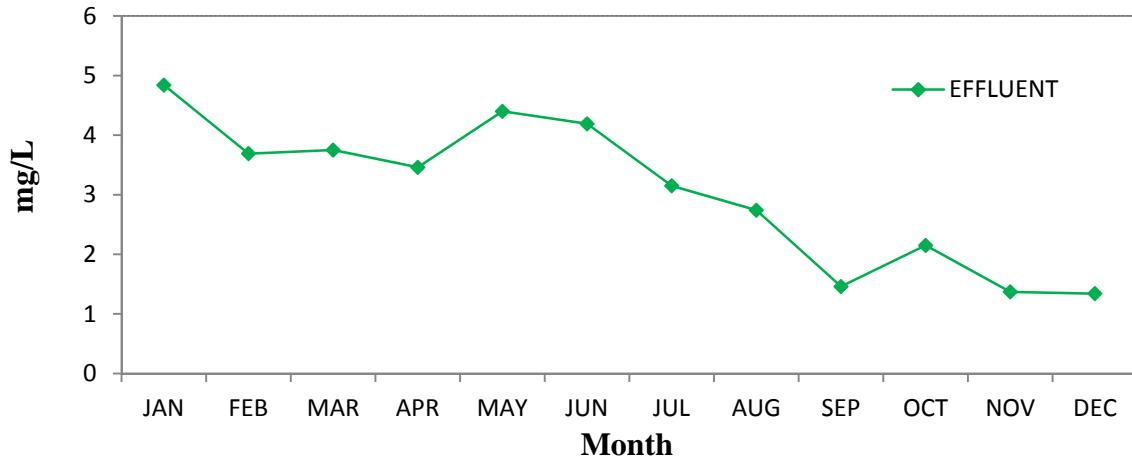


**2016 South Bay Water Reclamation Plant
Monthly Averages**

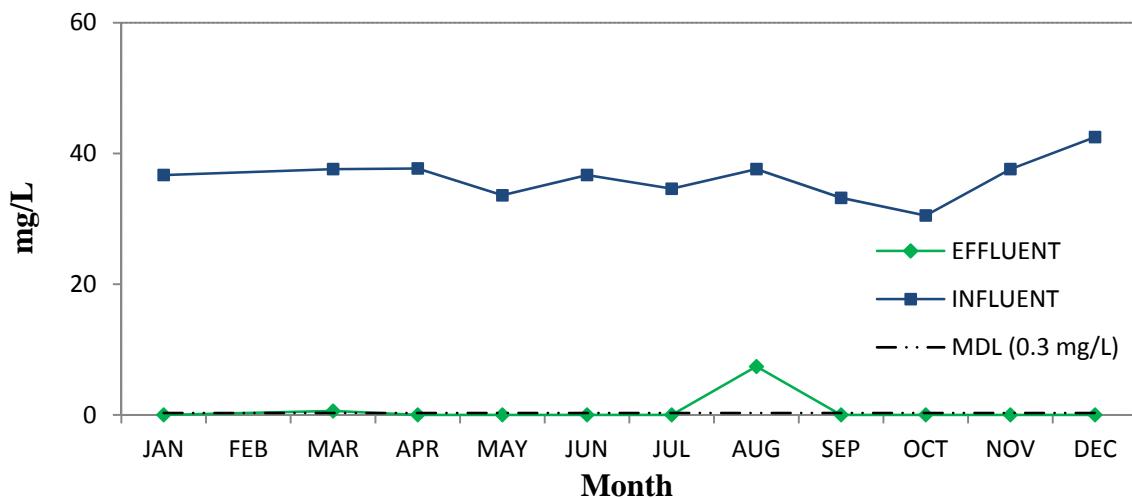


2016 South Bay Water Reclamation Plant Monthly Averages

Dissolved Oxygen

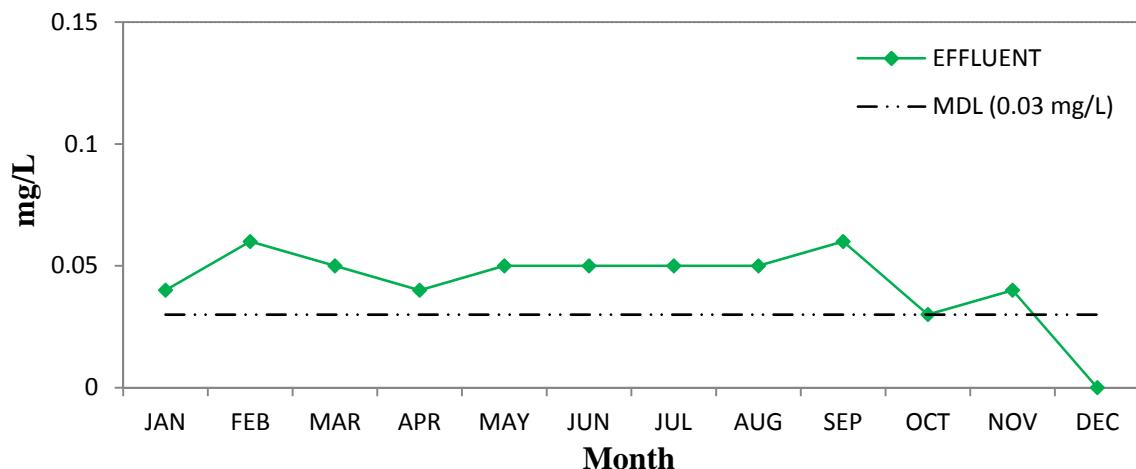


Ammonia-N

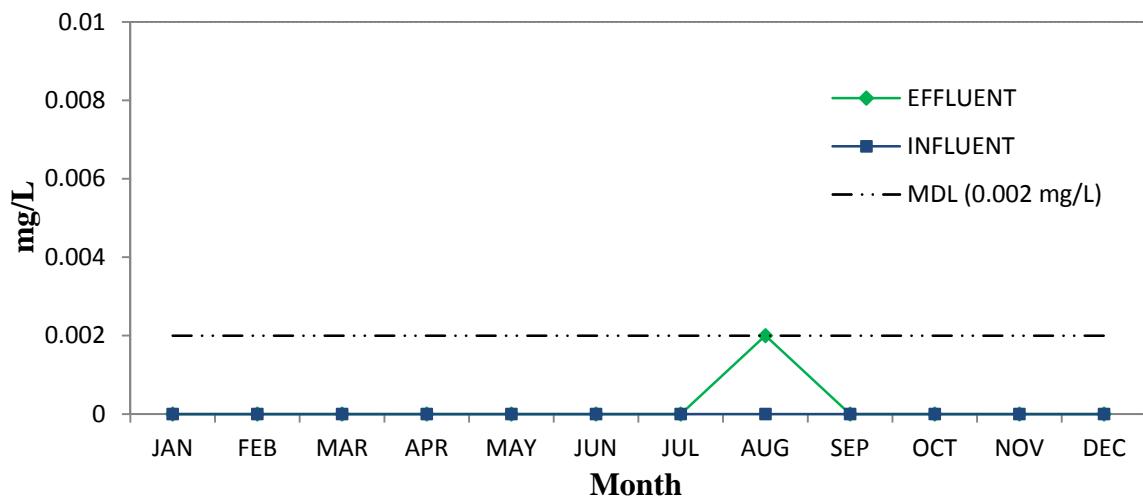


2016 South Bay Water Reclamation Plant Monthly Averages

Residual Chlorine

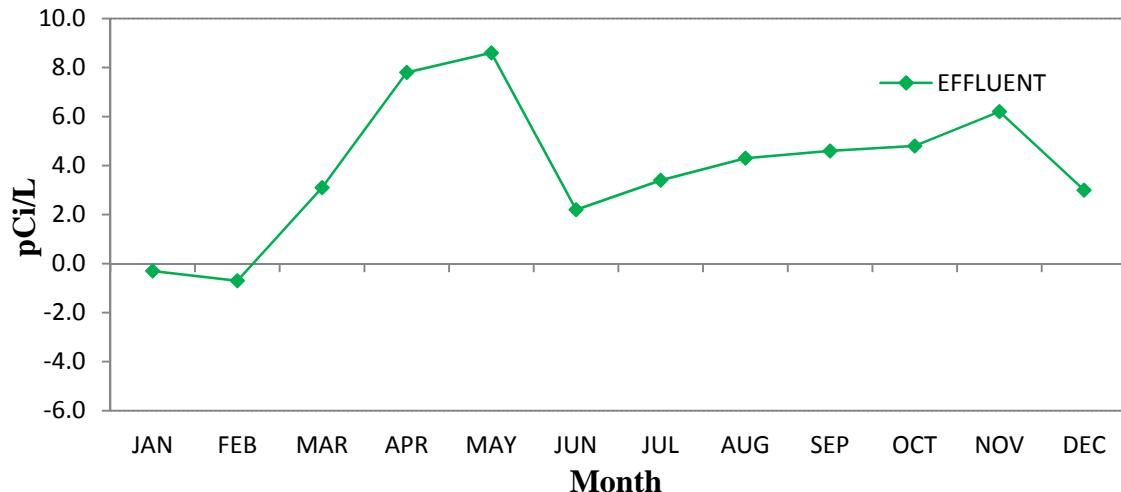


Total Cyanides

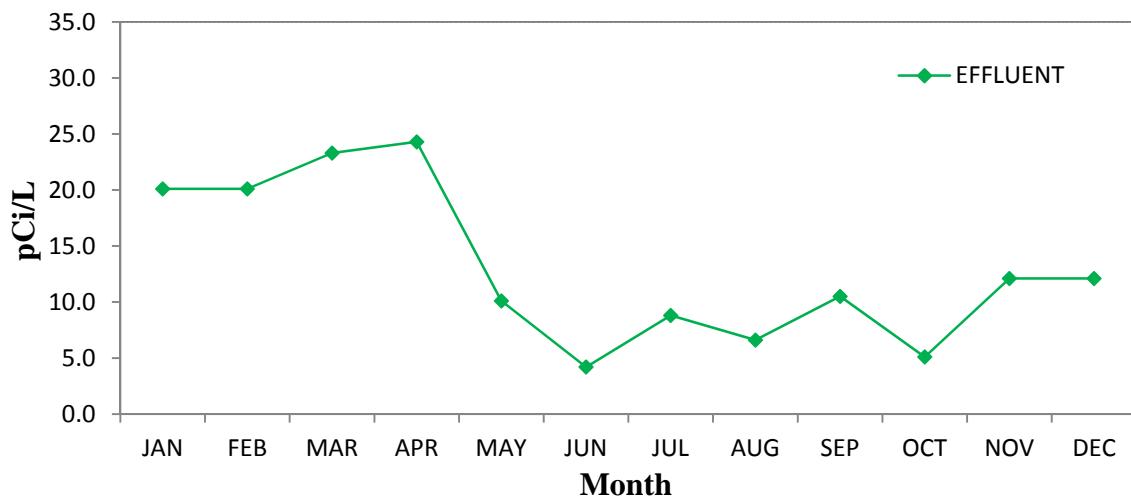


**2016 South Bay Water Reclamation Plant
Monthly Averages**

Alpha Radiation

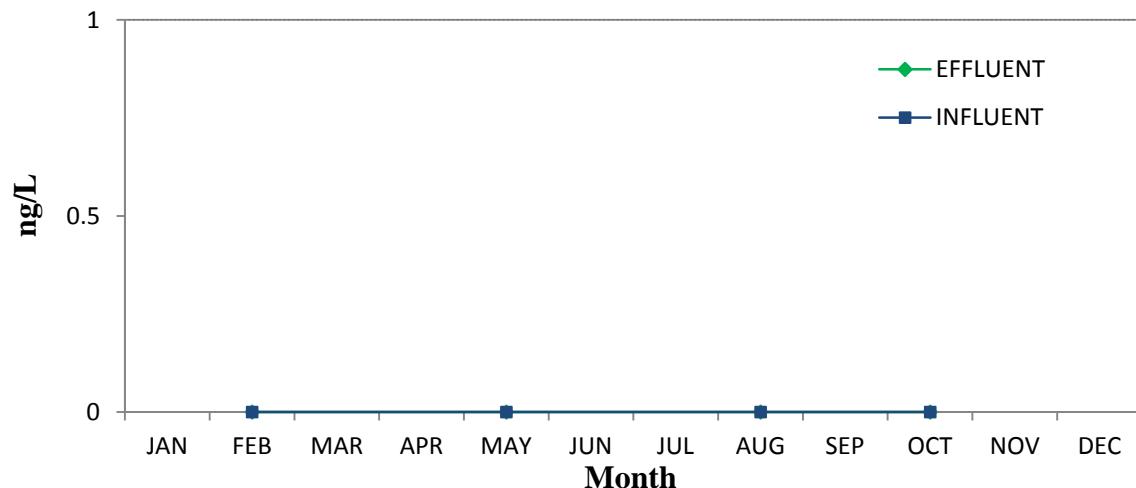


Beta Radiation

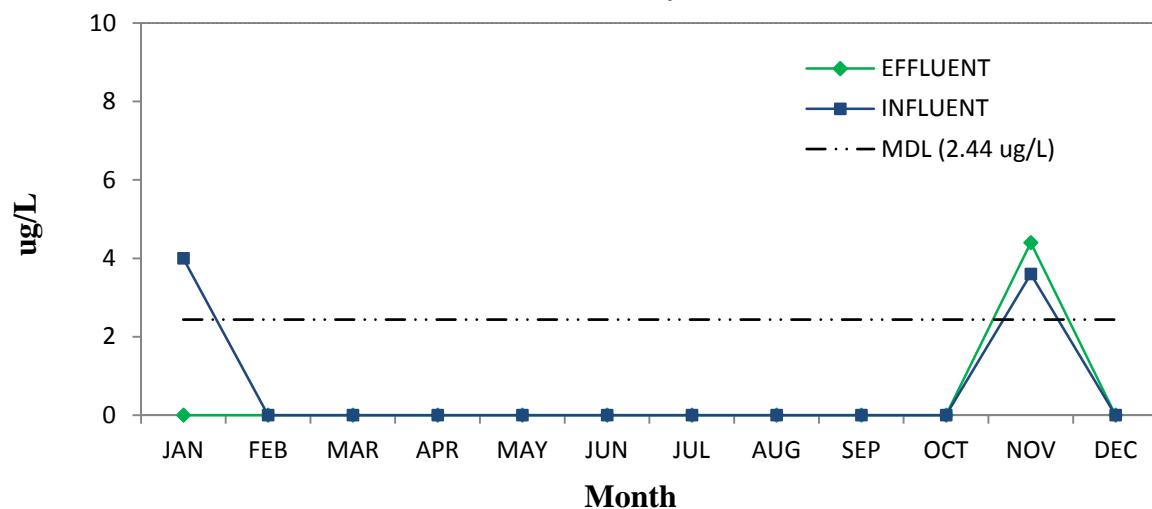


**2016 South Bay Water Reclamation Plant
Monthly Averages**

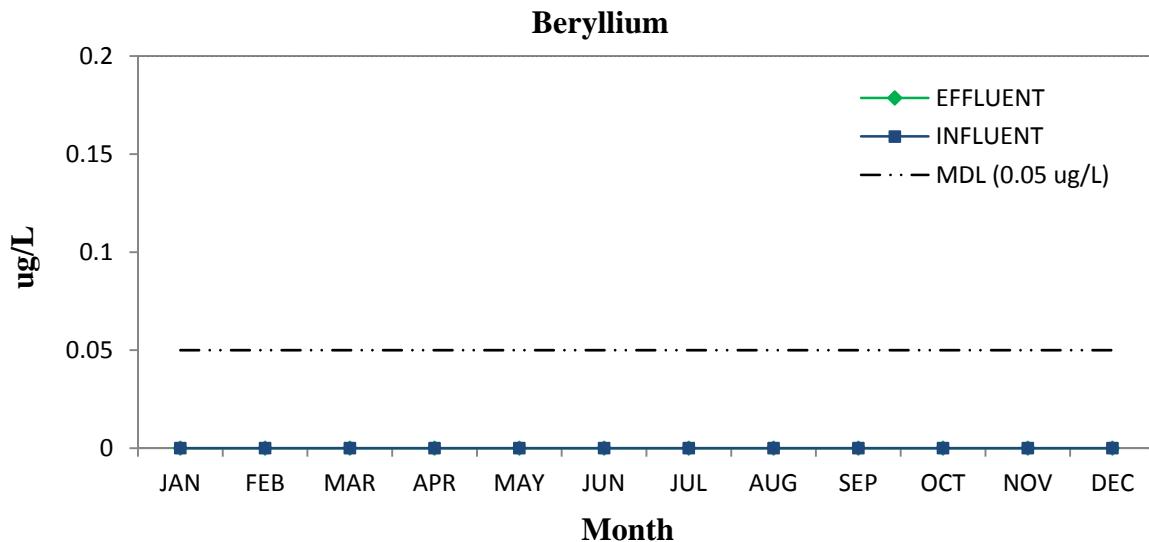
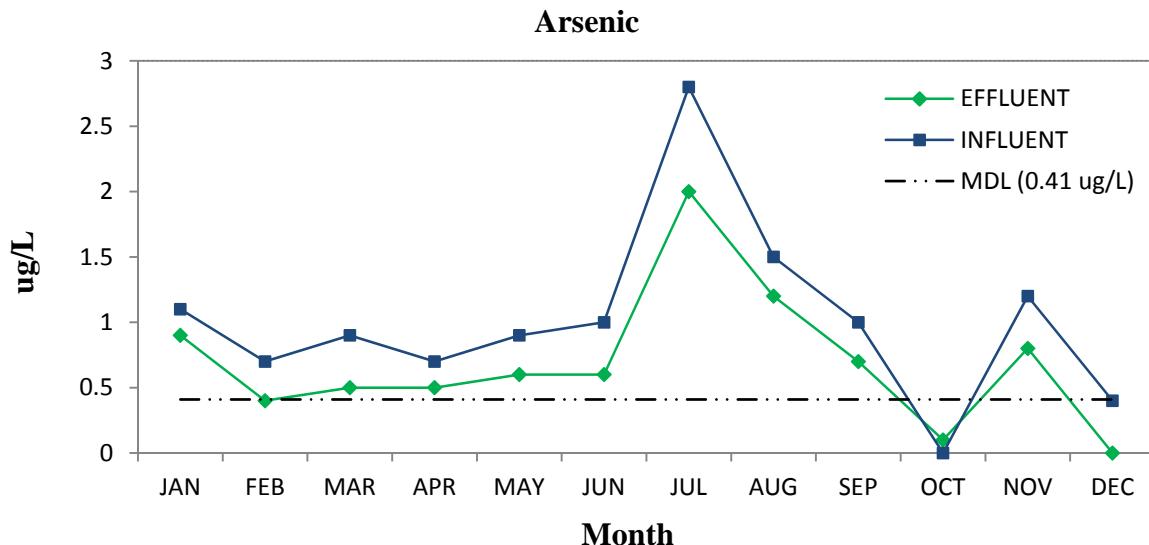
Total Chlorinated Hydrocarbons



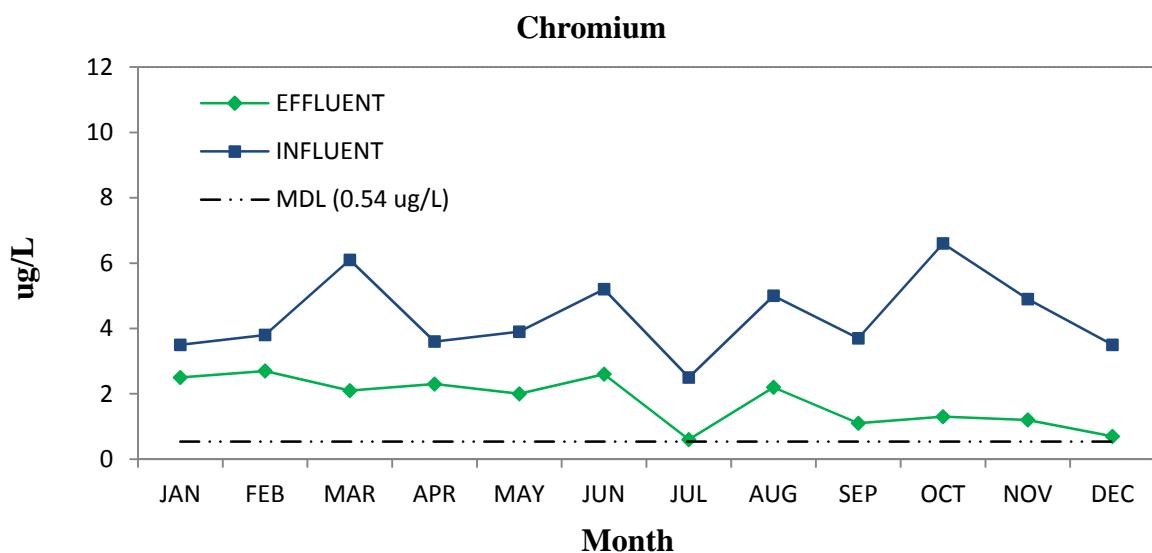
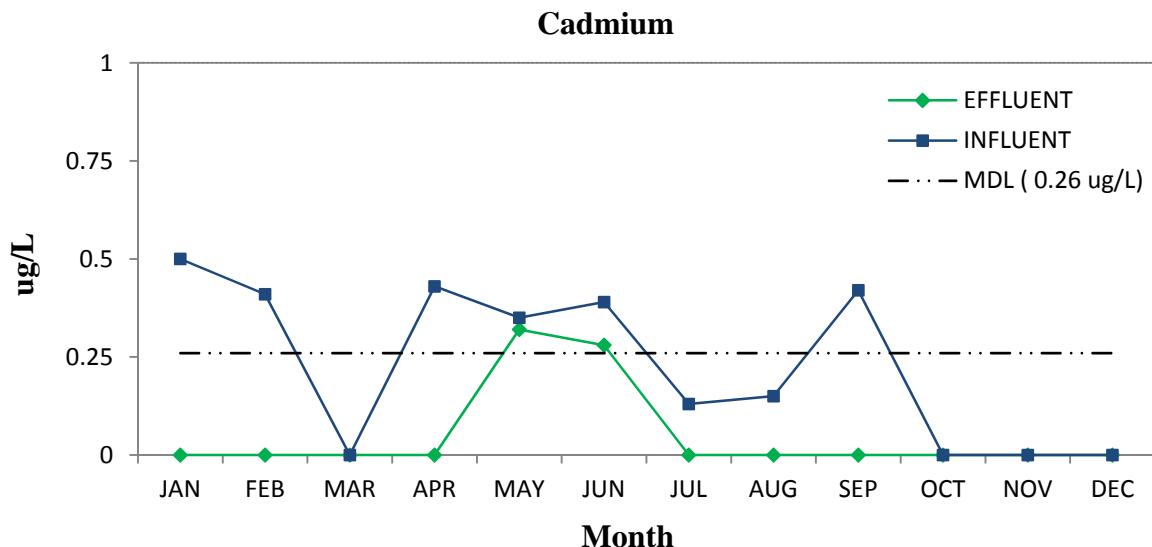
Antimony



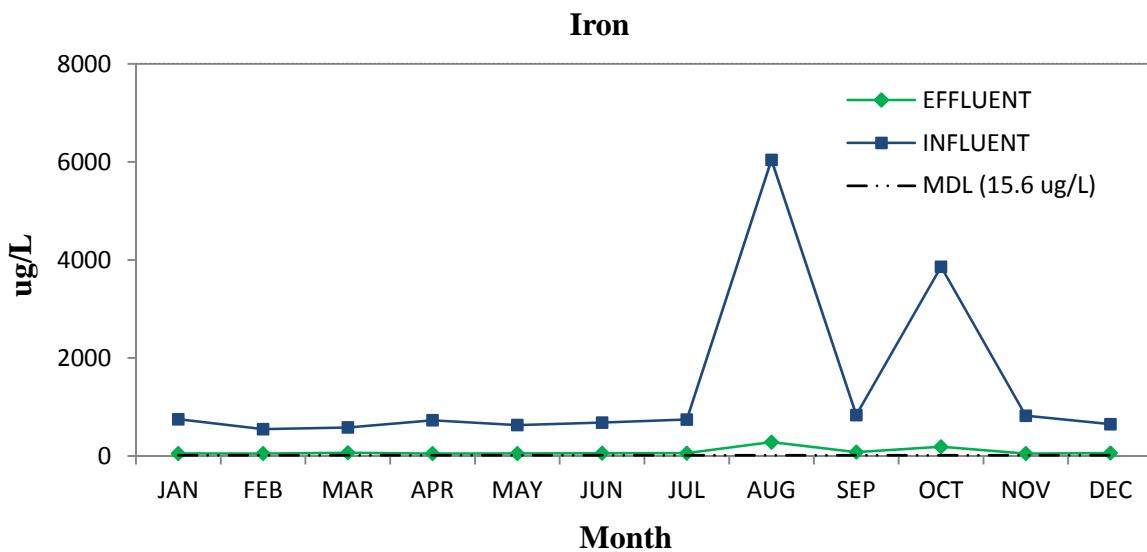
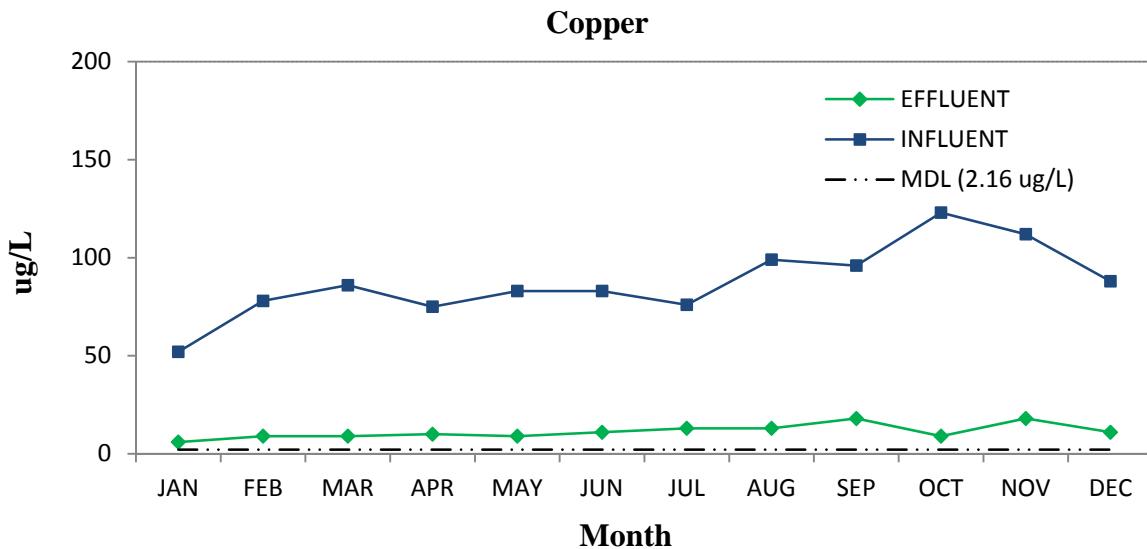
2016 South Bay Water Reclamation Plant Monthly Averages



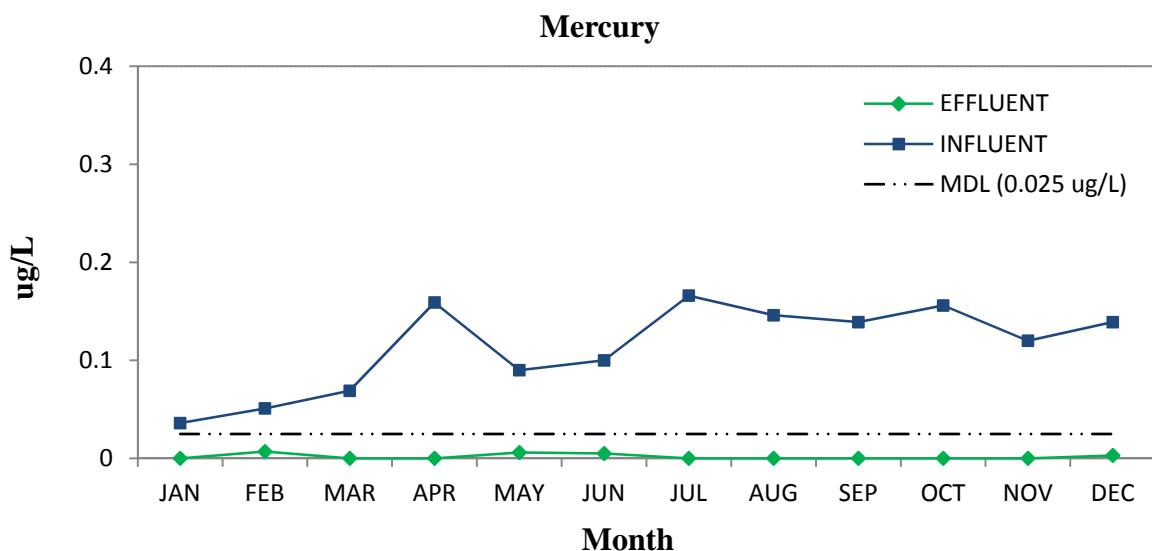
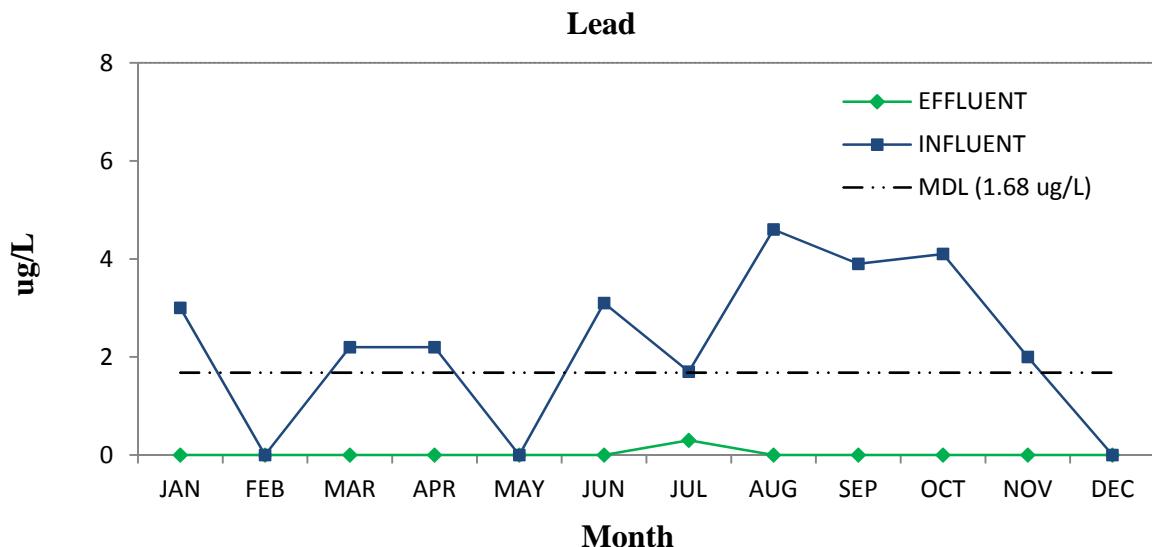
**2016 South Bay Water Reclamation Plant
Monthly Averages**



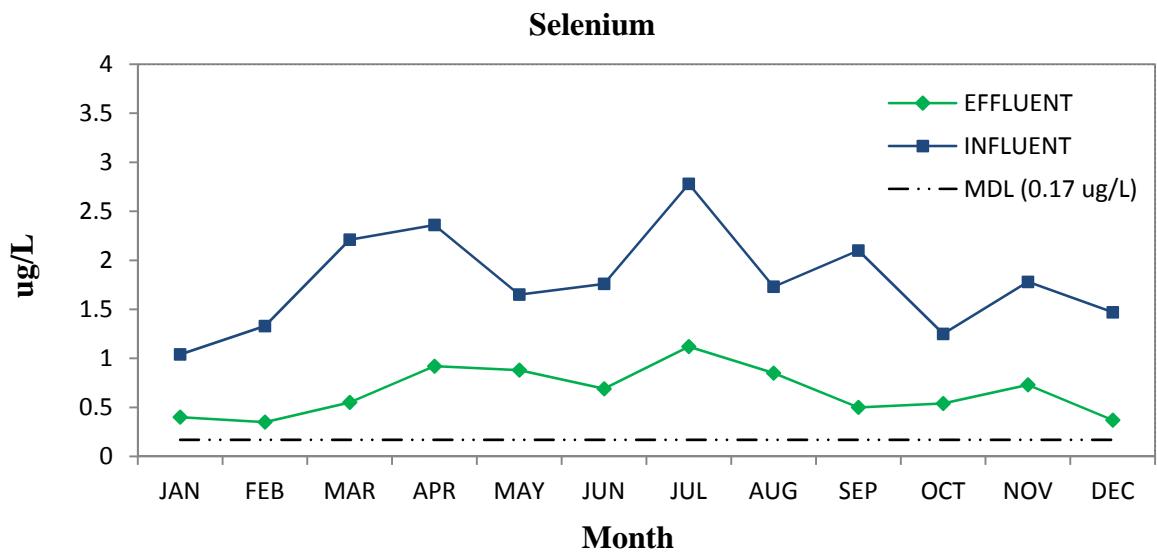
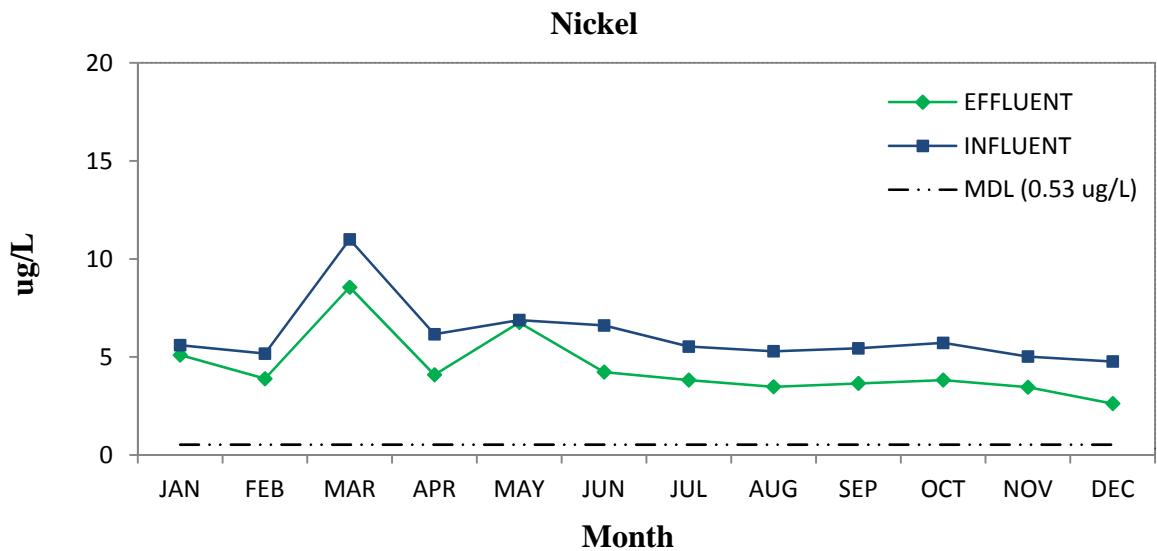
2016 South Bay Water Reclamation Plant Monthly Averages



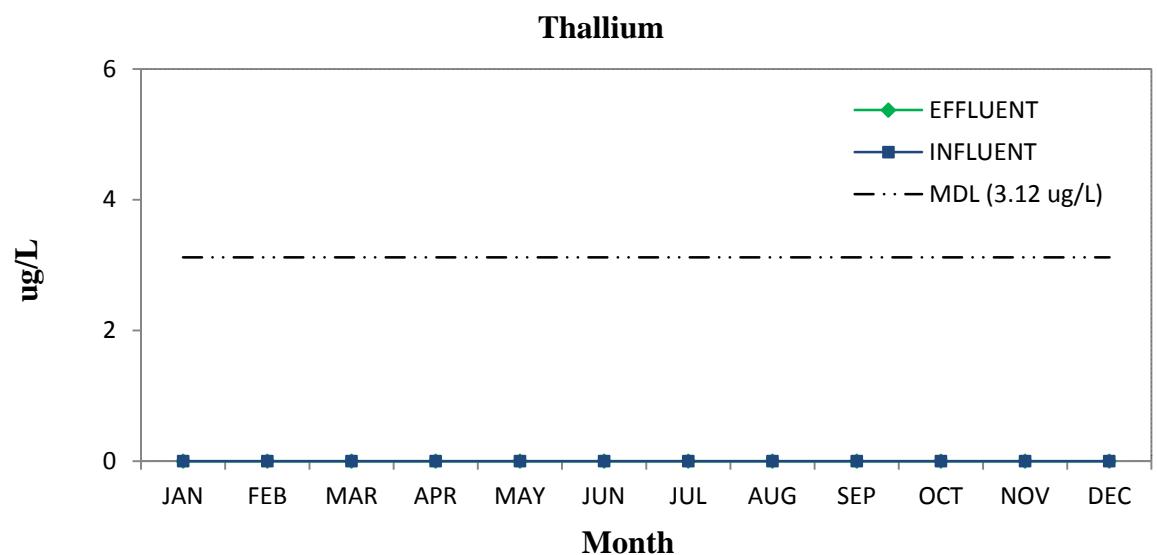
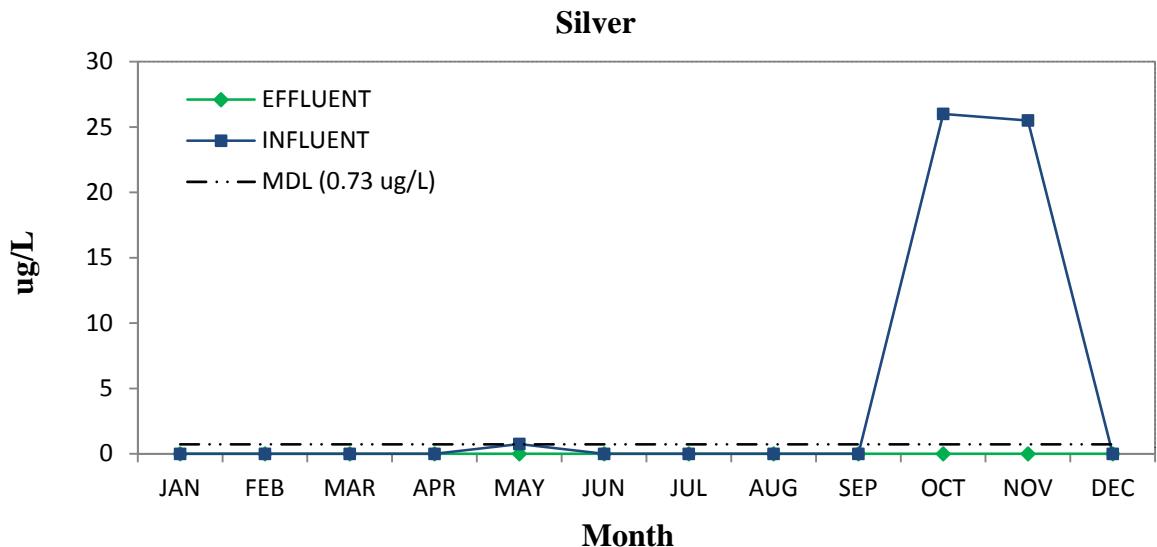
2016 South Bay Water Reclamation Plant Monthly Averages



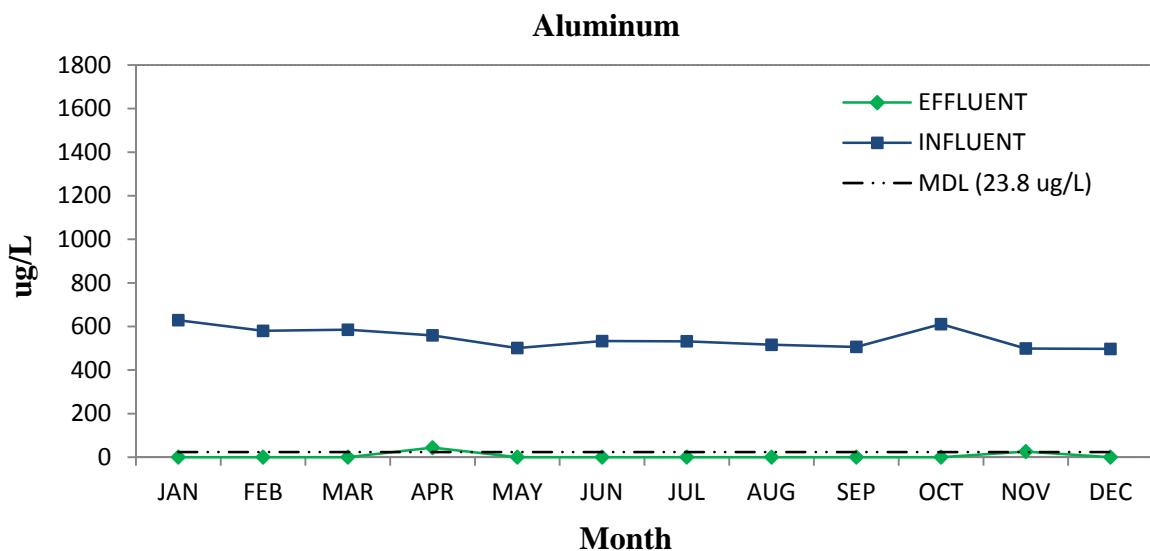
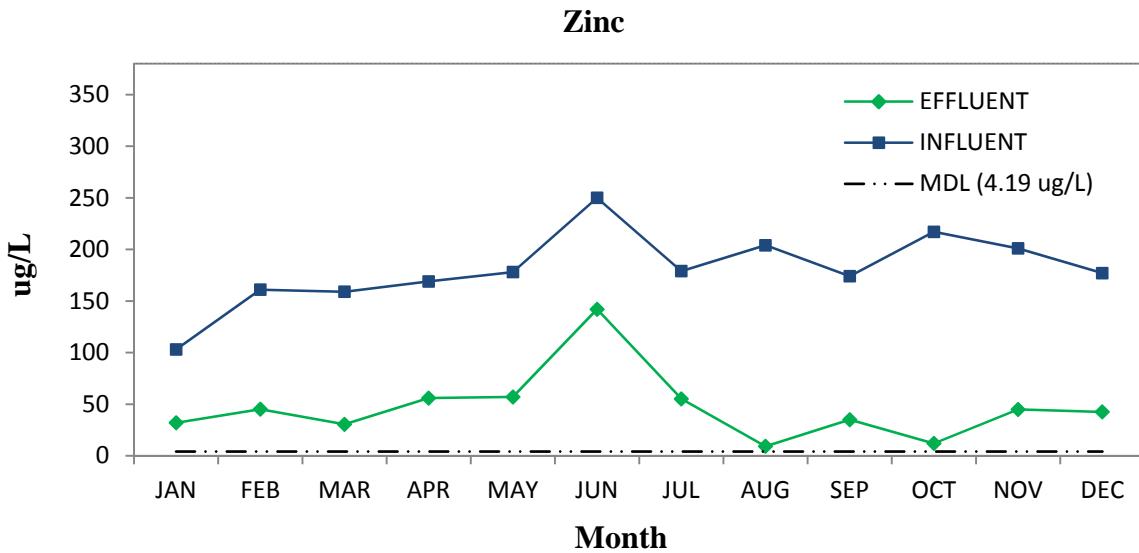
2016 South Bay Water Reclamation Plant Monthly Averages



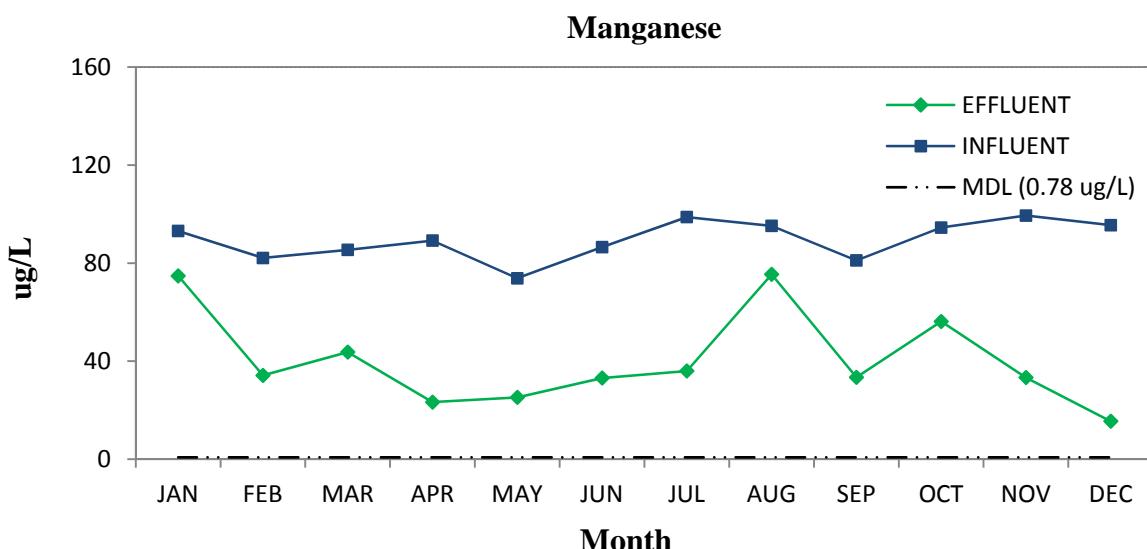
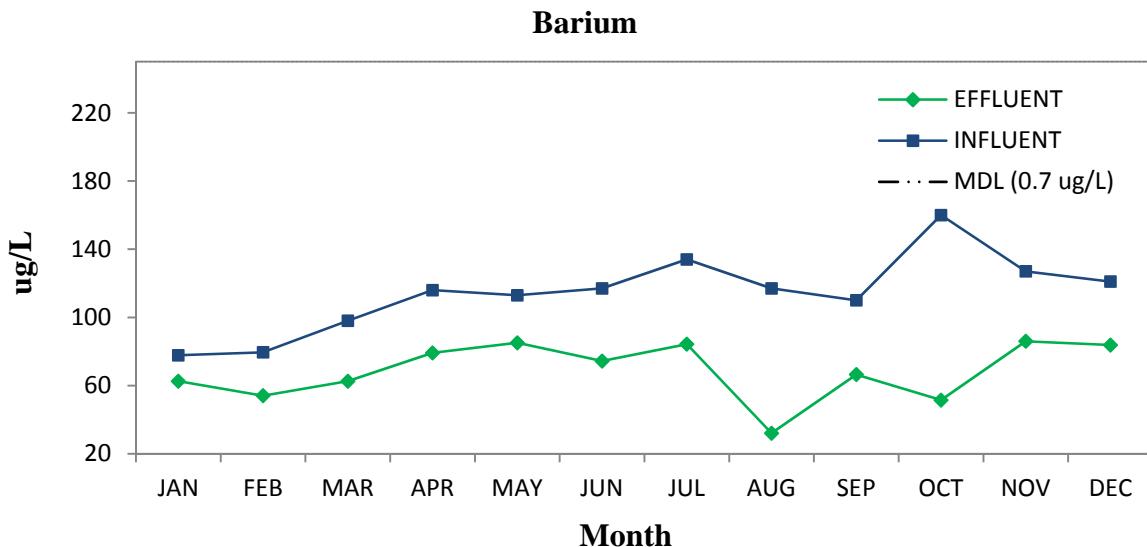
**2016 South Bay Water Reclamation Plant
Monthly Averages**



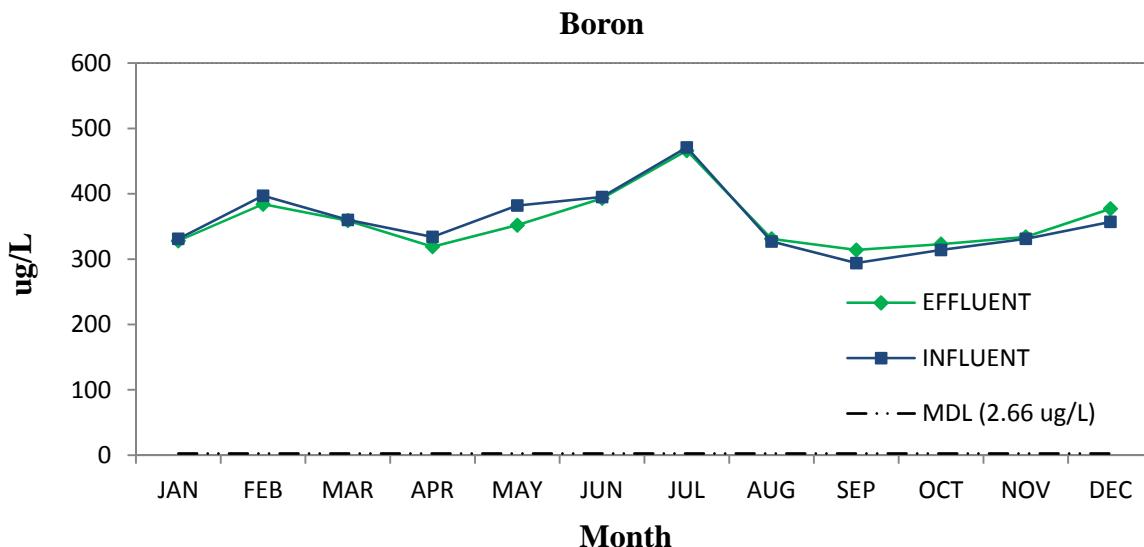
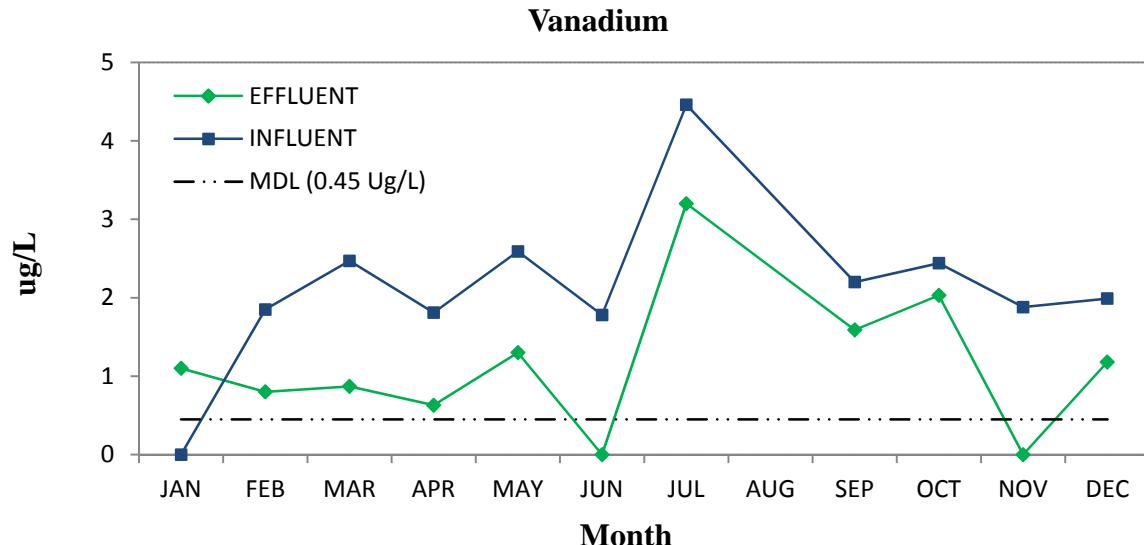
2016 South Bay Water Reclamation Plant Monthly Averages



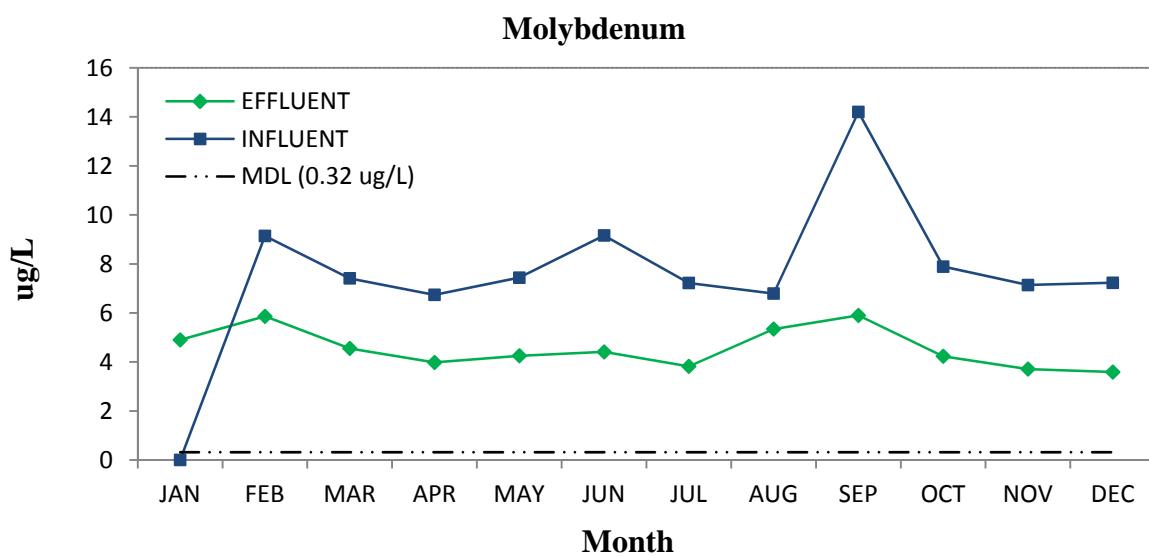
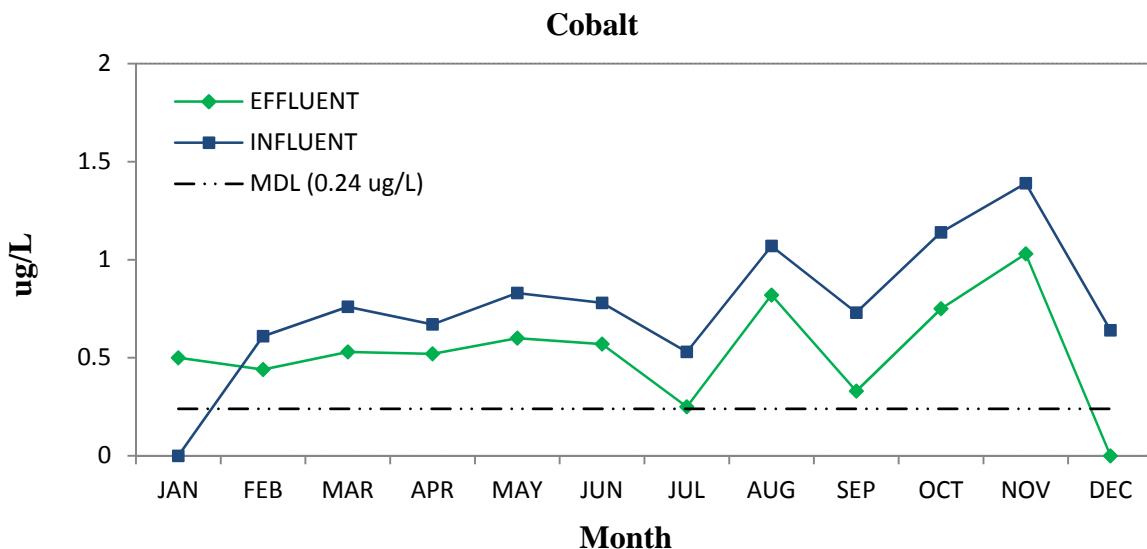
2016 South Bay Water Reclamation Plant Monthly Averages



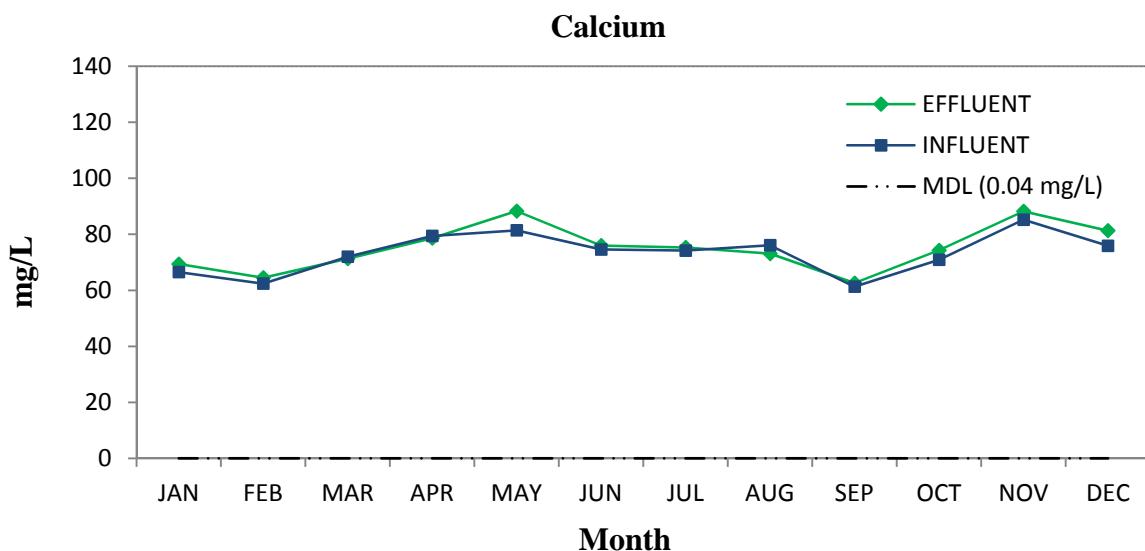
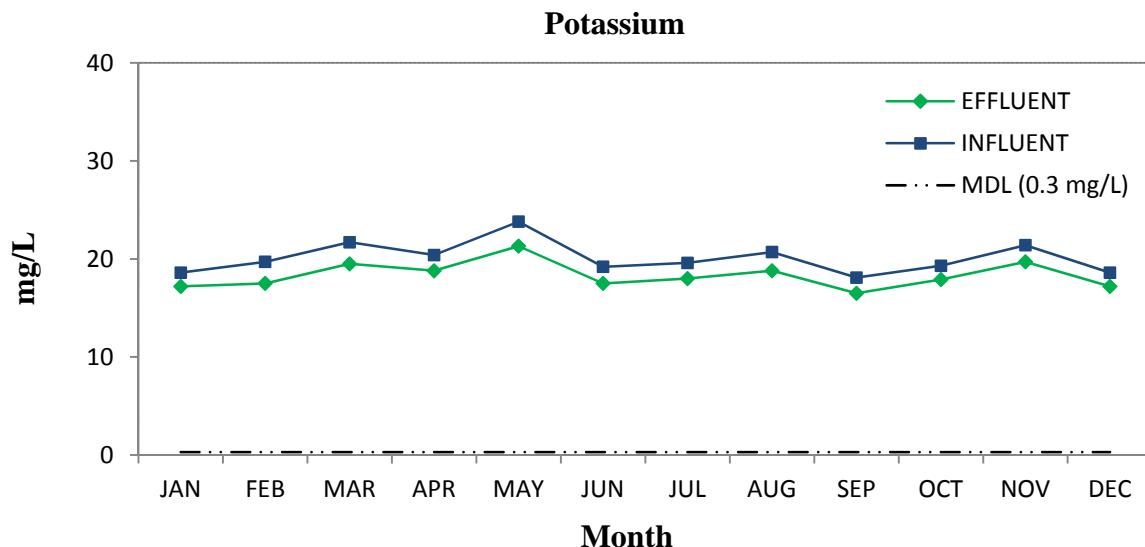
2016 South Bay Water Reclamation Plant Monthly Averages



2016 South Bay Water Reclamation Plant Monthly Averages

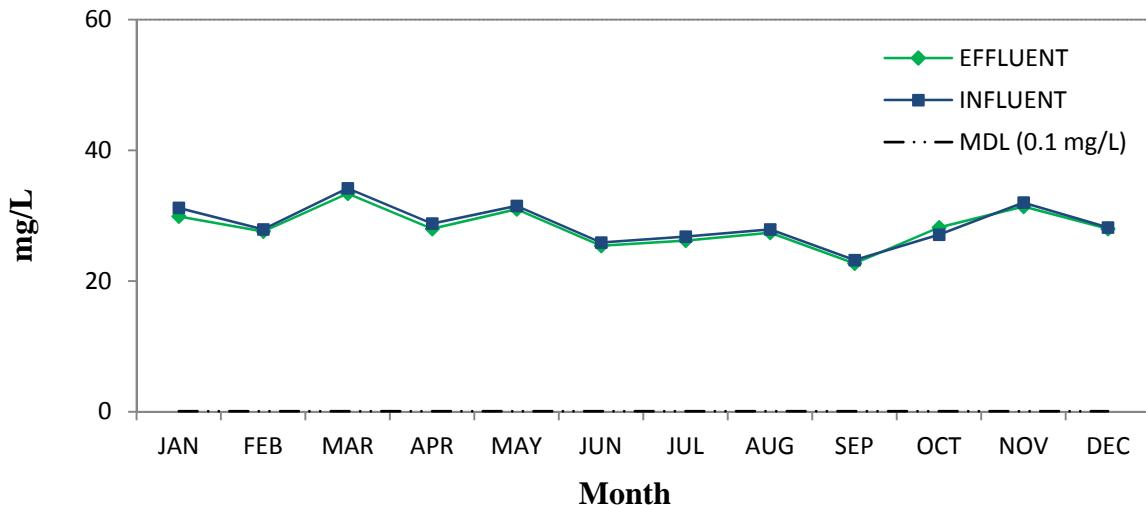


2016 South Bay Water Reclamation Plant
Monthly Averages

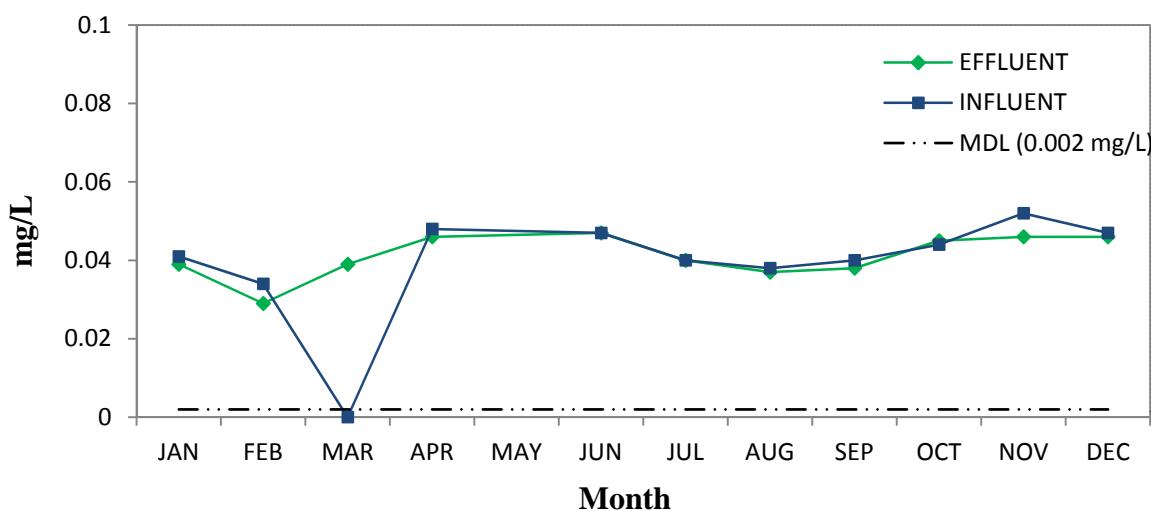


**2016 South Bay Water Reclamation Plant
Monthly Averages**

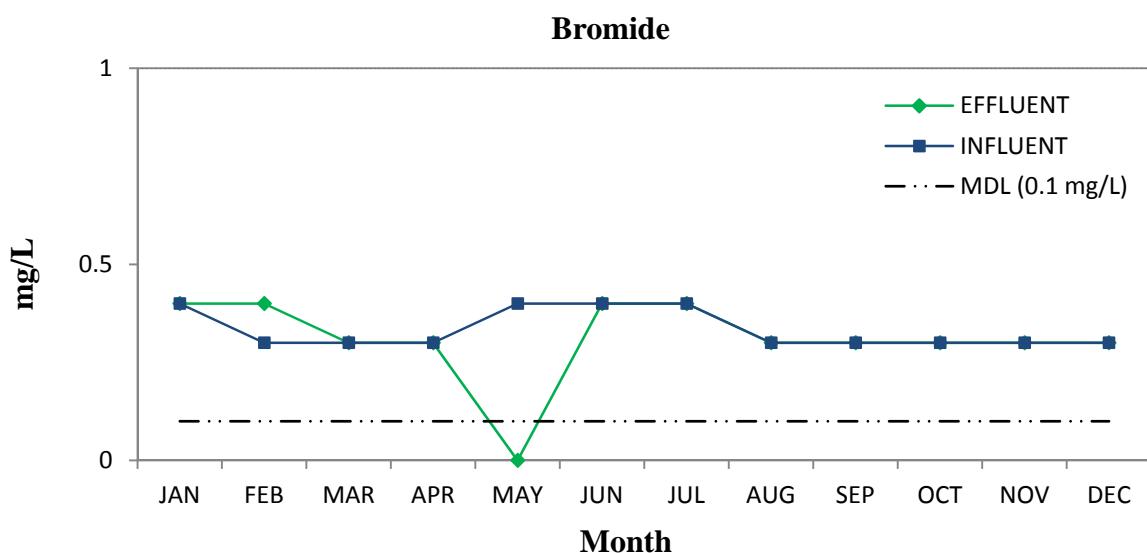
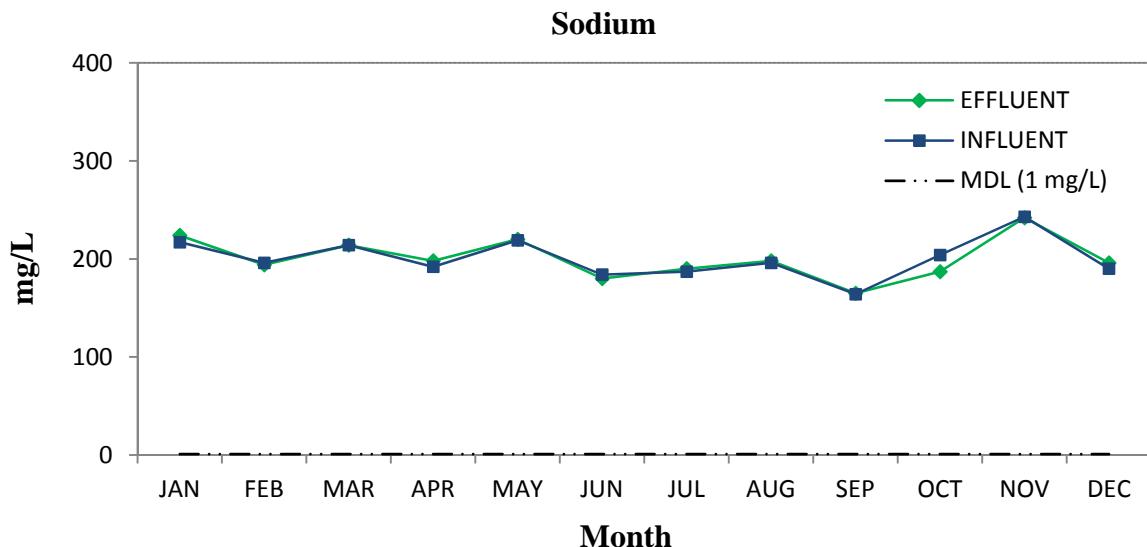
Magnesium



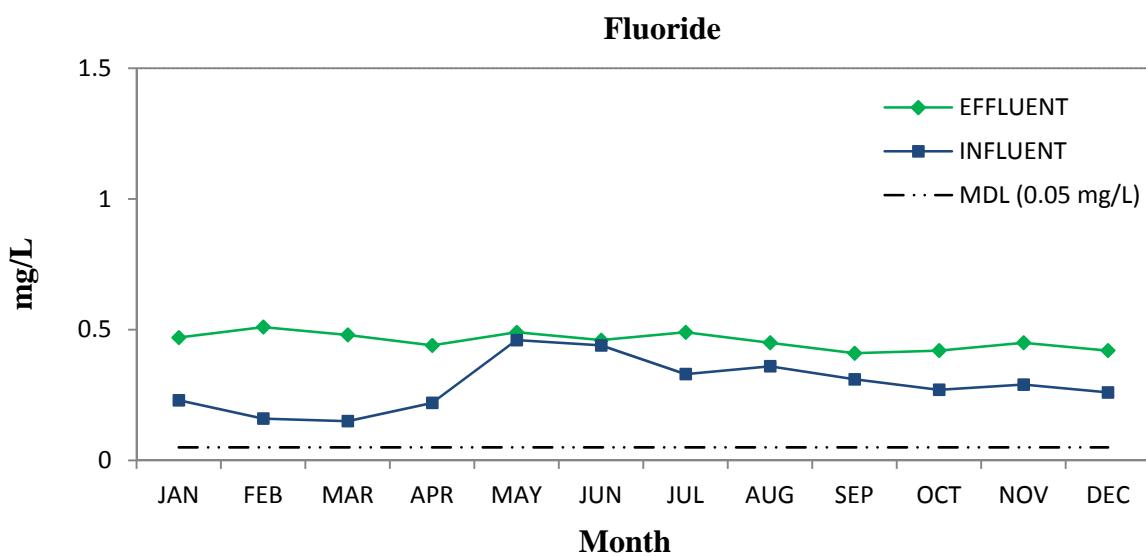
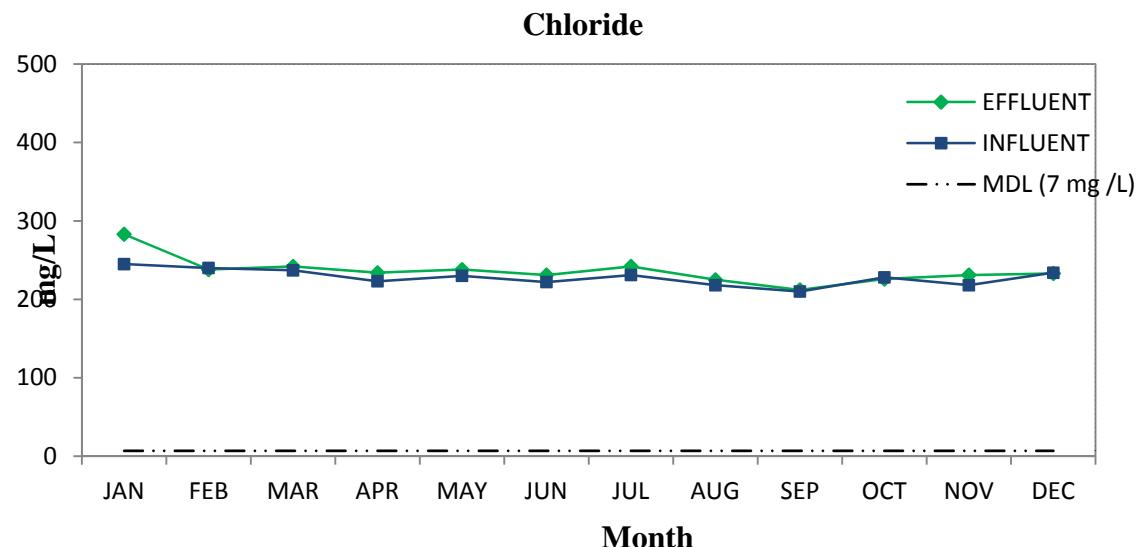
Lithium



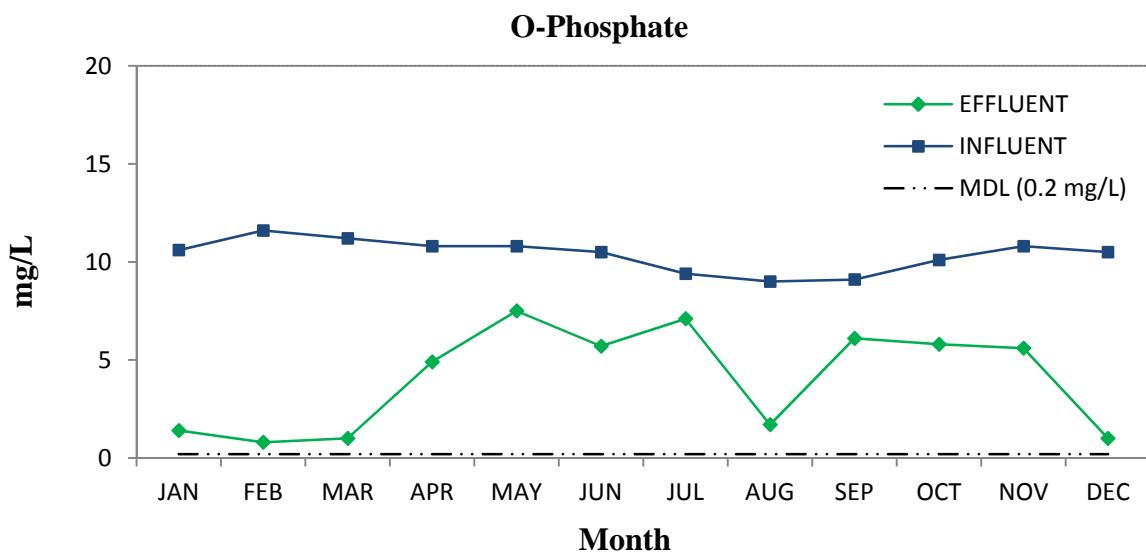
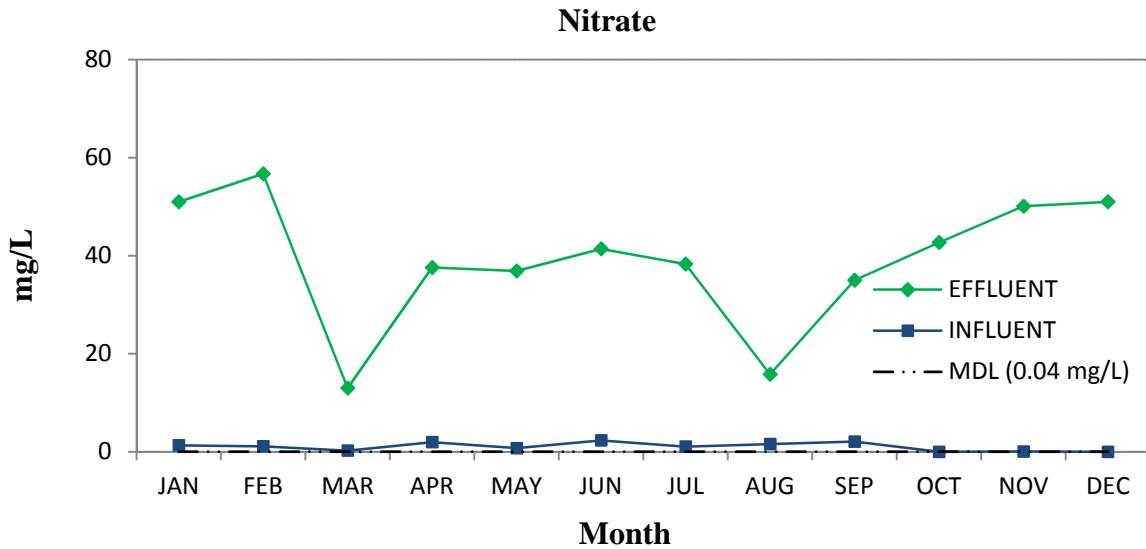
**2016 South Bay Water Reclamation Plant
Monthly Averages**



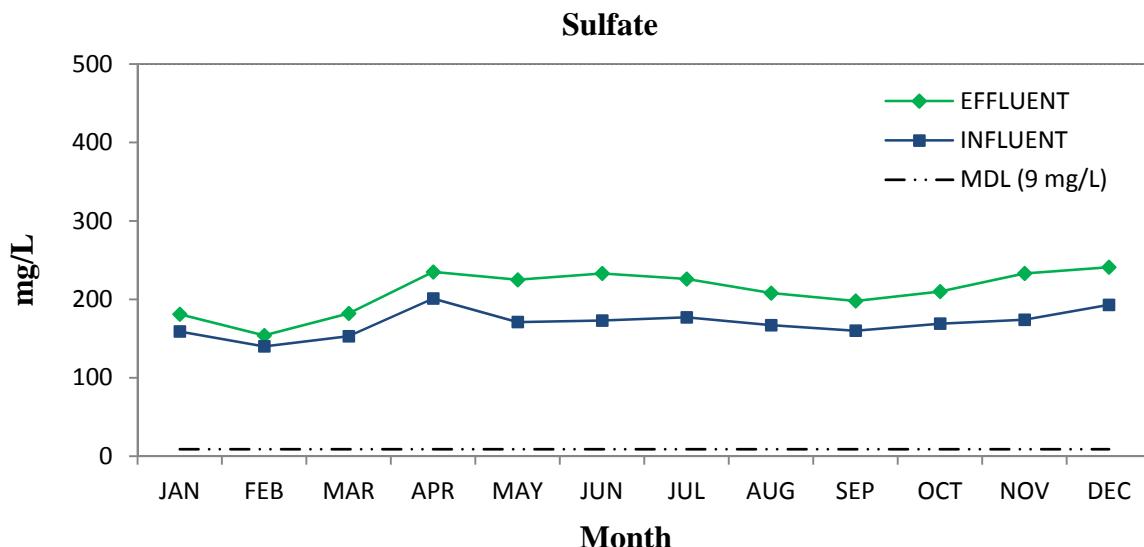
2016 South Bay Water Reclamation Plant
Monthly Averages



2016 South Bay Water Reclamation Plant Monthly Averages



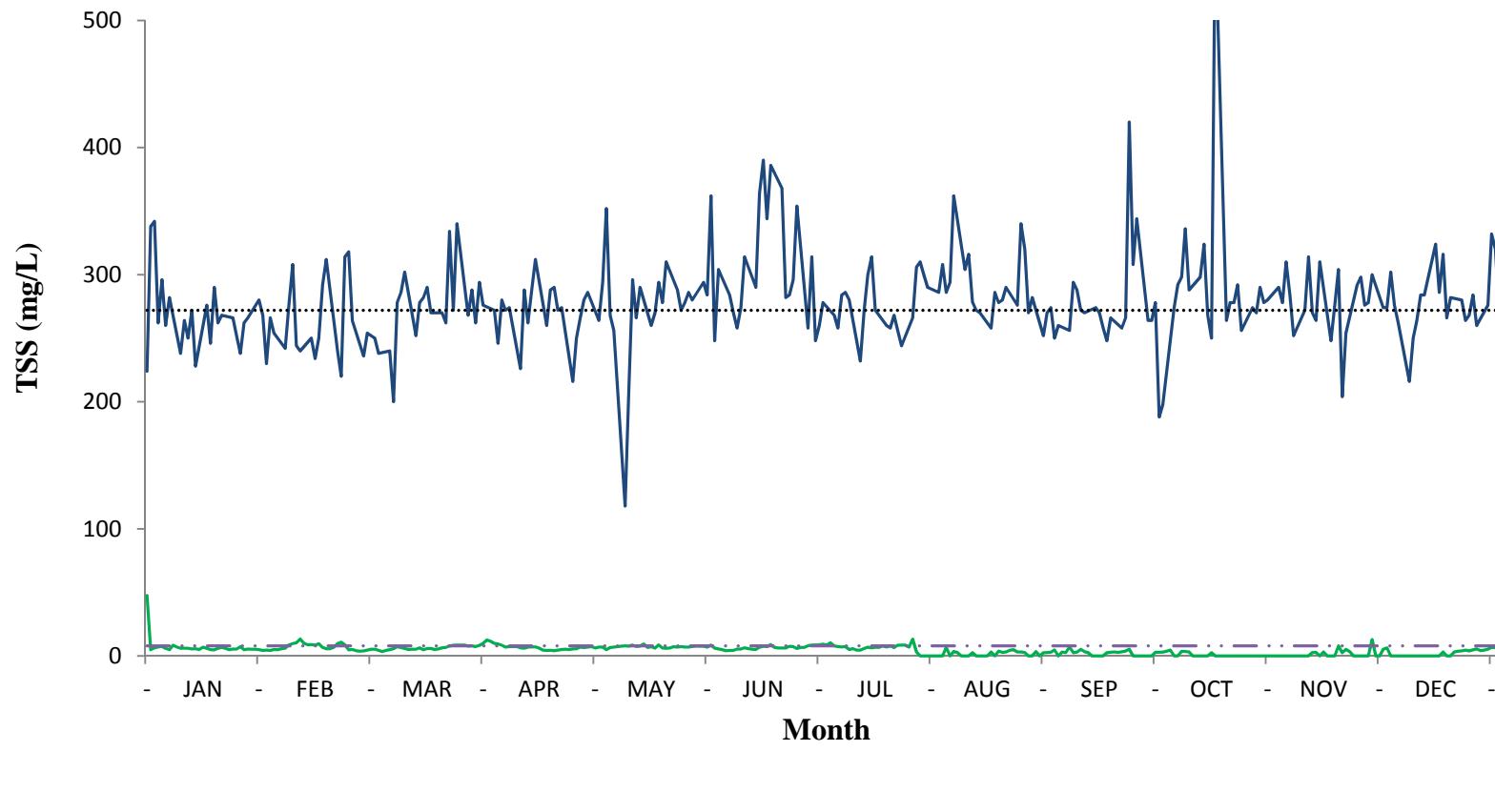
2016 South Bay Water Reclamation Plant
Monthly Averages



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 2016 Total Suspended Solids

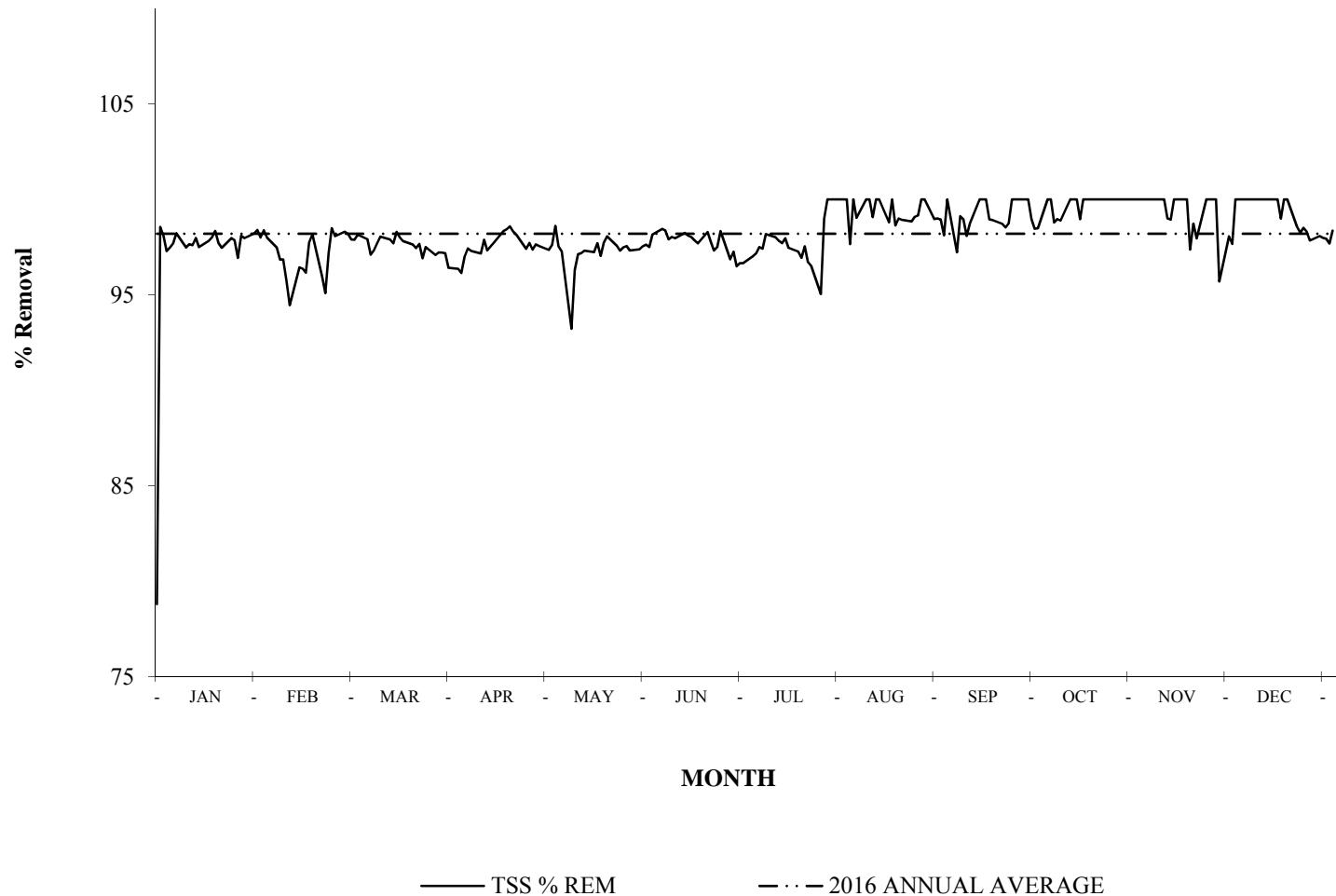


2016 Total Suspended Solids

Daily TSS Values - 2016

Day	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec			
	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF	INF	EFF		
1	224	47.5	268	4.3	252	5.3		12.5	264	7.0	248	6.2	8.5	308	ND	260	ND	4.6	310	ND	262	ND				
2	338	4.9	230	4.6	250	5.3		11.5	294	7.0	304	5.6	10.3	286	6.7	3.0	274	ND	284	ND						
3	342	6.4	266	4.3	238	4.4	272	9.9	352	4.9		4.9	268	8.0	294	ND	2.7	292	ND	252	ND					
4	262	7.1	254	5.1		3.4	246	9.5	268	6.6	4.1	258	7.3	362	3.5	256	7.1	298	3.6		ND	216	ND			
5	296	7.5		5.0		4.4	280	8.4	256	7.0	284	4.4	284	7.1		2.7	294	2.6	336	3.5		ND	250	ND		
6	260	6.0		5.7	240	5.0	272	7.0		7.3	270	4.4	286	7.4	ND	288	3.0	288	3.2	272	ND	264	ND			
7	282	5.0	242	6.1	200	5.8	274	7.4		7.7	258	5.4	280	5.1	304	ND	272	5.2	ND	314	ND	284	ND			
8		8.4	276	8.7	278	7.4		7.3	118	8.0	274	5.4		5.8	316	ND	270	3.4	ND	270	2.7	284	ND			
9		7.0	308	9.7	286	6.6		7.3	208	7.7	314	6.4		4.6	279	2.6		2.6	298	ND	264	2.8		ND		
10	238	6.0	244	10.4	302	5.9	226	6.4	296	8.5		5.8	232	4.6	272	ND		ND	324	ND	310	ND		ND		
11	264	6.2	240	13.3		5.1	288	6.1	266	7.5		5.3	272	5.9	270	ND	274	ND	268	ND		3.1	324	ND		
12	250	6.0		10.1		5.3	262	7.0	290	7.8	290	5.1	300	6.9	ND	270	ND	250	2.6		ND	286	ND			
13	272	5.5		8.8	252	5.3	288	7.1		9.4	364	6.9	314	6.4		ND	258	ND	574	ND	248	ND	316	3.2		
14	228	5.7	250	8.9	278	6.4	312	7.1		6.8	390	7.7	272	6.9	258	3.1	248	2.6		ND	276	ND	266	ND		
15		5.1	234	8.5	282	4.8		6.2	260	7.2	344	7.4		6.8	286	ND	266	2.9		ND	304	8.0	282	ND		
16		6.9	250	9.6	290	5.8		4.6	270	6.2	386	8.9		7.9	278	3.8		3.2	264	ND	204	2.6	3.1			
17	276	6.0	292	6.6	270	5.9	260	4.3	294	8.7		6.7	260	7.1	280	2.8		2.8	278	ND	254	5.2	3.7			
18	246	4.9	312	5.7		5.1	288	4.5	278	6.3		6.3	258	7.9	290	3.1	258	3.3	278	ND		3.4	280	4.0		
19	290	4.8		5.7		5.5	290	4.1	310	6.0	368	6.3	268	6.6		4.5	266	3.9	292	ND		ND	264	4.6		
20	262	6.0		6.7	270	6.4	272	4.6		6.3	282	6.3	256	8.4		5.0	420	5.3	256	ND	292	ND	268	4.0		
21	268	6.8	240	9.7	262	6.7	274	5.1		7.2	284	7.6	244	8.5	276	3.2	308	ND		ND	298	ND	284	4.8		
22	6.0	220	10.8	334	7.8		5.3	288	7.0	296	7.4		8.6	340	3.1	344	ND		ND	276	ND	260	5.6			
23	5.0	314	8.8	272	8.4		5.1	272	7.3	354	5.9		7.0	320	2.7		ND	274	ND	278	ND		4.2			
24	266	5.4	318	4.8	340	8.5	216	5.6	278	7.0		6.8	266	13.2	270	ND	ND	270	ND	300	12.9		4.6			
25	252	5.4	264	5.1		8.6	250	5.7	286	7.0		6.7	306	3.1	282	ND	264	ND	290	ND		ND	276	5.3		
26	238	7.3		4.1		8.5	266	7.0	280	7.5	258	8.1	310	ND		3.4	264	ND	278	ND		ND	332	6.7		
27	262	5.0		3.7	268	7.8	280	6.6		7.8	314	8.6	300	ND		ND	278	2.9	280	ND	274	5.3	320	6.6		
28	266	5.4	236	4.0	288	8.0	286	7.0		7.7	248	8.7	290	ND	252	2.6	188	2.9		ND	274	6.4	268	6.2		
29	5.3	254	4.6	262	7.3		7.4	294	7.7	260	8.7		ND	270	2.7	198	3.0		ND	302	ND	298	4.9			
30	5.3				294	8.3		6.3	284	7.0	278	9.3		ND	274	2.9		3.7	290	ND	276	ND		4.6	Annual Summary	
31	280	5.0			276	9.9			362	8.6			286	ND	250	4.7			278	ND			4.5	INF	EFF	
Ave	268	7.3	262	7.0	273	6.4	270	6.8	277	7.3	303	6.6	277	5.8	288	2.0	274	2.2	297	0.6	279	1.7	280	2.6	279	4.7
Min	224	4.8	220	3.7	200	3.4	216	4.1	118	4.9	248	4.1	232	3.1	250	2.6	188	2.6	250	2.6	204	2.6	216	3.1	118	2.6
Max	342	47.5	318	13.3	340	9.9	312	12.5	362	9.4	390	9.3	314	13.2	362	6.7	420	7.1	574	4.6	314	12.9	332	6.7	574	47.5

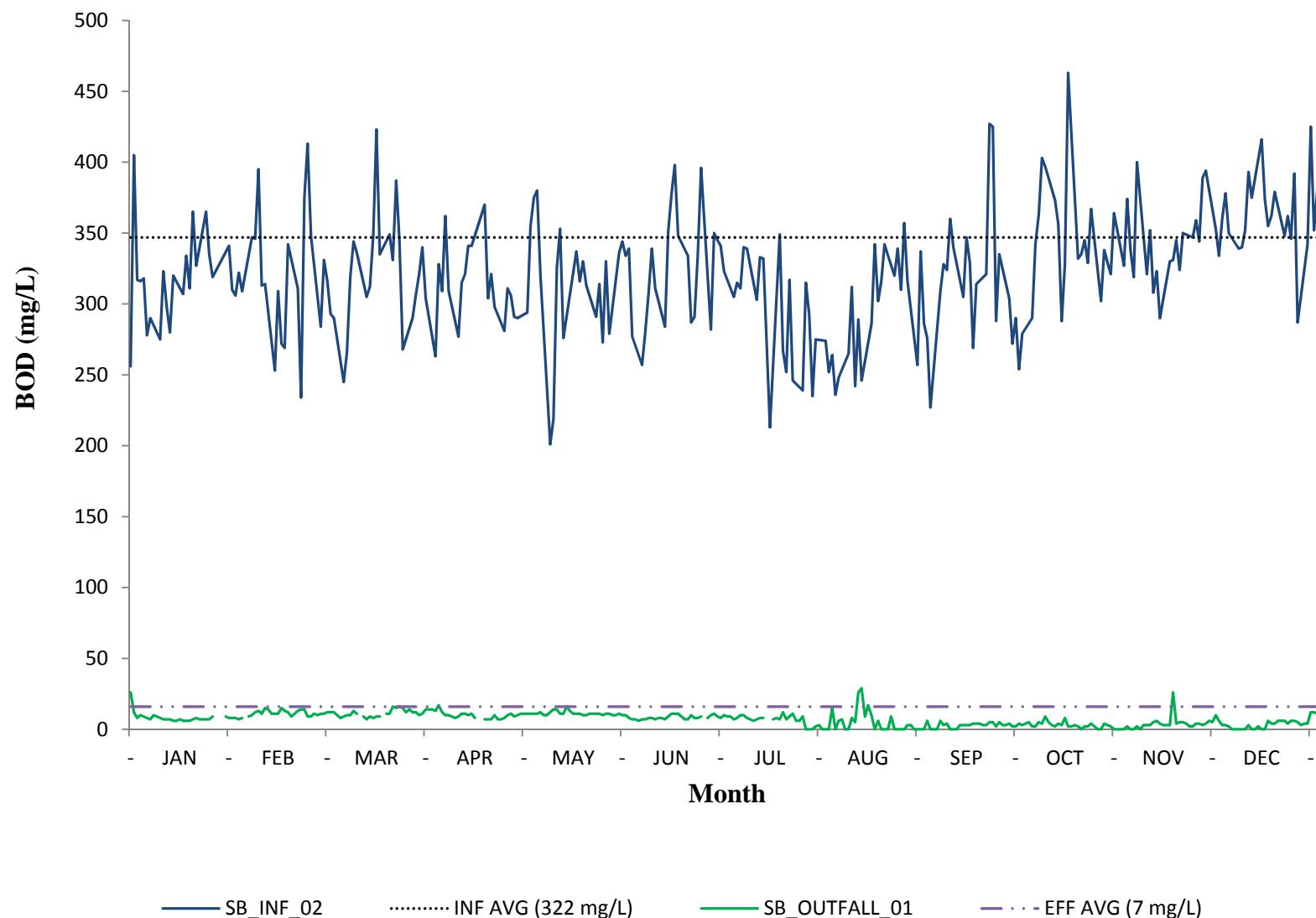
**South Bay Wastewater Reclamation Plant
2016 TSS Percent Removal**



2016 TSS Percent Removals

Day	TSS Removals											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	78.8	98.4	97.9		97.3	97.5		100.0	100.0		100.0	100.0
2	98.6	98.0	97.9		97.6	98.2		97.7		100.0	100.0	
3	98.1	98.4	98.2	96.4	98.6		97.0	100.0		100.0	100.0	
4	97.3	98.0		96.1	97.5		97.2	99.0	97.2	98.8		100.0
5	97.5			97.0	97.3	98.5	97.5		99.1	99.0		100.0
6	97.7		97.9	97.4		98.4	97.4		99.0	98.9	100.0	100.0
7	98.2	97.5	97.1	97.3		97.9	98.2	100.0	98.1		100.0	100.0
8		96.8	97.3		93.2	98.0		100.0	98.7		99.0	100.0
9		96.9	97.7		96.3	98.0		99.1		100.0	98.9	
10	97.5	95.7	98.0	97.2	97.1		98.0	100.0		100.0	100.0	
11	97.7	94.5		97.9	97.2		97.8	100.0	100.0	100.0		100.0
12	97.6			97.3	97.3	98.2	97.7		100.0	99.0		100.0
13	98.0		97.9	97.5		98.1	98.0		100.0	100.0	100.0	99.0
14	97.5	96.4	97.7	97.7		98.0	97.5	98.8	99.0		100.0	100.0
16		96.4	98.3		97.2	97.8		100.0	98.9		97.4	100.0
16		96.2	98.0		97.7	97.7		98.6		100.0	98.7	
17	97.8	97.7	97.8	98.3	97.0		97.3	99.0		100.0	98.0	
18	98.0	98.2		98.4	97.7		96.9	98.9	98.7	100.0		98.6
19	98.3			98.6	98.1	98.3	97.5		98.5	100.0		98.3
20	97.7		97.6	98.3		97.8	96.7		98.7	100.0	100.0	98.5
21	97.5	96.0	97.4	98.1		97.3	96.5	98.8	100.0		100.0	98.3
22		95.1	97.7		97.6	97.5		99.1	100.0		100.0	97.8
23		97.2	96.9		97.3	98.3		99.2		100.0	100.0	
24	98.0	98.5	97.5	97.4	97.5		95.0	100.0		100.0	95.7	
25	97.9	98.1		97.7	97.6		99.0	100.0	100.0	100.0		98.1
26	96.9			97.4	97.3	96.9	100.0		100.0	100.0		98.0
27	98.1		97.1	97.6		97.3	100.0		99.0	100.0	98.1	97.9
28	98.0	98.3	97.2	97.6		96.5	100.0	99.0	98.5		97.7	97.7
29		98.2	97.2		97.4	96.7		99.0	98.5		100.0	98.4
30			97.2		97.5	96.7		98.9		100.0	100.0	
31	98.2		96.4		97.6		100.0	98.1		100.0		Annual Summary
Average	97.0	97.2	97.6	97.6	97.3	97.7	97.9	99.3	99.1	99.8	99.2	99.1
Minimum	78.8	94.5	96.4	96.1	93.2	96.5	95.0	97.7	97.2	98.8	95.7	97.7
Maximum	98.6	98.5	98.3	98.6	98.6	98.5	100.0	100.0	100.0	100.0	100.0	100.0

**South Bay Wastewater Reclamation Plant
2016 Biochemical Oxygen Demand**

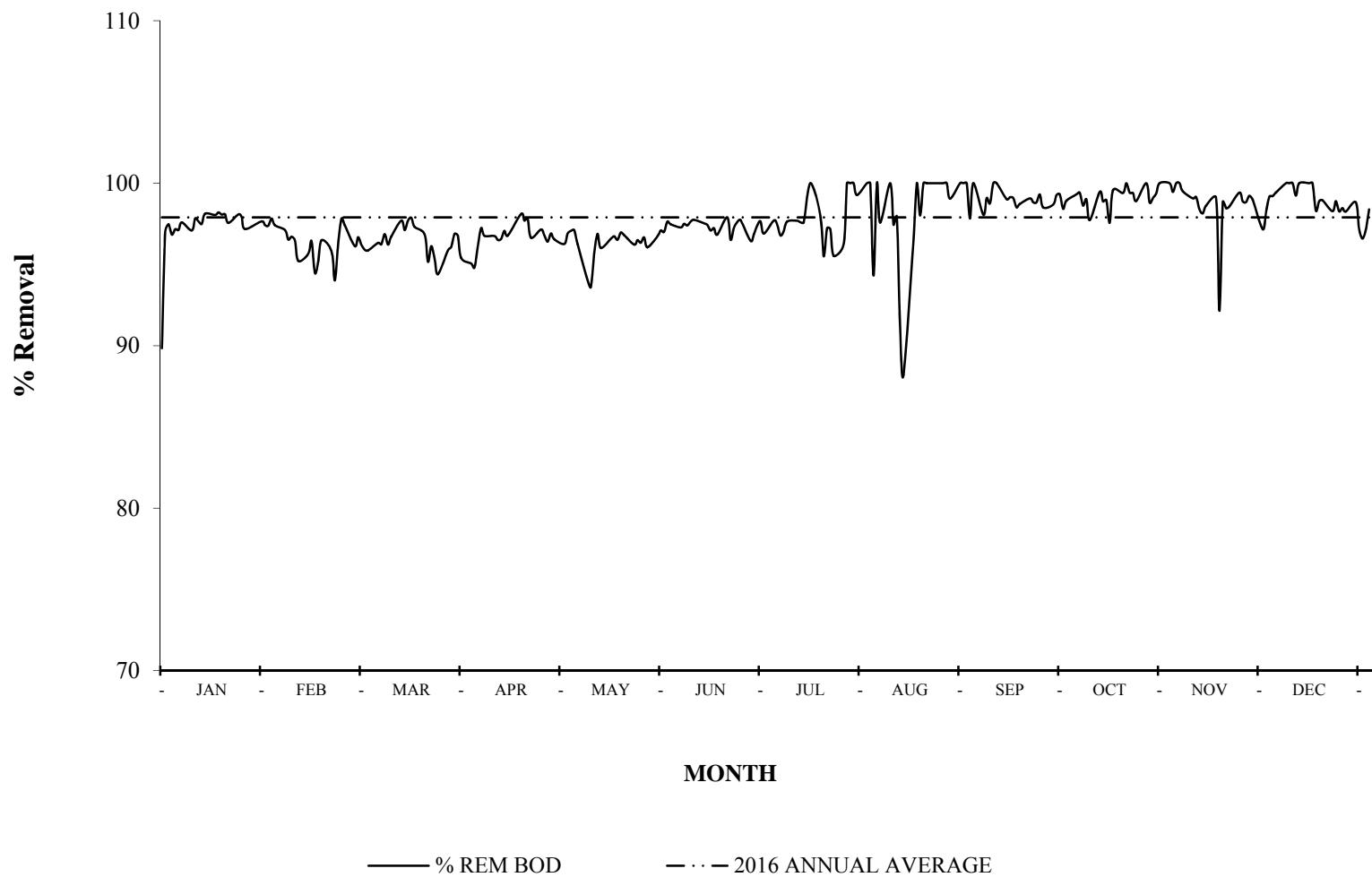


2016 Biochemical Oxygen Demand

Daily BOD Values - 2016

Day	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec			
	INF	EFF																								
1	256	26	310	8	316	12		14	294	11	339	8		9	252	ND	227	ND	5	338	ND	350	2			
2	405	12	306	8	293	12		14	355	11	277	7		9	264	15		ND	290	2	319	ND		ND		
3	317	8	322	7	290	12	263	13	375	11		7	305	7	236	ND		ND	342	2	400	2		ND		
4	316	10	309	8		10	328	17	380	11		6	315	8	248	6	309	6	363	5		ND	339	ND		
5	318	9			8	309	12	320	12	257	7	311	10		7	328	3	403	4		3	340	ND			
6	278	8		9	245	9	362	10		10	280	7	340	10		ND	324	4	397	9	321	3	352	ND		
7	290	7	347	10	266	10	309	10		10	308	8	339	8	265	ND	360	ND		5	352	3	393	3		
8		10	346	12	319	10		9	201	12	339	8		7	312	8	340	ND		3	308	5	375	ND		
9		9	395	13	344	13		8	219	14	311	7		6	242	5		ND	373	2	323	6		ND		
10	275	8	313	11	336	11	277	9	325	14		8	303	7	289	26		3	356	4	290	4		2		
11	323	7	314	15			315	11	353	11		8	333	8	246	29	305	3	288	3		3	416	ND		
12	298	7		14		9	321	11	276	11	284	7	332	8		9	347	3	328	8		3	374	ND		
13	280	7		11	305	7	341	10		16	351	9			17	329	3	463	2	330	3	355	6			
14	320	6	253	11	312	9	341	11		13	378	11	213		286	10	269	4		2	331	26	362	4		
15	6	309	11	348	8		8	322	11	398	11		7	342	ND	314	4		3	345	4	379	4			
16	7	272	15	423	9			337	11	348	11		8	302	6		4	332	2	324	5		6			
17	307	6	269	13	335	9			316	11		9	349	7	316	ND		3	335	ND	350	5		6		
18	334	6	342	12			370	7	330	10		7	267	12	342	ND	321	3	345	2		4	348	6		
19	311	6		9		11	304	7	313	10	334	7	252	7		ND	427	5	329	2		2	362	4		
20	365	7		11	349	11	321	7		11	287	10	317	9		ND	425	5	367	4	347	2	346	6		
21	327	8	311	13	331	16	298	10		11	291	8	246	11	320	ND	288	2		2	359	4	392	6		
22	7	234	14	387	15		7	291	11	334	8		6	339	ND	335	5		ND	344	4	287	5			
23	7	375	14	345	16		7	314	11	396	9		6	310	ND		3	302	ND	389	3		3			
24	365	7	413	9	268	15	281	8	273	10		239	9	357	ND		3	338	4	394	4		4			
25	335	7	348	9		12	311	10	330	11		8	315	ND	316	3	304	4	329	3		6	342	4		
26	319	9		11		14	306	11	279	11	282	10	292	ND		3	272	2	321	2		5	425	12		
27			10	290	12	291	9		10	350	11	235	ND		ND	290	2	364	ND	353	10		352	12		
28			284	11	306	12	290	10		10	345	9	275	2	257	ND	254	4		ND	334	6	381	11		
29			331	11	321	10		11	336	11	341	8		3	337	ND	279	3		ND	360	3	310	5		
30		9			340	11		11	344	10	323	10		ND	286	ND		4	327	ND	378	3		6		
31	341	8			304	14			334	10			274	ND	276	6		374	2		6	INF	EFF			
Avg	318	8	319	11	321	11	313	10	314	11	325	8	293	6	293	5	317	3	348	3	345	4	361	4	322	7
Min	256	6	234	7	245	7	263	7	201	10	257	6	213	0	236	0	227	0	288	0	290	0	287	0	201	0
Max	405	26	413	15	423	16	370	17	380	16	398	11	349	12	357	29	427	6	463	9	400	26	425	12	463	29

**South Bay Wastewater Reclamation Plant
2016 BOD Percent Removal**



2016 BOD Percent Removals

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	89.8	97.4	96.2		96.3	97.6		100.0	100.0		100.0	99.4
2	97.0	97.4	95.9		96.9	97.5		94.3		99.3	100.0	
3	97.5	97.8	95.9	95.1	97.1		97.7	100.0		99.4	99.5	
4	96.8	97.4		94.8	97.1		97.5	97.6	98.1	98.6		100.0
5	97.2		96.1		96.3	97.3	96.8		99.1	99.0		100.0
6	97.1		96.3	97.2		97.5	97.1		98.8	97.7	99.1	100.0
7	97.6	97.1	96.2	96.8		97.4	97.6	100.0	100.0		99.1	99.2
8		96.5	96.9		94.0	97.6		97.4	100.0		98.4	100.0
9		96.7	96.2		93.6	97.7		97.9		99.5	98.1	
10	97.1	96.5	96.7	96.8	95.7		97.7	91.0		98.9	98.6	
11	97.8	95.2		96.5	96.9		97.6	88.2	99.0	99.0		100.0
12	97.7		96.6		96.0	97.5	97.6		99.1	97.6		100.0
13	97.5		97.7	97.1		97.4			99.1	99.6	99.1	98.3
14	98.1	95.7	97.1	96.8		97.1	100.0	96.5	98.5		92.1	98.9
15		96.4	97.7		96.6	97.2		100.0	98.7		98.8	98.9
16		94.5	97.9		96.7	96.8		98.0		99.4	98.5	
17	98.0	95.2	97.3		96.5		98.0	100.0		100.0	98.6	
18	98.2	96.5		98.1	97.0		95.5	100.0	99.1	99.4		98.3
19	98.1			97.7	96.8	97.9	97.2		98.8	99.4		98.9
20	98.1		96.8	97.8		96.5	97.2		98.8	98.9	99.4	98.3
21	97.6	95.8	95.2	96.6		97.3	95.5	100.0	99.3		98.9	98.5
22		94.0	96.1		96.2	97.6		100.0	98.5		98.8	98.3
23		96.3	95.4		96.5	97.7		100.0		100.0	99.2	
24	98.1	97.8	94.4	97.2	96.3		96.2	100.0		98.8	99.0	
25	97.9	97.4		96.8	96.7		100.0	99.1	98.7	99.1		98.8
26	97.2			96.4	96.1	96.5	100.0		99.3	99.4		97.2
27			95.9	96.9		96.9	100.0		99.3	100.0	97.2	96.6
28		96.1	96.1	96.6		97.4	99.3	100.0	98.4		98.2	97.1
29		96.7	96.9		96.7	97.7		100.0	98.9		99.2	98.4
30			96.8		97.1	96.9		100.0		100.0	99.2	
31	97.7		95.4		97.0		100.0	97.8		99.5		Annual Summary
Average	97.2	96.40	96.4	96.7	96.3	97.3	97.9	98.2	99.0	99.2	98.6	98.8
Minimum	89.8	94.02	94.4	94.8	93.6	96.5	95.5	88.2	98.1	97.6	92.1	88.2
Maximum	98.2	97.8	97.9	98.1	97.1	97.9	100.0	100.0	100.0	100.0	100.0	100.0

F. Toxicity Testing: South Bay Water Reclamation Plant 2016

INTRODUCTION

The City of San Diego's Toxicology Laboratory (CSDL) oversaw aquatic toxicity testing (bioassays) of effluent from the South Bay Water Reclamation Plant (SBWRP) during calendar year 2016 as required by Order No. R9-2013-0006, NPDES Permit No. CA0109045, and as amended by Order No. R9-2014-0071. The current testing requirements are designed to determine the chronic toxicity of effluent samples collected from the SBWRP. This chapter presents summaries and discussion of all toxicity tests conducted in the calendar year 2016.

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. Annual acute toxicity testing of SBWRP effluent is not required under Order No. R9-2013-0006, as amended by Order No. R9-2014-0071.

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 quarterly 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.

All required toxicity analyses in 2016 were performed by the CSDL's external contract lab for toxicology services, Nautilus Environmental (4340 Vandever Ave, San Diego, CA 92120). Nautilus Environmental is accredited in accordance with NELAP by the State of Oregon Environmental Laboratory Accreditation Program (Certificate No. 4053). It is also certified by the California State Water Resources Control Board Environmental Laboratory Accreditation Program (Certificate No. 1802), and the State of Washington Department of Ecology (Lab ID C552).

MATERIALS & METHODS

Test Materials

SBWRP Effluent

Twenty-four hour, flow-weighted, effluent composite samples were collected at the instream sampling site (designated SB_Outfall_00) for the SBWRP and stored between 0 – 6 °C with minimal light exposure until test initiation. All tests were initiated within 36 hours of sample collection. The exposure series consisted 0.26, 0.53, 1.05, 2.10, and 4.20% effluent 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 approximately 15 °C, and used within 96 hours of collection or frozen to produce hypersaline brine. Detailed descriptions for all toxicity test procedures are provided in the City of San Diego Toxicology Laboratory Quality Assurance Manual (City of San Diego 2016).

Chronic Bioassays

Red Abalone Development

During the current reporting period (January–December 2016), chronic bioassays using the red abalone *Haliotis rufescens* were conducted for the SBWRP effluent as part of the biennial sensitivity re-screening in accordance with USEPA protocol EPA/600/R-95/136 (USEPA 1995).

Test organisms were purchased from Cultured Abalone (Goleta, California), and/or American Abalone Farm (Davenport, California), and shipped via overnight delivery to the CSDLT or Nautilus Environmental. Mature male and female abalones were placed in gender-specific natural seawater tanks and held at 15 ± 1 °C. 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 approximately 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 zinc. 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. Data were analyzed in accordance with “Flowchart for statistical analysis of red abalone *Haliotis rufescens*, development data” (USEPA 1995).

Kelp Germination and Growth

During the current reporting period (January–December 2016), chronic bioassays using the giant kelp, *Macrocystis pyrifera*, were conducted as part of the biennial sensitivity re-

screening of the SBWRP effluent. Giant kelp was selected as the most sensitive species and used for continued monitoring of the SBWRP effluent on a quarterly basis 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 ± 3 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 exposure series consisted of 10, 32, 100, 180, 320, and 560 $\mu\text{g/L}$ copper. 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).

Topsmelt Survival and Growth

During the current reporting period (January–December 2016), chronic bioassays using the topsmelt, *Atherinops affinis*, were conducted for the SBWRP effluent as part of the biennial sensitivity re-screening 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 to the effluent exposure series for seven days in a static-renewal system. 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 $\mu\text{g/L}$. 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).

Statistical Methods

All data were analyzed using a combination of multiple comparison and point estimation methods prescribed by USEPA (1995). Comprehensive Environmental Toxicity Information System (CETIS) Software (Tidepool Scientific 2013) was used for statistical analyses. In addition, all multi-concentration tests were subjected to an evaluation of the concentration-response relationship.

In accordance with USEPA guidelines on method variability, the lower “Percent Minimum Significant Difference” (PMSD) bound was also evaluated for chronic toxicity test data in order to minimize Type 1 error (i.e., false positives). 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 10th percentile PMSD value listed for the test method in the USEPA guidance document, then the exposure concentration was further evaluated using other EPA-approved statistical strategies (USEPA 2000).

RESULTS & DISCUSSION

Chronic Toxicity of SBWRP Effluent

In 2016, the City conducted chronic bioassays of the SBWRP effluent in accordance with the biennial species sensitivity re-screening requirement using the red abalone, giant kelp, and topsmelt. The giant kelp was selected as the most sensitive species for continued monitoring. All tests met the test acceptability criteria and the NPDES permit’s chronic toxicity performance goal (Table T.1).

REFERENCES

- City of San Diego. 2016. Quality Assurance Manual. City of San Diego Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA
- Hemmer, MJ, DP Middaugh, V Comparetta. 1992. Comparative Acute Sensitivity of Larval Topsmeat, *Atherinops affinis*, and Inland Silverside, *Menidia beryllina*, to 11 Chemicals. *Environmental Toxicology and Chemistry*, 11(3): 401-408.
- Tidepool Scientific Software. 2013. Comprehensive Environmental Toxicity Information System Software.
- USEPA. 1995. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH, EPA/600/R-95/136.
- USEPA. 2000. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program. U.S. Environmental Protection Agency, Office of Water (4203), EPA 833-R-00-003.

Table T.1

Results of SBWRP effluent chronic toxicity tests conducted in 2016. Data are presented as chronic toxic units (TUC).

Sample Date	Red Abalone		Giant Kelp		Topsmelt	
	Development	Germination	Growth	Survival	Growth	
02/01/2016	-	-	-	<23.8	<23.8	
02/02/2016	<23.8	<23.8	<23.8	-	-	
04/05/2016	-	<23.8	<23.8	-	-	
07/12/2016	-	<23.8	<23.8	-	-	
10/04/2016	-	<23.8	<23.8	-	-	
N	1	4	4	1	1	
No. in compliance	1	4	4	1	1	
Mean TUC	<23.8	<23.8	<23.8	<23.8	<23.8	

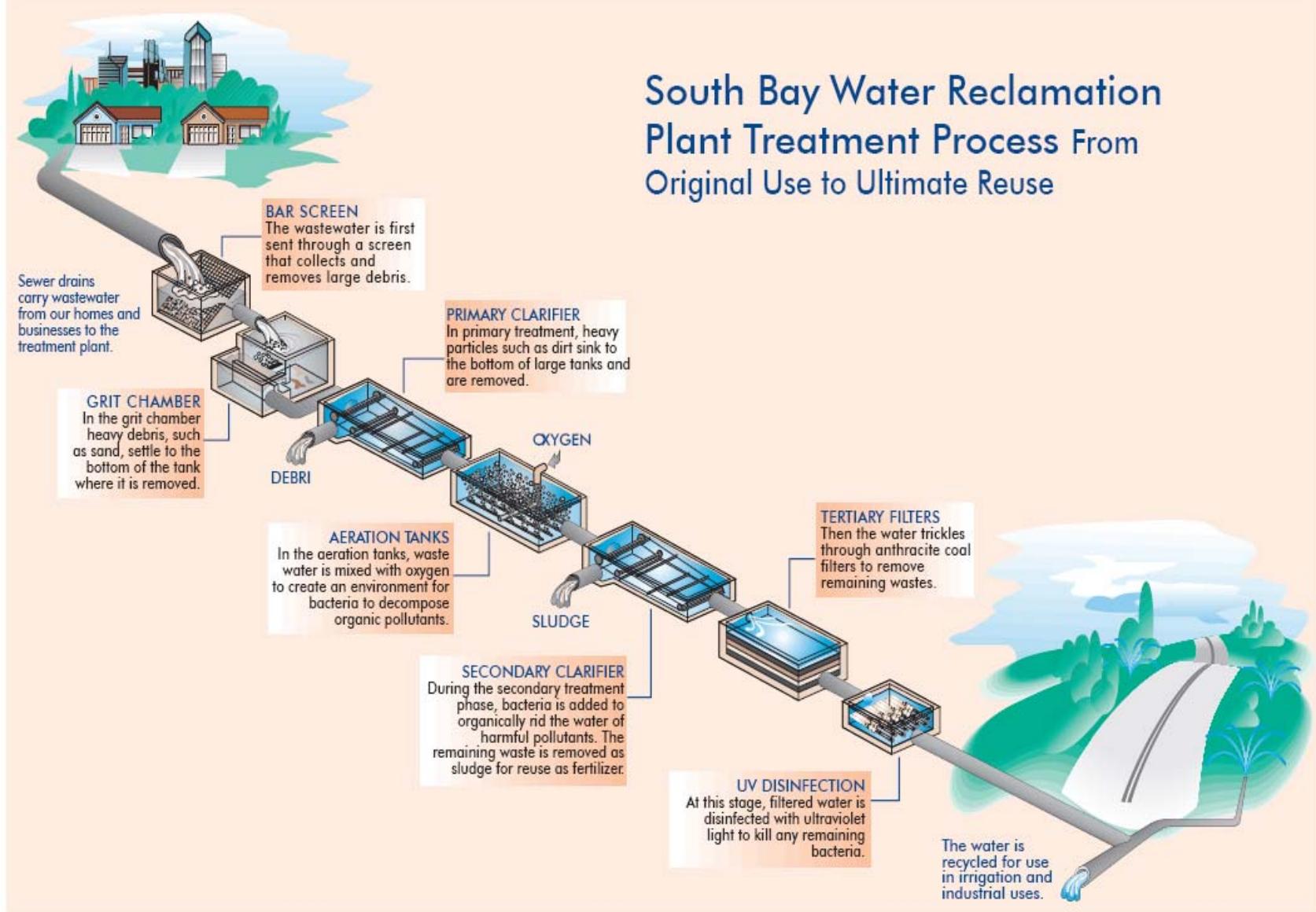
NPDES permit performance goal: 96 TUC

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III. Plant Operations Summary

- A. Flows
- B. Rain Days
- C. Chemical Report
- D. Facilities Out of Service Report

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Overview of the Wastewater Treatment Process

Please see the treatment process flow diagram on the preceding page.

Debris, large particulates, and sand are removed in the headworks by mechanical bar-screens and aerated grit removal systems. The process then consists of classical primary sedimentation and secondary treatment by activated sludge. While secondary effluent may be discharged directly to the ocean outfall the usual process directs the treated secondary effluent to reclamation and beneficial reuse by tertiary treatment and disinfection. Even if not beneficially reused, most of the flow goes through tertiary treatment. Tertiary treatment consists of filtration through Anthracite Coal Beds followed by disinfection with high intensity UV (ultraviolet) light. At this stage the "reclaimed" water meets California Title 22 full body contact requirements.

Untreated wastewater (Influent) enters the plant's Headworks from the South Bay region. In the Headworks, the wastewater passes through large, rake-like Bar Screens to remove solid debris and floating material (called "Rags") such as cloth, wood, and plastic material. These "rags" are dewatered and trucked to a landfill.

Following the headworks, the screened wastewater then passes through aerated Grit Chambers where heavier solids such as sand, gravel, coffee grounds and eggshells settle out and are removed. The grit is then dewatered and taken to landfills.

Wastewater then flows into the Primary Sedimentation Basins where the sedimentation process starts. Solids sink to the bottom of the tanks and "scum" (grease and cooking oils) float to the surface. "Raw Sludge" which has settled to the bottom of the basins is returned to the sewer system and sent to the Point Loma Wastewater Treatment Plant. Similarly, the scum is skimmed from the surface and returned to the sewer system.

The wastewater then enters Anoxic Zone Chambers that are oxygen depleted. The wastewater mixes with bacteria ("Bugs") that eat soluble organic material. The wastewater then flows into Aeration Basins where diffused air is pumped into the water. Here, the bugs begin to ingest and digest the organic solids while increasing in number and density.

Wastewater flows from the Aeration Basin into the Secondary Clarifiers where the bacteria and digested solids settle to the bottom as "Secondary Sludge." Some of this Sludge and any remaining scum are removed and returned to the sewer system for treatment at the Point Loma Wastewater Treatment Plant. The remaining sludge is returned to the Anoxic Basins and again mixed with the wastewater.

The water, now treated to a Secondary Treatment level, can either be discharged into the ocean though the South Bay Ocean Outfall or moved on to Tertiary Treatment for reclaimed water applications and beneficial reuse⁵.

In Tertiary Treatment, the treated wastewater (effluent) flows into Anthracite Coal Beds where it is filtered of remaining solids as it passes through the coal medium. The filtered water then passes through chambers where it is disinfected through exposure to high-intensity UV (ultraviolet) light.

⁵ The Recycled Water Users Summary Report as described in Permit No. 2000-203 is submitted separately.

SBWRP Annual Monitoring Report
2016 Flow Report

SBWRP FLOWS

(Million Gallons / Day)

Mon	Influent	Outfall	Effluent	South Metro		Dilution Water	Recycled Plant	
				Secondary	Interceptor	Recycled Production	Distributed Recycled	Added Recycled
01	7.40	6.11	2.76	1.01	4.24	.19	.00	.69
02	7.46	4.12	2.47	1.01	4.58	2.24	.00	.70
03	7.52	4.31	1.65	1.14	5.44	2.01	.00	.77
04	7.47	3.95	1.71	1.10	5.39	2.40	.00	.75
05	7.59	3.45	1.22	1.19	5.97	2.96	.00	.78
06	7.70	2.47	1.79	1.12	5.48	4.06	.00	.74
07	7.59	1.50	.65	1.11	6.61	5.00	.00	.76
08	7.59	1.58	.05	1.15	7.33	4.91	.00	.89
09	7.46	2.61	.04	1.07	7.25	3.84	.00	.84
10	7.25	1.53	.00	1.08	7.01	4.68	.00	.80
11	7.29	3.02	.17	1.05	6.89	3.18	.00	.85
12	7.26	5.02	1.05	1.14	5.93	1.12	.00	.83
avg	7.46	3.31	1.13	1.10	6.01	3.05	.00	.78

(Million Gallons / Month)

Mon	Influent	Outfall	Effluent	South Metro		Dilution Water	Recycled Plant	
				Secondary	Interceptor	Recycled Production	Distributed Recycled	Added Recycled
01	229.39	189.34	85.50	31.32	131.48	6.03	.00	21.48
02	216.30	119.35	71.70	29.40	132.96	64.97	.00	20.32
03	233.22	133.71	51.08	35.26	168.74	62.38	.00	23.75
04	223.99	118.50	51.42	32.92	161.79	72.05	.00	22.62
05	235.18	106.89	37.71	36.79	185.12	91.64	.00	24.29
06	230.94	74.24	53.78	33.49	164.45	121.83	.00	22.15
07	235.29	46.47	20.11	34.27	205.06	155.10	.00	23.61
08	235.16	48.99	1.54	35.69	227.17	152.10	.01	27.58
09	223.86	78.27	1.14	32.03	217.42	115.14	.00	25.18
10	224.76	47.28	.00	33.44	217.28	145.05	.00	24.91
11	218.64	90.49	5.07	31.38	206.58	95.54	.00	25.59
12	224.93	155.66	32.50	35.22	183.71	34.77	.00	25.63
avg	227.64	100.77	34.30	33.43	183.48	93.05	.00	23.93
sum	2731.66	1209.19	411.55	401.21	2201.76	1116.60	.01	287.11

A. Flows

South Bay Water Reclamation Plant**Effluent flows (mgd) 2016**

Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3.95	6.67	3.82	2.55	3.85	2.37	1.35	1.66	0.85	0.03	2.23	6.16
2	4.86	3.69	2.87	3.52	3.49	2.25	1.32	0.11	0.11	1.90	1.34	6.12
3	6.08	6.41	1.71	6.68	2.07	3.24	2.85	2.67	2.58	0.06	1.75	3.39
4	6.04	6.53	2.55	2.49	1.22	3.25	1.96	1.83	4.62	1.60	1.66	5.76
5	6.50	6.57	1.50	3.57	2.24	4.39	2.91	1.30	2.24	0.72	2.75	6.23
6	6.84	6.50	4.52	1.60	4.34	2.74	1.33	0.92	2.25	2.39	4.28	2.79
7	6.51	6.18	6.55	2.08	6.20	1.33	1.37	3.87	2.59	0.06	1.19	3.00
8	6.50	5.91	6.35	3.93	6.57	1.32	1.37	2.44	1.23	1.52	1.34	2.60
9	6.62	4.75	6.29	6.47	6.44	1.38	1.34	2.33	1.66	2.94	3.79	2.24
10	6.69	5.72	5.51	6.47	4.29	1.34	3.02	2.18	2.19	0.36	1.40	4.33
11	6.65	4.36	6.33	6.58	3.08	2.68	1.36	0.10	4.74	0.08	0.05	5.89
12	6.59	2.88	6.38	6.40	3.34	6.61	2.45	0.10	2.89	0.06	1.75	2.53
13	6.79	2.96	6.45	5.13	3.03	3.60	1.49	0.68	1.41	1.01	3.35	2.85
14	6.32	3.12	4.99	6.46	2.81	3.28	1.39	4.07	1.67	0.22	2.28	2.48
15	6.37	3.40	6.45	4.92	4.54	2.85	0.48	1.82	1.73	1.88	3.36	4.04
16	6.49	2.43	5.12	5.97	3.81	2.34	0.07	0.52	2.19	3.99	1.46	6.17
17	6.55	1.25	3.55	6.28	3.37	2.27	0.97	1.26	2.80	1.41	0.17	6.02
18	6.72	2.70	3.53	2.68	2.32	2.27	0.49	0.15	5.03	0.98	0.66	5.84
19	6.33	4.67	4.21	6.50	1.29	2.31	0.93	0.11	2.27	1.36	2.88	4.17
20	6.54	5.56	6.29	1.23	2.73	2.28	1.67	1.80	2.38	1.03	4.00	5.89
21	6.63	6.56	2.86	1.14	4.26	2.32	1.71	3.95	4.78	1.72	2.55	6.48
22	3.92	2.43	3.09	1.15	6.58	2.35	0.09	1.05	6.36	2.21	5.86	6.72
23	3.55	2.96	2.85	2.57	1.90	2.41	0.71	0.10	6.32	1.21	3.28	6.09
24	6.69	2.02	2.82	6.50	1.30	2.39	3.36	1.01	4.71	1.83	6.33	6.10
25	6.52	2.55	2.53	1.83	1.38	2.13	2.35	0.32	4.71	1.34	3.89	5.90
26	4.57	2.09	3.10	1.18	2.84	1.76	0.08	2.01	1.35	1.90	5.81	6.20
27	5.96	2.69	6.55	1.94	2.38	2.63	0.10	1.04	1.04	2.87	4.02	6.12
28	6.02	2.50	1.87	2.33	2.83	1.37	0.09	4.14	0.04	1.85	7.46	5.27
29	6.47	3.29	2.95	1.93	6.63	1.40	1.78	1.29	1.19	2.45	6.29	6.19
30	6.48		3.74	6.42	1.65	1.38	1.65	1.60	0.34	3.96	3.31	6.02
31	6.59		6.38		4.11		4.43	2.56		2.34		6.07
Average	6.11	4.12	4.31	3.95	3.45	2.47	1.50	1.58	2.61	1.53	3.02	5.02
Minimum	3.55	1.25	1.50	1.14	1.22	1.32	0.07	0.10	0.04	0.03	0.05	2.24
Maximum	6.84	6.67	6.55	6.68	6.63	6.61	4.43	4.14	6.36	3.99	7.46	7.46
Total	189.34	119.35	133.71	118.50	106.89	74.24	46.47	48.99	78.27	47.28	90.49	155.66
												Annual Summary

South Bay Water Reclamation Plant
Influent Flows (mgd) 2016

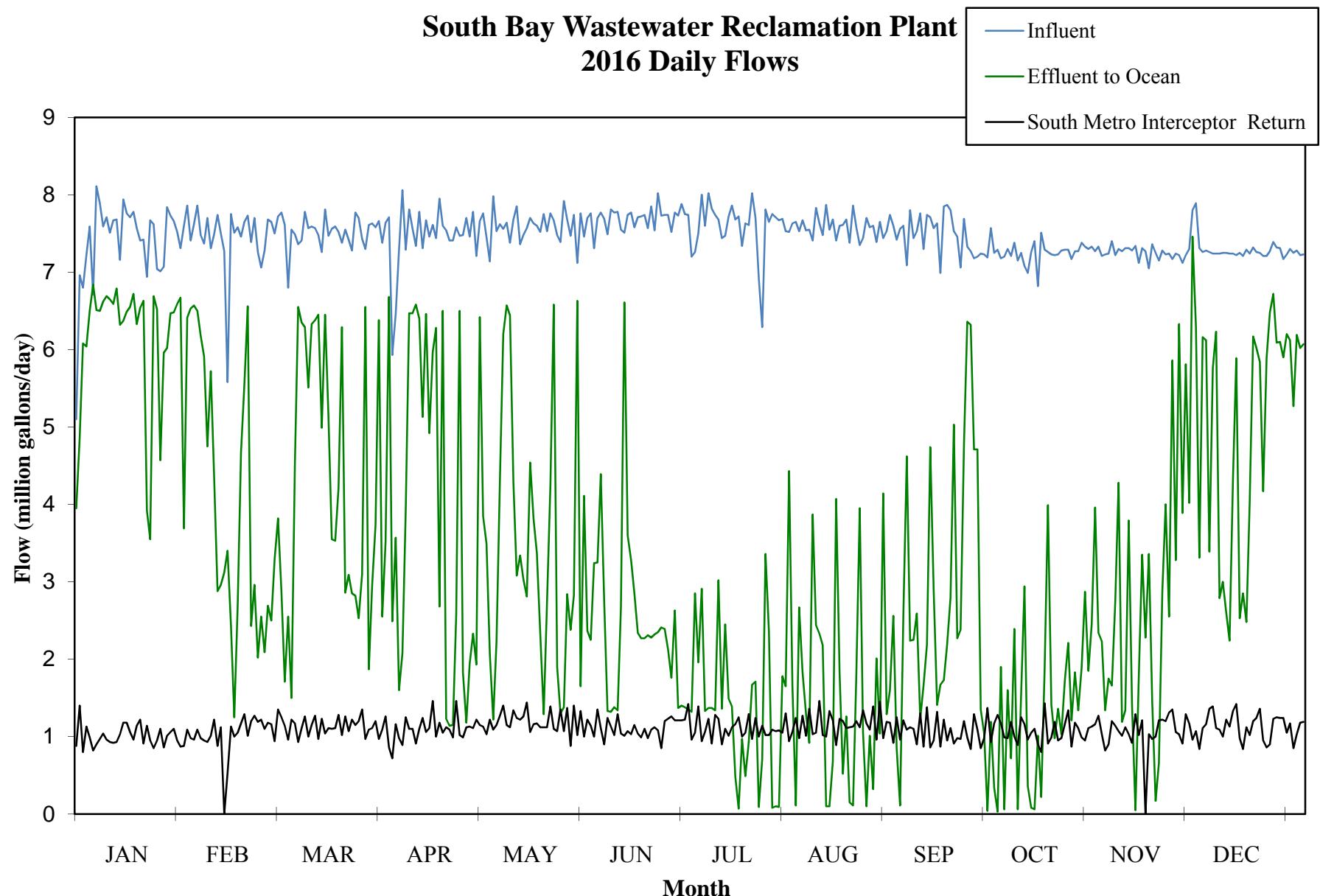
Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	5.10	7.31	7.72	7.38	7.76	7.70	7.74	7.63	7.42	7.29	7.21	7.26
2	6.96	7.60	7.77	7.64	7.45	7.76	7.20	7.65	7.56	7.18	7.23	7.28
3	6.80	7.86	7.61	7.71	7.14	7.31	7.26	7.53	7.60	7.20	7.24	7.26
4	7.22	7.41	6.80	5.93	7.98	7.70	7.50	7.67	7.09	7.30	7.40	7.24
5	7.59	7.62	7.55	6.46	7.53	7.77	8.00	7.54	7.80	7.21	7.22	7.24
6	6.71	7.86	7.49	7.29	7.62	7.69	7.60	7.55	7.44	7.38	7.30	7.24
7	8.11	7.48	7.36	8.06	7.56	7.49	8.02	7.41	7.53	7.15	7.27	7.25
8	7.89	7.37	7.41	7.29	7.64	7.81	7.82	7.83	7.76	7.25	7.31	7.25
9	7.59	7.70	7.78	7.81	7.38	7.77	7.74	7.63	7.30	7.08	7.31	7.24
10	7.71	7.31	7.57	7.56	7.68	7.78	7.68	7.48	7.74	6.99	7.28	7.24
11	7.51	7.49	7.59	7.34	7.85	7.55	7.44	7.87	7.71	7.26	7.34	7.22
12	7.67	7.74	7.57	7.78	7.36	7.51	7.47	7.55	7.57	7.40	7.12	7.25
13	7.68	7.50	7.48	7.31	7.48	7.74	7.72	7.68	7.63	6.82	7.31	7.21
14	7.16	7.27	7.26	7.67	7.57	7.77	7.86	7.41	6.99	7.51	7.27	7.29
15	7.94	5.58	7.81	7.46	7.70	7.58	7.68	7.60	7.85	7.29	7.05	7.24
16	7.76	7.75	7.47	7.61	7.63	7.71	7.72	7.61	7.87	7.26	7.36	7.32
17	7.71	7.51	7.56	7.44	7.60	7.72	7.34	7.68	7.80	7.23	7.25	7.26
18	7.78	7.58	7.59	7.95	7.52	7.74	7.63	7.38	7.53	7.22	7.15	7.25
19	7.57	7.46	7.52	7.60	7.75	7.57	7.61	7.86	7.46	7.23	7.28	7.21
20	7.41	7.65	7.38	7.54	7.53	7.85	8.02	7.58	7.06	7.28	7.23	7.21
21	7.42	7.73	7.55	7.41	7.76	7.54	7.70	7.35	7.69	7.29	7.24	7.27
22	6.94	7.39	7.42	7.41	7.67	8.02	6.92	7.44	7.33	7.29	7.17	7.39
23	7.67	7.70	7.28	7.58	7.48	7.73	6.29	7.70	7.27	7.17	7.24	7.32
24	7.62	7.26	7.77	7.47	7.39	7.74	7.81	7.58	7.18	7.27	7.22	7.31
25	7.04	7.06	7.70	7.48	7.92	7.74	7.65	7.60	7.20	7.27	7.12	7.17
26	7.01	7.28	7.43	7.70	7.68	7.52	7.75	7.39	7.24	7.38	7.22	7.23
27	7.07	7.68	7.30	7.46	7.47	7.77	7.71	7.65	7.23	7.33	7.30	7.30
28	7.84	7.65	7.61	7.78	7.74	7.73	7.67	7.44	7.19	7.30	7.80	7.25
29	7.73	7.50	7.63	7.21	7.12	7.88	7.69	7.53	7.57	7.33	7.89	7.28
30	7.66		7.58	7.66	7.76	7.75	7.53	7.74	7.25	7.27	7.31	7.22
31	7.52		7.66		7.46		7.52	7.60		7.33		7.23
Average	7.40	7.46	7.52	7.47	7.59	7.70	7.59	7.59	7.46	7.25	7.29	7.26
Minimum	5.10	5.58	6.80	5.93	7.12	7.31	6.29	7.35	6.99	6.82	7.05	7.17
Maximum	8.11	7.86	7.81	8.06	7.98	8.02	8.02	7.87	7.87	7.51	7.89	7.39
Total	229.39	216.30	233.22	223.99	235.18	230.94	235.29	235.16	223.86	224.76	218.64	224.93
												Annual Summary

South Bay Water Reclamation Plant

Blended Sludge Discharge to South Metro Interceptor (mgd) 2016

Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.88	0.87	1.35	1.09	1.13	1.22	1.42	1.06	1.25	1.28	1.03	1.11
2	1.40	0.88	1.25	1.26	1.03	1.14	0.96	1.24	0.96	1.17	0.82	1.16
3	0.80	1.09	1.14	0.86	1.22	1.00	1.05	0.98	1.21	0.99	0.90	1.36
4	1.13	0.98	0.96	0.72	1.09	1.35	1.39	1.27	1.09	0.98	1.20	1.39
5	0.99	0.96	1.22	1.16	1.15	1.11	0.94	1.01	1.12	1.19	1.14	1.11
6	0.82	1.09	1.17	0.98	1.27	0.90	1.06	1.36	1.10	1.00	1.07	1.09
7	0.90	0.98	0.93	0.89	1.40	1.24	1.23	1.03	0.90	0.89	1.01	1.00
8	0.97	0.95	1.11	1.25	1.15	1.13	0.91	1.05	1.30	1.25	1.12	1.22
9	1.04	0.93	1.26	1.10	1.12	1.02	1.28	1.46	0.87	1.16	1.03	1.13
10	0.96	1.01	1.00	1.10	1.34	1.29	1.23	1.02	1.38	0.96	0.92	1.33
11	0.93	1.22	1.15	0.91	1.24	1.04	0.90	1.00	0.86	1.05	1.29	1.42
12	0.92	0.88	1.27	1.10	1.22	1.01	1.10	1.33	0.95	1.10	1.02	0.98
13	0.93	1.12	0.97	1.24	1.26	1.07	1.01	1.21	1.32	0.90	1.21	0.84
14	1.03	0.00	1.23	1.06	1.44	1.03	1.12	0.89	0.87	0.80	0.00	1.12
15	1.18	0.53	1.04	1.11	1.06	1.15	1.16	1.23	1.22	1.43	1.03	1.02
16	1.18	1.13	1.11	1.46	1.16	1.04	1.25	1.20	0.95	0.91	0.97	1.20
17	1.06	1.00	1.10	1.00	1.17	0.99	1.00	1.11	1.11	0.99	1.00	1.24
18	0.96	1.05	1.11	1.18	1.12	1.10	1.05	1.12	0.91	1.19	1.21	1.36
19	1.14	1.17	1.28	1.05	1.12	0.98	1.29	1.13	0.98	0.95	1.22	0.95
20	1.22	1.29	1.02	1.12	1.12	1.09	0.97	1.20	0.97	0.98	1.20	0.86
21	0.91	1.01	1.26	1.09	1.39	1.12	1.24	1.12	1.20	1.16	1.31	0.90
22	1.14	1.20	1.07	0.99	1.10	1.08	1.00	1.34	0.99	1.34	1.35	1.23
23	0.95	1.27	1.22	1.46	1.07	0.85	1.14	1.17	0.84	0.87	1.06	1.25
24	0.85	1.19	1.15	1.02	1.35	1.20	1.02	1.09	1.29	1.18	1.03	1.24
25	0.95	1.22	1.20	0.99	1.07	1.23	1.02	1.39	1.09	1.11	0.91	1.24
26	1.10	1.10	1.35	1.12	1.37	1.26	1.09	0.96	0.85	0.99	1.29	1.05
27	0.86	1.18	0.97	1.13	0.88	1.21	1.07	1.45	0.98	0.95	1.17	1.17
28	1.01	1.16	1.09	1.11	1.40	1.21	1.08	0.98	1.37	1.11	0.96	0.85
29	1.06	0.94	1.11	1.22	1.02	1.21	1.05	1.19	0.93	1.13	1.07	1.03
30	1.10		1.20	1.15	1.33	1.22	1.30	1.18	1.17	1.16	0.84	1.18
31	0.95		0.97		1.00		0.94	0.92		1.27		1.19
Average	1.01	1.01	1.14	1.10	1.19	1.12	1.11	1.15	1.07	1.08	1.05	1.14
Minimum	0.80	0.00	0.93	0.72	0.88	0.85	0.90	0.89	0.84	0.80	0.00	0.84
Maximum	1.40	1.29	1.35	1.46	1.44	1.35	1.42	1.46	1.38	1.43	1.35	1.42
Total	31.32	29.40	35.26	32.92	36.79	33.49	34.27	35.69	32.03	33.44	31.38	35.22
												Annual Summary

South Bay Wastewater Reclamation Plant 2016 Daily Flows

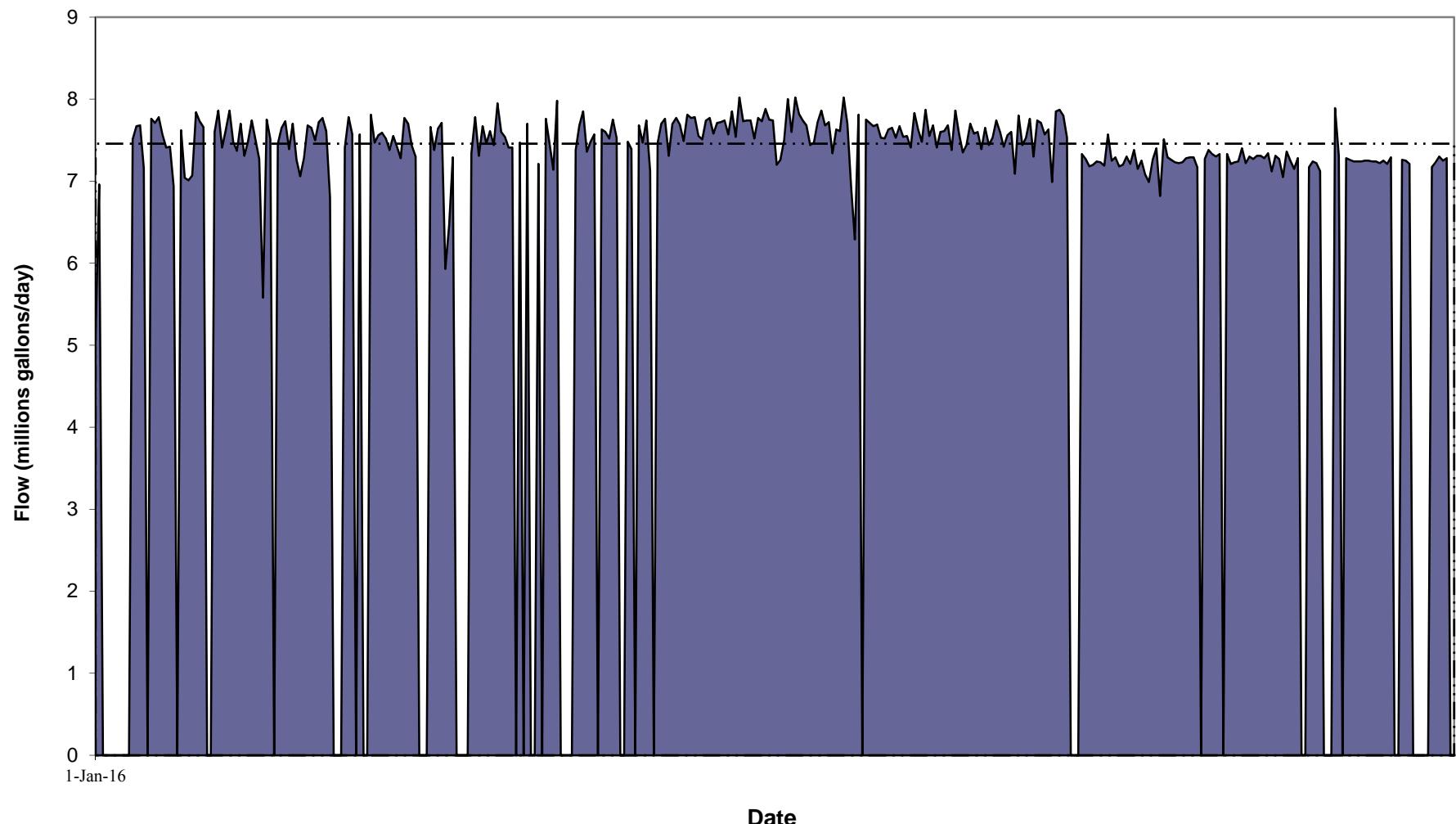


South Bay Water Reclamation Plant

Influent Dry Weather Flows (mgd) 2016

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	5.10		7.72	7.38	7.76	7.70	7.74	7.63	7.42	7.29	7.21	
2	6.96	7.60	7.77	7.64	7.45	7.76	7.20	7.65	7.56	7.18	7.23	7.28
3			7.86	7.61	7.71	7.14	7.31	7.26	7.53	7.60	7.20	7.24
4			7.41	6.80	5.93	7.98	7.70	7.50	7.67	7.09	7.30	7.40
5					6.46		7.77	8.00	7.54	7.80	7.21	7.22
6						7.29		7.69	7.60	7.55	7.44	7.38
7							7.49	8.02	7.41	7.53	7.15	7.27
8								7.81	7.82	7.83	7.76	7.25
9								7.38	7.77	7.63	7.30	7.31
10									7.68	7.48	7.74	6.99
11	7.51	7.49		7.34	7.85	7.55	7.44	7.87	7.71	7.26	7.34	7.22
12	7.67	7.74	7.57	7.78	7.36	7.51	7.47	7.55	7.57	7.40	7.12	7.25
13	7.68	7.50		7.31	7.48	7.74	7.72	7.68	7.63	6.82	7.31	7.21
14	7.16	7.27		7.67	7.57	7.77	7.86	7.41	6.99	7.51	7.27	7.29
15			5.58	7.81	7.46		7.58	7.68	7.60	7.85	7.29	7.05
16	7.76	7.75	7.47	7.61	7.63	7.71	7.72	7.61	7.87	7.26	7.36	
17	7.71	7.51	7.56	7.44	7.60	7.72	7.34	7.68	7.80	7.23	7.25	7.26
18	7.78		7.59	7.95	7.52	7.74	7.63	7.38	7.53	7.22	7.15	7.25
19	7.57	7.46	7.52	7.60	7.75	7.57	7.61	7.86		7.23	7.28	7.21
20	7.41	7.65	7.38	7.54	7.53		7.85	8.02	7.58		7.28	
21	7.42	7.73	7.55	7.41			7.54	7.70	7.35		7.29	
22	6.94	7.39	7.42	7.41			8.02	6.92	7.44	7.33	7.29	7.17
23			7.70	7.28			7.48	7.73	6.29	7.70	7.27	7.24
24	7.62	7.26	7.77	7.47	7.39	7.74	7.81	7.58	7.18		7.22	
25	7.04	7.06	7.70				7.74		7.60	7.20	7.27	7.12
26	7.01	7.28	7.43	7.70	7.68	7.52	7.75	7.39	7.24	7.38		7.23
27	7.07	7.68	7.30				7.47	7.77	7.71	7.65	7.23	7.33
28	7.84	7.65				7.74	7.73	7.67	7.44	7.19	7.30	7.25
29	7.73	7.50			7.21	7.12	7.88	7.69	7.53	7.57	7.33	7.89
30							7.75	7.53	7.74	7.25		7.31
31				7.66		7.46		7.52	7.60		7.33	
Average	7.33	7.46	7.53	7.40	7.55	7.70	7.59	7.59	7.47	7.25	7.27	7.25
Minimum	5.10	5.58	6.80	5.93	7.12	7.31	6.29	7.35	6.99	6.82	7.05	7.17
Maximum	7.84	7.86	7.81	7.95	7.98	8.02	8.02	7.87	7.87	7.51	7.89	7.30
Total	147	201	166	155	166	231	228	235	202	210	182	152
												Annual Summary
												7.46
												5.10
												8.02
												2275

**South Bay Wastewater Reclamation Plant
2016 Daily Influent Dry Weather Flows**

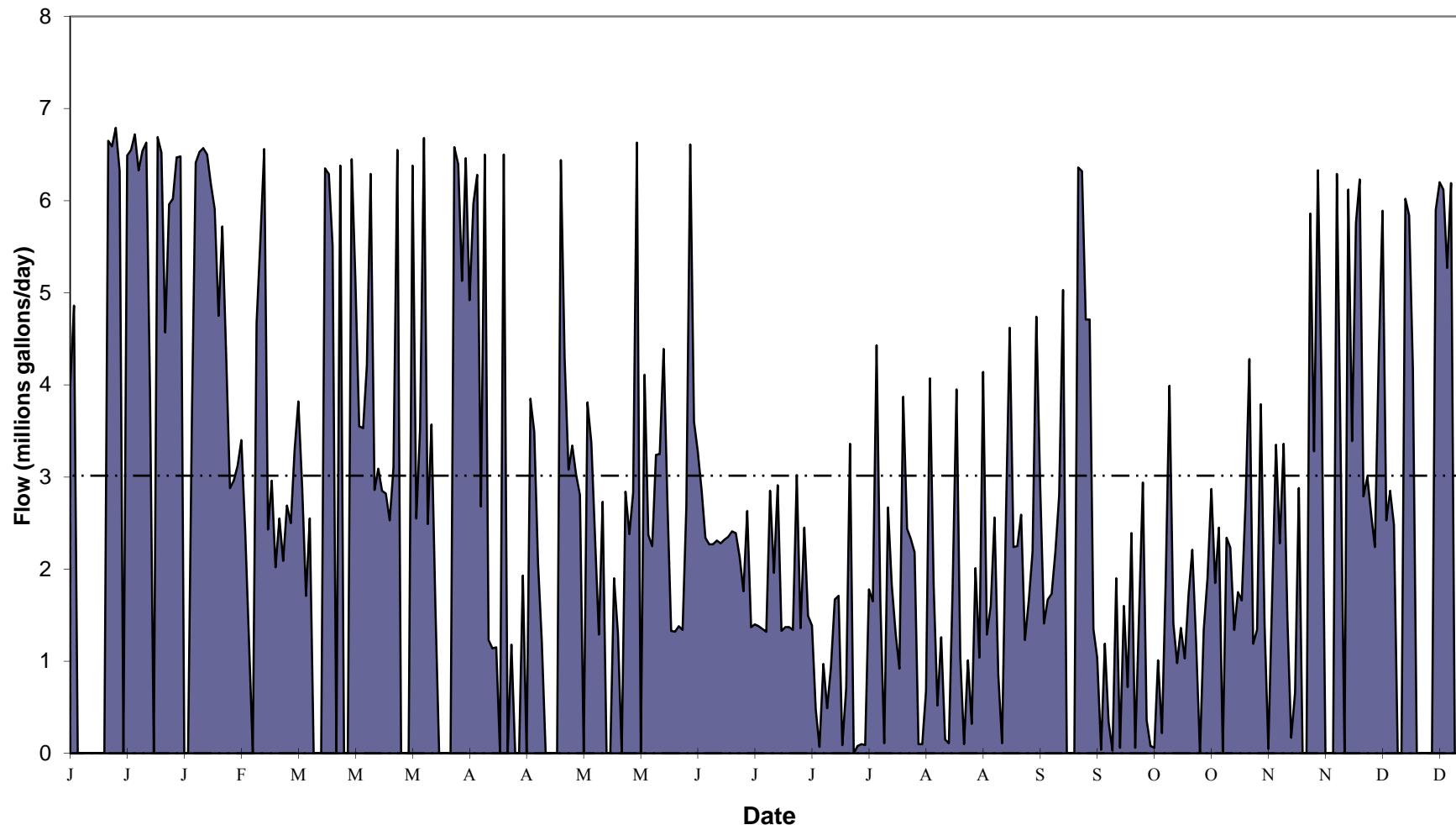


South Bay Water Reclamation Plant

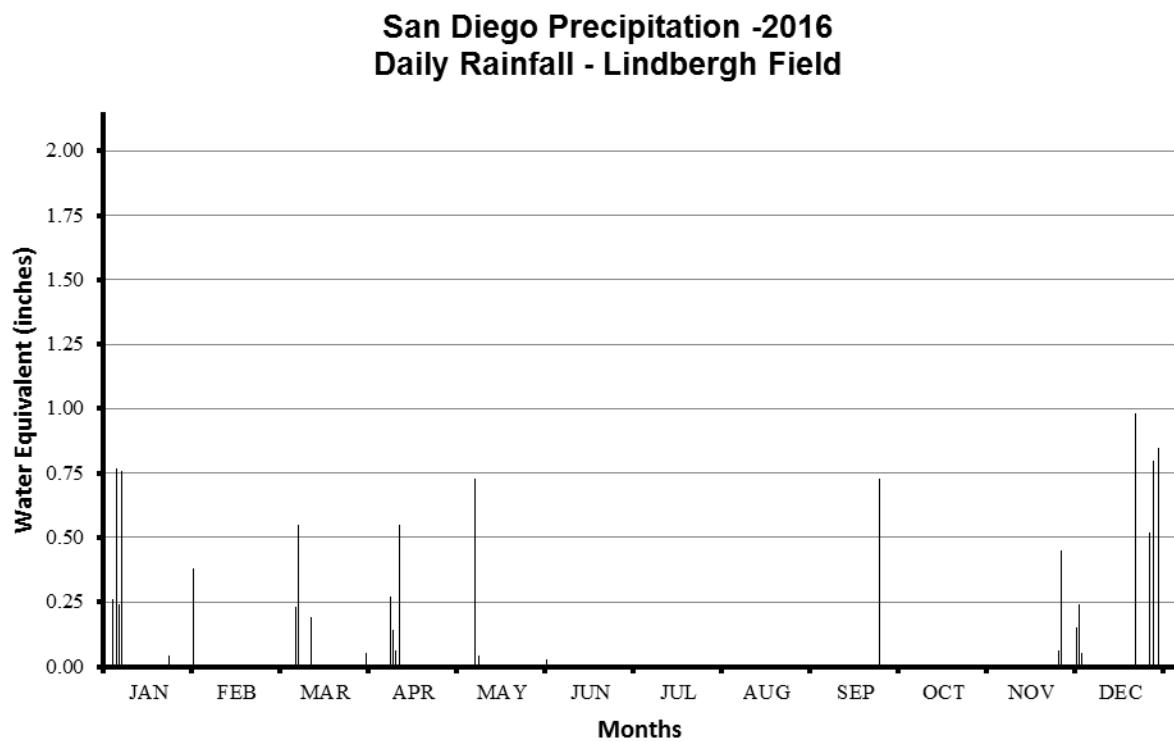
Effluent Dry Weather Flows (mgd) 2016

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3.95		3.82	2.55	3.85	2.37	1.35	1.66	0.85	0.03	2.23	
2	4.86	3.69	2.87	3.52	3.49	2.25	1.32	0.11	0.11	1.90	1.34	6.12
3		6.41	1.71	6.68	2.07	3.24	2.85	2.67	2.58	0.06	1.75	3.39
4		6.53	2.55	2.49	1.22	3.25	1.96	1.83	4.62	1.60	1.66	5.76
5		6.57		3.57		4.39	2.91	1.30	2.24	0.72	2.75	6.23
6		6.50		1.60		2.74	1.33	0.92	2.25	2.39	4.28	2.79
7		6.18				1.33	1.37	3.87	2.59	0.06	1.19	3.00
8		5.91	6.35			1.32	1.37	2.44	1.23	1.52	1.34	2.60
9		4.75	6.29		6.44	1.38	1.34	2.33	1.66	2.94	3.79	2.24
10		5.72	5.51		4.29	1.34	3.02	2.18	2.19	0.36	1.40	4.33
11	6.65	4.36		6.58	3.08	2.68	1.36	0.10	4.74	0.08	0.05	5.89
12	6.59	2.88	6.38	6.40	3.34	6.61	2.45	0.10	2.89	0.06	1.75	2.53
13	6.79	2.96		5.13	3.03	3.60	1.49	0.68	1.41	1.01	3.35	2.85
14	6.32	3.12		6.46	2.81	3.28	1.39	4.07	1.67	0.22	2.28	2.48
15		3.40	6.45	4.92		2.85	0.48	1.82	1.73	1.88	3.36	
16	6.49	2.43	5.12	5.97	3.81	2.34	0.07	0.52	2.19	3.99	1.46	
17	6.55	1.25	3.55	6.28	3.37	2.27	0.97	1.26	2.80	1.41	0.17	6.02
18	6.72		3.53	2.68	2.32	2.27	0.49	0.15	5.03	0.98	0.66	5.84
19	6.33	4.67	4.21	6.50	1.29	2.31	0.93	0.11		1.36	2.88	4.17
20	6.54	5.56	6.29	1.23	2.73	2.28	1.67	1.80		1.03		
21	6.63	6.56	2.86	1.14		2.32	1.71	3.95		1.72		
22	3.92	2.43	3.09	1.15		2.35	0.09	1.05	6.36	2.21	5.86	
23		2.96	2.85		1.90	2.41	0.71	0.10	6.32	1.21	3.28	
24	6.69	2.02	2.82	6.50	1.30	2.39	3.36	1.01	4.71		6.33	
25	6.52	2.55	2.53			2.13		0.32	4.71	1.34	3.89	5.90
26	4.57	2.09	3.10	1.18	2.84	1.76	0.08	2.01	1.35	1.90		6.20
27	5.96	2.69	6.55		2.38	2.63	0.10	1.04	1.04	2.87		6.12
28	6.02	2.50			2.83	1.37	0.09	4.14	0.04	1.85		5.27
29	6.47	3.29		1.93	6.63	1.40	1.78	1.29	1.19	2.45	6.29	6.19
30	6.48					1.38	1.65	1.60	0.34		3.31	
31			6.38		4.11		4.43	2.56		2.34		Annual Summary
Average	6.05	4.07	4.31	4.02	3.14	2.47	1.47	1.58	2.55	1.43	2.67	4.57
Minimum	3.92	1.25	1.71	1.14	1.22	1.32	0.07	0.10	0.04	0.03	0.05	2.24
Maximum	6.79	6.57	6.55	6.68	6.63	6.61	4.43	4.14	6.36	3.99	6.33	6.23
Total	121.1	110.0	95	84	69.1	74.2	44.1	49.0	68.8	41.5	66.7	95.9
												920

**South Bay Wastewater Reclamation Plant
2016 Daily Effluent to Ocean Dry Weather Flows**



B. Rain Days



San Diego Precipitation – 2016
Daily Rainfall – Lindbergh Field

First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
Date	Rain	Date	Rain	Date	Rain	Date	Rain
3-Jan-16	0.01	7-Apr-16	0.27	25-Jul-16	T	24-Oct-16	T
4-Jan-16	0.26	8-Apr-16	0.14	19-Sep-16	T	30-Oct-16	T
5-Jan-16	0.77	9-Apr-16	0.06	20-Sep-16	0.73	20-Nov-16	0.06
6-Jan-16	0.24	10-Apr-16	0.55	21-Sep-16	0.01	21-Nov-16	0.45
7-Jan-16	0.76	23-Apr-16	0.01			26-Nov-16	0.15
8-Jan-16	0.01	25-Apr-16	T			27-Nov-16	0.24
9-Jan-16	T	27-Apr-16	0.01			28-Nov-16	0.05
10-Jan-16	0.01	28-Apr-16	T			1-Dec-16	0.01
15-Jan-16	T	30-Apr-16	T			15-Dec-16	T
23-Jan-16	0.04	5-May-16	T			16-Dec-16	0.98
31-Jan-16	0.38	6-May-16	0.73			20-Dec-16	0.01
1-Feb-16	T	7-May-16	0.04			21-Dec-16	0.52
18-Feb-16	0.01	8-May-16	T			22-Dec-16	0.8
5-Mar-16	0.01	15-May-16	T			23-Dec-16	0.01
6-Mar-16	0.23	21-May-16	T			24-Dec-16	0.85
7-Mar-16	0.55	22-May-16	T			30-Dec-16	0.25
11-Mar-16	0.19	25-May-16	T			31-Dec-16	0.74
13-Mar-16	T	30-May-16	0.03				
14-Mar-16	T						
28-Mar-16	T						
29-Mar-16	T						
30-Mar-16	0.05						
TOTALS	3.52		1.84		0.74		5.12

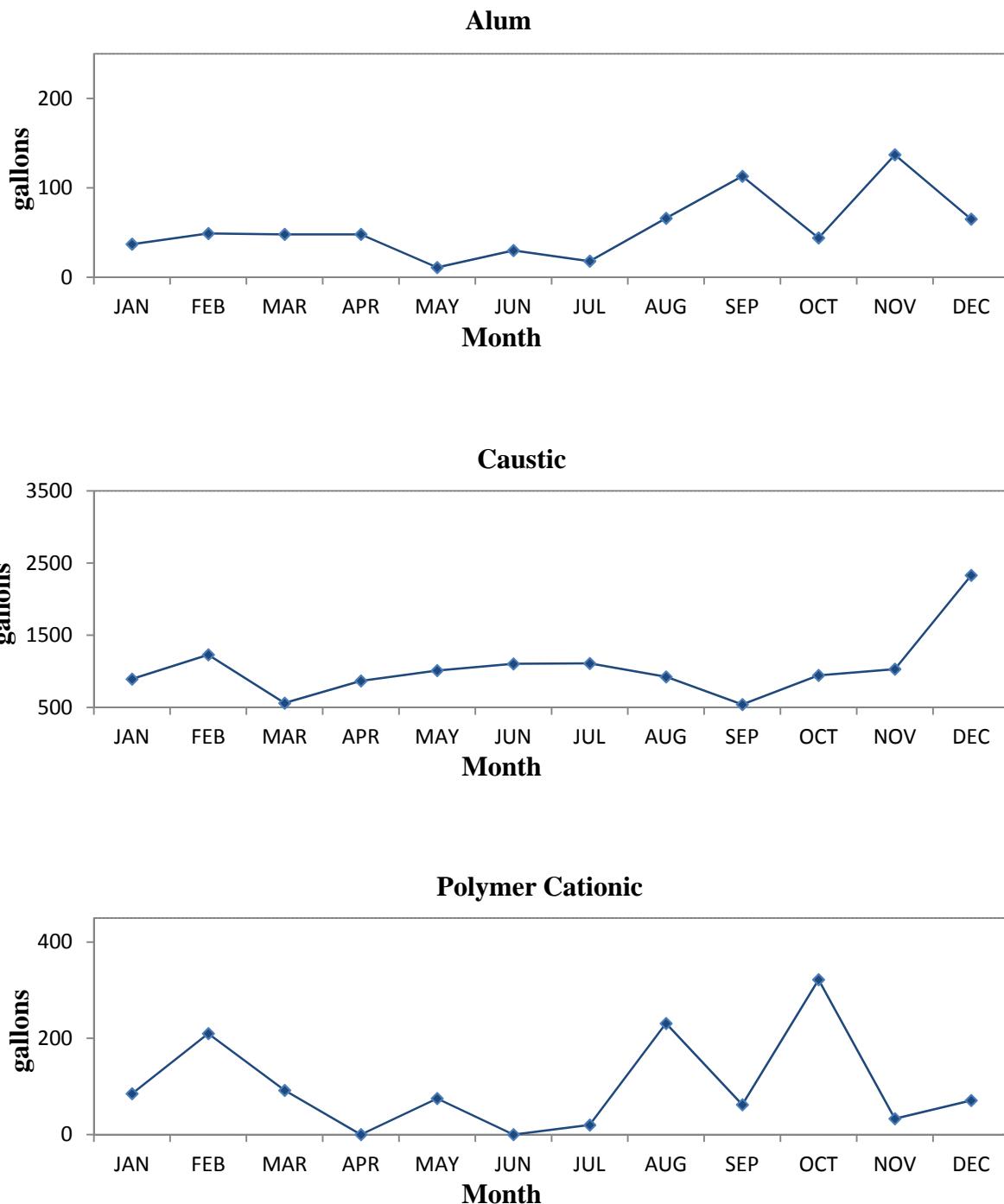
C. Chemical Report

South Bay Water Reclamation Plant - Annual Chemical Usage Report

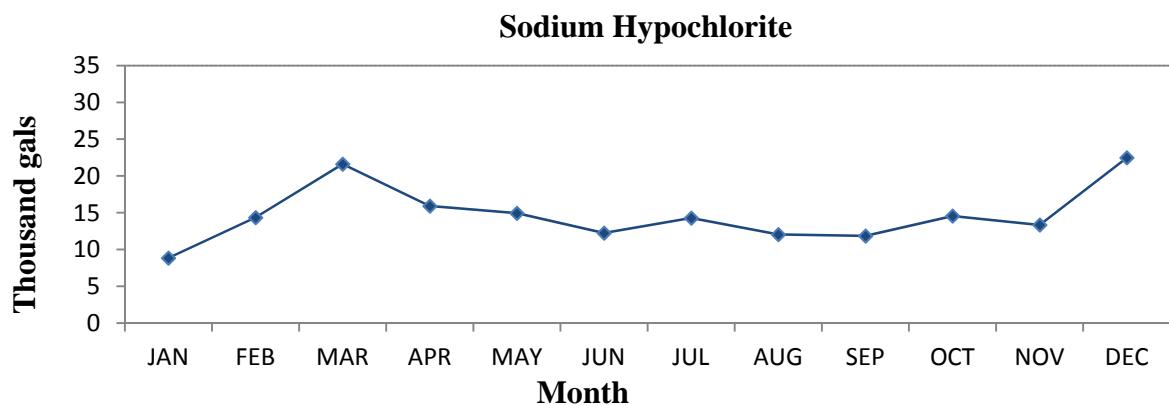
2016

Date	Hypochlorite Gallons	Alum Chloride Gallons	Polymer Cationic Gallons	Sodium Hydroxide Gallons
Jan-16	8,852	37	85	894
Feb-16	14,353	49	210	1,230
Mar-16	21,613	48	92	560
Apr-16	15,915	48	0	868
May-16	14,937	11	75	1,011
Jun-16	12,240	30	0	1,104
Jul-16	14,290	18	20	1,110
Aug-16	12,051	66	231	924
Sep-16	11,849	113	62	540
Oct-16	14,563	44	322	944
Nov-16	13,343	137	33	1,030
Dec-16	22,477	65	71	2330
avg	14,707	55.5	100.1	1,045
sum	176,483	666	1201	12,545

South Bay Water Reclamation Plant
2016 Monthly Chemical Usage



**South Bay Water Reclamation Plant
2016 Monthly Chemical Usage**



D. Facilities Out of Service Report

**2016 SBWRP FACILITIES OUT OF SERVICE REPORT
FACILITIES OOS BY DATE**

Barscreens

	FROM	TO	REASON
Barscreen 1	1/12/2016	12/31/2016	Screw compactor broken. On order.

Primary Sedimentation

	FROM	TO	REASON
Pri Sed Tank 1	1/12/2016	1/12/2016	Drain valve stuck half way. Troubleshoot and repair
Pri Sed Tank 1	3/5/2016	3/5/2016	Call out maintenance crew for shear pin failure.
Pri Sed Tank 1	11/2/2016	11/7/2016	Replace drive chain, flight chain and stainless steel grease line.
Pri Sed Tank 1	11/8/2016	2/25/2017	Remove and replace scum trough and associated hardware.
Pri Sed Tank 1	11/8/2016	2/24/2017	Welder fabricate bearings for scum trough. Contact Leo Wilson to coordinate.
Pri Sed Tank 1	12/7/2016	12/19/2016	Stainless steel sampling line needs to be extended 6' longer towards the floor and the valve needs to be lowered with it for easier opening and closing of the line during sample grabs. Talk to D Evans regarding placement.
Pri Sed Tank 2	3/30/2016	3/30/2016	Shear pin fail. Troubleshoot and repair.
Pri Sed Tank 2	9/27/2016	6/8/2017	Primary Tank #1 Draw Off Valve 10-MOV-7041 goes into Gen Fail went put in Auto. We need this Valve in Auto for new strategy.
Pri Sed Tank 2	11/8/2016	7/31/2017	Remove and replace scum trough and associated hardware.
Pri Sed Tank 2	11/8/2016	3/24/2017	Welder fabricate bearings for scum trough. Contact Leo Wilson to coordinate.
Pri Sed Tank 2	12/12/2016	12/4/2016	PSL Tank 2 draw off valve 10 MOV 7041 will not operate in strategy. Please troubleshoot.
Pri Sed Tank 2	5/8/2017	5/16/2017	Shorten shaft. Shaft is marked. Jose Sandoval has additional information, if necessary.
Pri Sed Tank 3	1/5/2016	5/25/2016	VALVE 10-MOV-7043 keeps going into Gen Fail and will not allow the strategy to run.
Pri Sed Tank 3	9/15/2016	9/27/2016	Wash down tank and prep for operation
Pri Sed Tank 3	9/19/2016	9/21/2016	Widen keyway on spiral gear to 3/8 wide. Widen bore hole to fit shaft provided.
Pri Sed Tank 4	9/14/2016	9/15/2016	Wash down and clean debris from Primary Tank#4.
Pri Sed Tank 5	1/11/2016	2/10/2016	Fabricate one of each scum pipe bearing as per drawing in 316 S/S (DWG No. 9800241-BRG12).

Pri Sed Tank 5	1/12/2016	4/12/2016	Fabricate scum trough for tank #5 as per drawing
Pri Sed Tank 5	2/2/2016	4/12/2016	Chain is worn out and needs replacement.
Pri Sed Tank 5	2/17/2016	8/3/2016	Troubleshoot and repair scum trough actuator.

Aeration Basins

	FROM	TO	REASON
Aer. Basin 1	8/1/2016	8/26/2016	Flow Meter not reading correctly. Seems to be reading much lower than actual value.
Aer. Basin 1	12/20/2016	12/21/2016	Install the 4 post anchors and 2 instrument stands in aeration basin 1 and 4. This is for the ammonia analyzer DO control system. Robert Rodriguez has been shown the parts and installation spot in the aeration area.
Aer. Basin 1	4/7/2017	10/21/2017	Cut floor plates and install hinges for probe access
Aer. Basin 2	6/21/2016	8/15/2016	Air Flow Control Valve keeps going into Gen Fail. 15-FCV-320
Aer. Basin 2	7/5/2016	7/5/2016	Please clean grease off the indicator cap and determine source of leak.
Aer. Basin 2	8/1/2016	8/12/2016	Flow Meter not reading correctly. In Bad quality.
Aer. Basin 3	3/3/2016	3/3/2016	Air valve will not go to DCS, stays in Local, please resolve issue.
Aer. Basin 3	7/5/2016	7/5/2016	Please clean grease off the indicator cap and determine source of leak.
Aer. Basin 3	11/1/2016	11/4/2016	ML recycle pump #3 fail to start please check.
Aer. Basin 4	5/26/2016	9/12/2016	A-BASIN 4 Prepare basin to place online. Verify all mixers are installed and working properly. Also, test air flow actuator to verify proper operation.
Aer. Basin 5	5/26/2016	6/1/2016	A-BASIN 5 Prepare basin to place online. Verify all mixers are installed and working properly. Also, test air flow actuator to verify proper operation.
Aer. Basin 5	7/5/2016	7/5/2016	Please clean grease off the indicator cap and determine source of leak.
Aer. Basin 6	2/10/2016	1/9/2017	Repair / Replace diffusers.
Aer. Basin 6	7/21/2016	9/12/2016	AERATION BASIN 6 verify all equipment (mixers, DO sensors, actuators, etc.) Needed to place tank online, order parts, and prepare tank to go online.
Aer. Basin 7	7/5/2016	7/5/2016	Please clean grease off the indicator cap and determine source of leak.

Secondary Clarifiers

	FROM	TO	REASON
Sec. Clar. 1	3/15/2016	5/10/2016	Primary Scum Trough seems to be working fine but keeps alarming and failing sequence. Please troubleshoot.
Sec. Clar. 1	3/30/2016	3/30/2016	Please adjust trough tilt, not getting low enough on forward tilt. Also please lube.
Sec. Clar. 1	10/31/2016	10/31/2016	Inspect and repair tipping trough.
Sec. Clar. 1	11/2/2016	12/22/2016	Trough tips in one direction only. Please repair so that trough moves in both directions.
Sec. Clar. 1	11/2/2016	11/2/2016	Adjust gears so that trough operates normally.
Sec. Clar. 3	2/8/2016	2/10/2016	Secondary Tank #3 - tripping strategy when it's supposed to scum.
Sec. Clar. 3	4/4/2016	4/27/2016	Need actuator adjusted, not submerging when tilted. Troubleshoot and repair.
Sec. Clar. 4	12/29/2016	12/29/2016	Adjust fwd. /reverse tilt.
Sec. Clar. 4	12/2/2016	12/8/2016	While performing quarterly sludge drive 16-48076, we were unable to free the hub from the drive disk. Please free hub.
Sec. Clar. 5	4/11/2016	5/10/2016	Secondary Scum trough #5 keeps failing in reverse. The trough is scumming correctly but it keeps failing the sequence and need to be reset each time the strategy runs.
Sec. Clar. 5	12/20/2016	1/9/2017	Secondary #5 - Shear Pin Failure.
Sec. Clar. 6	1/6/2016	1/6/2016	Secondary #6 Sum - Actuator keeps causing the sequence to fail. It seems like it is not scumming when called to. Actuator operates fine locally.
Sec. Clar. 6	10/6/2016	12/22/2016	Scum collector not tilting in the open of south direction enough to collect scum, needs to be adjusted. Please inspect and repair as needed.
Sec. Clar. 7	11/7/2016	11/8/2016	Scum trough will not rotate. Please investigate and repair as necessary
Sec. Clar. 7	11/9/2016	12/1/2016	The worm gear, though moving, fails to engage the drum gear on the trough and the trough remains stationary. The issue appears to be mechanical rather than electrical. Actuator is operating properly, The shaft and worm gear are moving freely in both fwd. & rev. Please investigate and repair as necessary.
Sec. Clar. 7	11/10/2016	5/16/2017	Reset limits on tipping trough. Trough only tilts north but not south.
Sec. Clar. 7	11/22/2016	11/26/2016	Worm gear needs to be replaced. Saddle was replaced without new worm gear. Limits will not adjust properly.
Sec. Clar. 8	2/8/2016	2/23/2016	Actuator failed in forward tilt, seems to be locked up, please replace/repair.
Sec. Clar. 8	2/10/2016	2/22/2016	Remove, check, inspect and repair MOV.

Sec. Clar. 8	4/14/2016	5/16/2016	Shear - pin fail - please repair or replace as necessary
Sec. Clar. 8	5/6/2016	5/6/2016	trough needs to be adjusted,
Sec. Clar. 8	6/29/2016	7/11/2016	Adjust Scum Trough
Sec. Clar. 8	10/11/2016	3/28/2017	Troubleshoot and repair tipping trough
Sec. Clar. 8	1/4/2016	7/12/2016	Secondary #8 - Shear Pin failure
Sec. Clar. 8	12/28/2016	12/28/2016	SECONDARY #8- Sludge Drive - no power. WR 16-003127
Sec. Clar. 9	10/19/2016	12/29/2016	Scum actuator repeatedly fails in the up position. repair as necessary

Tertiary Filters

	FROM	TO	REASON
Ter. Filter 1	6/2/2016	9/1/2016	Filter #1 Influent Valve - Metal cover around base of valve actuator is rusted and dangerous. Welder please repair.
Ter. Filter 2	6/2/2016	9/1/2016	Filter #2 Influent Valve - Metal cover around base of valve actuator is rusted and dangerous. WR 16-001357
Ter. Filter 3	6/2/2016	9/1/2016	Filter #3 Influent Valve - Metal cover around base of valve actuator is rusted and dangerous.
Ter. Filter 3	6/22/2016	6/23/2016	Filter #3 Drain Valve Gen Failing causing backwash strategy to fail. Near the closed position it feels like it binds up a bit. Failing to Open and Failing to Close alarms coming up.
Ter. Filter 4	11/1/2016	11/1/2016	We keep getting a FILTER 4 FLI V - GEN FAIL alarm. Please troubleshoot and correct. 25-MOV-242
Ter. Filter 4	11/1/2016	11/3/2016	Troubleshoot and repair Motorized Valve
Ter. Filter 5	6/2/2016	9/1/2016	Filter #5 Drain Valve - Metal cover around base of valve actuator is rusted and dangerous.
Ter. Filter 6	3/11/2016	3/11/2016	Lower gullet valve (25-mov-267) has a gen-fail that will not clear. Please investigate and repair as necessary
Ter. Filter 7	2/8/2016	2/8/2016	Filter #7 - Lower Gullet Valve 25-MOV-277
Ter. Filter 7	2/12/2016	9/20/2016	Filter #7 - Lower Gullet Valve 25-MOV-277 The option to make a sub-work order was not available in my view. Sub-work order needed for the following: To pull new Blue 14 AWG. NOTE: MOV is in operation but wire needs replacement to bring everything back to original spec as required. RPC 2/8/2015
Ter. Filter 7	3/11/2016	3/11/2016	Lower gullet valve (25mov277) has a gen-fail that will not clear. Investigate and repair as necessary
Ter. Filter 7	6/12/2016	6/12/2016	Valves 272-274-275 on Filter 7, 262-264-265 on Filter 6 and valves 252-254-255 for Filter 5 all in

			Gen Fail and will not reset, Called out Electricians.
Ter. Filter 7	6/13/2016	6/13/2016	Run new wiring using spare conduits. (Valves 272-274-275 on filter 7, 262-264-265 on filter 6 and valves 252-254-255 for filter 5 all in gen fail and will not reset, called out electricians.)
Ter. Filter 7	6/13/2016	6/28/2016	Run new wiring through spare conduit. See emergency work order # 16-25826. Valves 272-274-275 on filter 7, 262-264-265 on filter 6 and valves 252-254-255 for filter 5 all in gen fail and will not reset, called out electricians.
Ter. Filter 7	12/12/2016	1/4/2017	Filter #7 Drain Valve 25-MOV-274 fails to close, is difficult to operate by hand and binds up.

FACILITIES OOS BY PROCESS

Bar Screens

	FROM	TO
Barscreen 1	1/12/2016	12/31/2016

Primary Sedimentation

	FROM	TO
Pri Sed Tank 1	1/12/2016	1/12/2016
	3/5/2016	3/5/2016
	11/2/2016	11/7/2016
	11/8/2016	2/25/2017
	11/8/2016	2/24/2017
	12/7/2016	12/19/2016
Pri Sed Tank 2	3/30/2016	3/30/2016
	9/27/2016	6/8/2017
	11/8/2016	7/31/2017
	11/8/2016	3/24/2017
	12/12/2016	12/4/2016
	5/8/2017	5/16/2017
Pri Sed Tank 3	1/5/2016	5/25/2016
	9/15/2016	9/27/2016
	9/19/2016	9/21/2016
Pri Sed Tank 4	9/14/2016	9/15/2016
Pri Sed Tank 5	1/11/2016	2/10/2016
	1/12/2016	4/12/2016
	2/2/2016	4/12/2016
	2/17/2016	8/3/2016

Aeration Basins

	FROM	TO
Aer. Basin 1	8/1/2016	8/26/2016
	12/20/2016	12/21/2016
	4/7/2017	10/21/2017
Aer. Basin 2	6/21/2016	8/15/2016
	7/5/2016	7/5/2016
	8/1/2016	8/12/2016
Aer. Basin 3	3/3/2016	3/3/2016
	7/5/2016	7/5/2016
	11/1/2016	11/4/2016
Aer. Basin 4	5/26/2016	9/12/2016
Aer. Basin 5	5/26/2016	6/1/2016
	7/5/2016	7/5/2016
Aer. Basin 6	2/10/2016	1/9/2017
	7/21/2016	9/12/2016
Aer. Basin 7	7/5/2016	7/5/2016

Secondary Clarifiers

	FROM	TO
Sec. Clar. 1	3/15/2016	5/10/2016
	3/30/2016	3/30/2016
	10/31/2016	10/31/2016
	11/2/2016	12/22/2016
	11/2/2016	11/2/2016
Sec. Clar. 3	2/8/2016	2/10/2016
	4/4/2016	4/27/2016
Sec. Clar. 4	12/29/2016	12/29/2016
	12/2/2016	12/8/2016
Sec. Clar. 5	4/11/2016	5/10/2016
	12/20/2016	1/9/2017
Sec. Clar. 6	1/6/2016	1/6/2016
	10/6/2016	12/22/2016
Sec. Clar. 7	11/7/2016	11/8/2016
	11/9/2016	12/1/2016
	11/10/2016	5/16/2017
	11/22/2016	11/26/2016
Sec. Clar. 8	2/8/2016	2/23/2016
	2/10/2016	2/22/2016
	4/14/2016	5/16/2016
	5/6/2016	5/6/2016
	6/29/2016	7/11/2016
	10/11/2016	3/28/2017
	1/4/2016	7/12/2016
	12/28/2016	12/28/2016

Sec. Clar. 9	10/19/2016	12/29/2016
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Tertiary Filter

	FROM	TO
Ter. Filter 1	6/2/2016	9/1/2016
Ter. Filter 2	6/2/2016	9/1/2016
Ter. Filter 3	6/2/2016	9/1/2016
	6/22/2016	6/23/2016
Ter. Filter 4	11/1/2016	11/1/2016
	11/1/2016	11/3/2016
Ter. Filter 5	6/2/2016	9/1/2016
Ter. Filter 6	3/11/2016	3/11/2016
Ter. Filter 7	2/8/2016	2/8/2016
	2/12/2016	9/20/2016
	3/11/2016	3/11/2016
	6/12/2016	6/12/2016
	6/13/2016	6/13/2016
	6/13/2016	6/28/2016
	12/12/2016	1/4/2017

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IV. Combined Ocean Outfall Data

As of 2016 Combine Outfall (IWTP)
samples are no longer analyzed;
therefore no data is available.

V. Ocean Monitoring Data Summary

- A. Ocean Sediment Chemistry Data Tables.
- B. Fish Tissue Chemistry Data Tables.
- C. Seawaters Chemistry Data Tables.

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Maps, with sampling sites labeled, are included in this section.

Summary of Sampling Technique⁶:

Sediments

Benthic sediment is obtained using a 0.1m², chain-rigged Tandem van Veen grab sampler deployed from a City ocean monitoring vessel. Sediment samples are collected from the top 2 cm of an undisturbed grab surface and then placed into an appropriately labeled sample container. Subsamples are placed on ice and subsequently shipped to the laboratory for chemical analysis. Preservatives are used in accordance with the requirements of 40 CFR and our Quality Assurance Plan. Sediment concentrations are based on the dry weight of a sample.

Fish Tissue

Several species of flat fish and rock fish are taken by Otter trawls and/or rig fishing. The dissected muscle and liver tissues are frozen and delivered to the laboratory for analysis. Tissue samples are kept frozen until prepared for analyses.

⁶ For complete description of the sampling protocols, dissections, equipment, vessels, etc. related to the sampling of ocean sediments and fish, please refer to the City of San Diego, Annual Receiving Waters Monitoring Report 2011

A. Ocean Sediment Chemistries.

The data for Biochemical Oxygen Demand (BOD) and Total Volatile Solids (TVS), all measures of organic enrichment, as well as total sulfides and temperature, are all presented by quarter and averaged. The quarterly particle size analysis does not lend itself to summarization and each quarter's analysis is presented separately. For the data from all the metals, cyanide, radiation and all of the numerous organic priority pollutant analyses (except dioxin, presented by quarter) only the average of the four quarters is presented here; the values for each quarter has been reported in the Quarterly Monitoring Reports.

Station

I-1	I-12	I-23
I-2	I-13	I-27
I-3	I-14	I-28
I-4	I-15	I-29
I-6	I-16	I-30
I-7	I-18	I-31
I-8	I-20	I-33
I-9	I-21	I-34
I-10	I-22	I-35

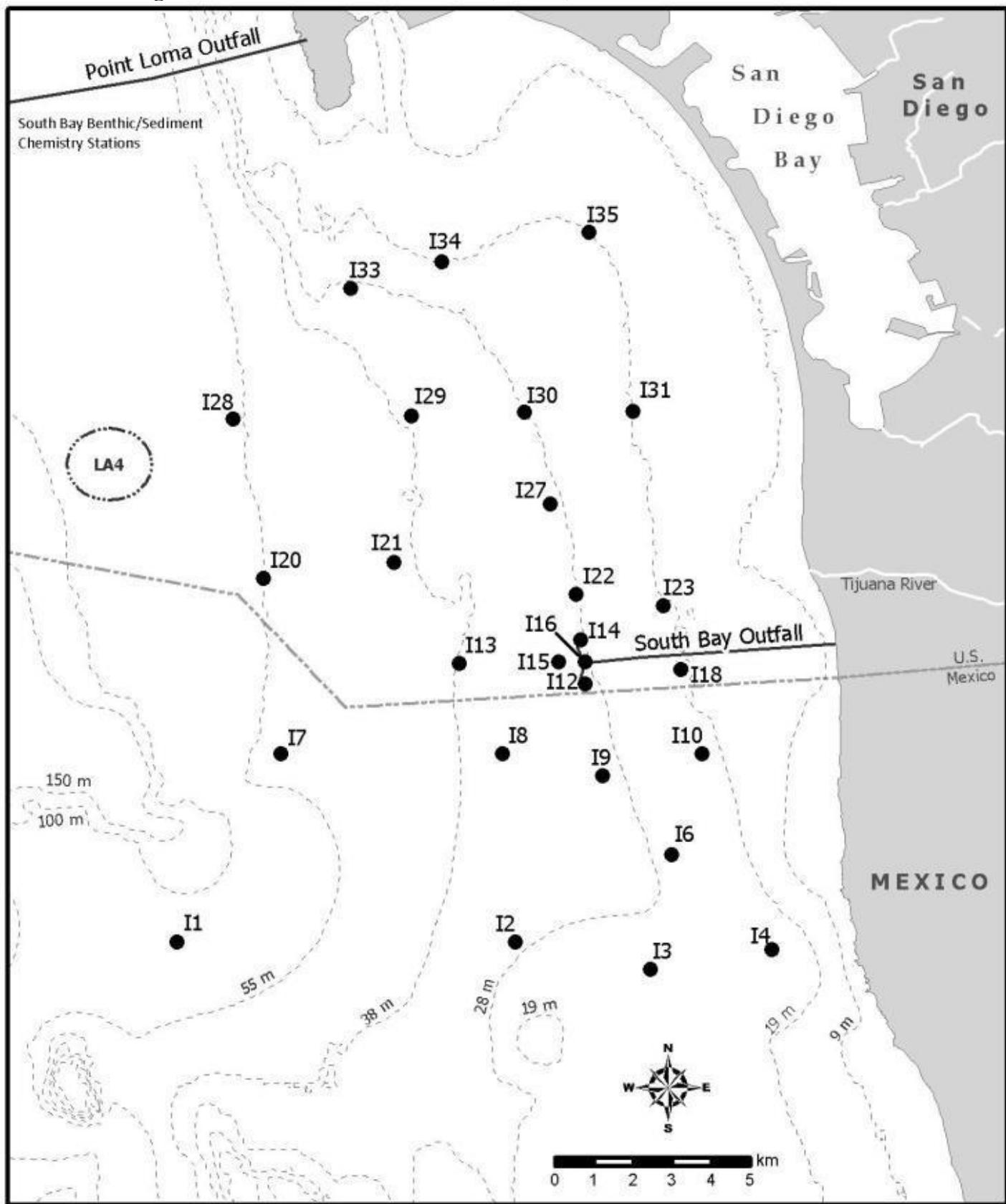
2016 Random Stations

Station	Sample Date	Station	Sample Date	Station	Sample Date
8501	07-Jul-16	8516	14-Jul-16	8530	13-Jul-16
8502	12-Jul-16	8517	28-Jul-16	8531	13-Jul-16
8503	07-Jul-16	8518	13-Jul-16	8532	18-Jul-16
8504	07-Jul-16	8519	19-Jul-16	8533	19-Jul-16
8505	12-Jul-16	8520	19-Jul-16	8534	20-Jul-16
8506	06-Jul-16	8521	27-Jul-16	8536	20-Jul-16
8507	07-Jul-16	8522	19-Jul-16	8537	20-Jul-16
8508	06-Jul-16	8523	19-Jul-16	8538	20-Jul-16
8509	12-Jul-16	8524	13-Jul-16	8539	20-Jul-16
8510	27-Jul-16	8525	13-Jul-16	8540	20-Jul-16
8512	27-Jul-16	8526	19-Jul-16	8542	14-Jul-16
8513	12-Jul-16	8527	27-Jul-16	8547	20-Jul-16
8514	06-Jul-16	8528	13-Jul-16		
8515	12-Jul-16	8529	19-Jul-16		

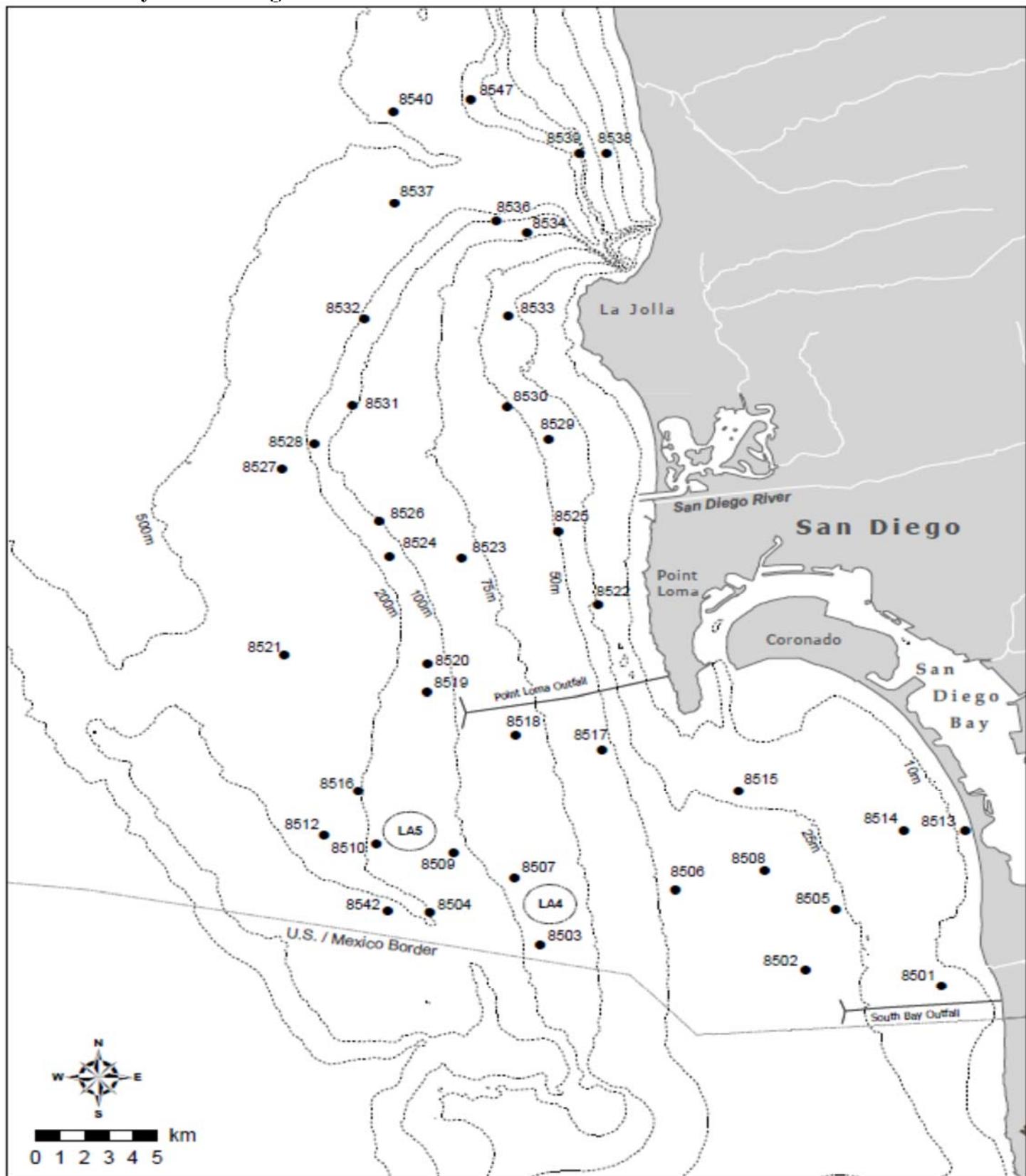
2016 Random Stations H

Station	Sample Date	Station	Sample Date
8501-H	07-Jul-16	8526-H	19-Jul-16
8502-H	12-Jul-16	8527-H	27-Jul-16
8503-H	07-Jul-16	8529-H	19-Jul-16
8505-H	12-Jul-16	8533-H	19-Jul-16
8507-H	07-Jul-16	8536-H	20-Jul-16
8510-H	27-Jul-16	8539-H	20-Jul-16
8512-H	27-Jul-16		
8513-H	12-Jul-16		
8515-H	12-Jul-16		
8517-H	28-Jul-16		
8520-H	19-Jul-16		
8521-H	27-Jul-16		
8522-H	19-Jul-16		
8523-H	19-Jul-16		

SBWRP Regular Fixed Grid Ocean sediment (benthic) stations



2016 Randomly Selected Regional Stations



SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - International Stations

Sulfide and Total Volatile Solids Analysis

Annual 2016

Source		I-1	I-2	I-3	I-4	I-6	I-7	I-8	I-9	I-10
Date		2016	2016	2016	2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg
Sulfides-Total	.14 MG/KG	1.45	0.53	0.22	0.22	0.28	<0.14	0.75	4.79	4.40
Total Volatile Solids	.11 WT%	0.85	0.40	0.40	0.25	0.45	0.45	0.45	1.15	0.70
Source		I-12	I-12-H	I-13	I-14	I-14-H	I-15	I-15-H	I-16	I-16-H
Date		2016	2016	2016	2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg
Sulfides-Total	.14 MG/KG	3.57	1.25	0.21	11.70	1.33	2.97	0.74	1.48	1.70
Total Volatile Solids	.11 WT%	0.73	0.60	0.45	1.00	1.00	0.60	0.40	0.45	0.70
Source		I-18	I-20	I-21	I-22	I-23	I-27	I-28	I-29	I-30
Date		2016	2016	2016	2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg
Sulfides-Total	.14 MG/KG	6.33	0.35	0.23	7.76	2.88	3.75	6.78	4.39	3.81
Total Volatile Solids	.11 WT%	0.65	0.30	0.50	0.80	0.80	4.55	1.35	1.45	1.05
Source		I-31	I-33	I-34	I-35					
Date		2016	2016	2016	2016					
Analyte	MDL Units	Avg	Avg	Avg	Avg					
Sulfides-Total	.14 MG/KG	3.60	3.85	0.75	25.90					
Total Volatile Solids	.11 WT%	0.70	1.15	0.55	1.35					

ND=not detected

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL- International Stations

Grain Size
(all values are in percent distribution)

Annual 2016

Source:	I-1	I-1	I-2	I-2	I-3	I-3	I-4	
Sample ID:	P832868	P874681	P832898	P874694	P832914	P874708	P874715	
Analyte	Units	11-JAN-2016	05-JUL-2016	11-JAN-2016	05-JUL-2016	11-JAN-2016	05-JUL-2016	05-JUL-2016
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.101	0.000	0.000	0.000	0.000	0.000	0.000
>3.9 to 7.8		1.970	1.850	0.000	0.126	0.000	0.000	0.000
>7.8 to 15.6		2.420	2.540	0.000	0.878	0.000	0.000	0.000
>15.6 to 31		0.810	0.968	0.000	0.533	0.000	0.000	0.000
>31 to 62.5		3.050	2.950	0.053	0.177	0.000	0.000	0.000
>62.5 to 125		40.300	32.300	2.380	2.470	0.441	0.745	0.357
>125 to 250		46.700	51.000	27.800	30.700	10.200	19.600	3.810
>250 to 500		4.680	8.290	57.500	56.200	54.600	64.500	41.400
>500 to 1000		0.000	0.084	12.200	8.910	32.100	14.700	49.900
>1000 to 2000		0.000	0.000	0.077	0.049	2.650	0.440	4.550
>2000*		ND						
Totals:		100.031	99.982	100.010	100.043	99.991	99.985	100.017

Source:	I-6	I-7	I-7	I-8	I-8	I-9	I-9	
Sample ID:	P874719	P832929	P874727	P832933	P874730	P832938	P874735	
Analyte	Units	05-JUL-2016	11-JAN-2016	05-JUL-2016	11-JAN-2016	05-JUL-2016	11-JAN-2016	05-JUL-2016
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.000	0.000	0.000	0.000	0.000	0.118	0.125
>3.9 to 7.8		0.000	0.000	0.280	0.006	0.132	1.490	2.080
>7.8 to 15.6		0.000	0.000	1.020	0.572	0.866	1.680	2.900
>15.6 to 31		0.000	0.000	0.601	0.167	0.367	1.110	1.660
>31 to 62.5		0.162	0.000	0.412	0.201	0.167	15.300	15.300
>62.5 to 125		1.530	0.000	0.958	2.180	1.870	65.000	62.600
>125 to 250		11.800	1.610	2.730	17.000	17.100	14.600	14.600
>250 to 500		57.300	20.000	15.800	58.300	57.200	0.744	0.743
>500 to 1000		27.600	70.600	62.800	20.600	21.200	0.000	0.000
>1000 to 2000		1.590	7.850	15.300	0.894	1.170	0.000	0.000
>2000*		ND	ND	ND	1.300	ND	ND	ND
Totals:		99.982	100.060	99.901	101.220	100.072	100.042	100.008

Source:	I-10	I-10	I-12	I-12	I-13	I-13	I-14	
Sample ID:	P832873	P874683	P832877	P875944	P833734	P875640	P832882	
Analyte	Units	11-JAN-2016	05-JUL-2016	11-JAN-2016	07-JUL-2016	12-JAN-2016	06-JUL-2016	11-JAN-2016
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.142	0.129	0.000	0.000	0.000	0.000	0.135
>3.9 to 7.8		1.830	1.700	1.090	1.150	0.000	0.000	2.190
>7.8 to 15.6		1.340	1.270	1.220	1.530	0.000	0.000	2.130
>15.6 to 31		0.000	0.000	0.666	0.857	0.000	0.000	0.921
>31 to 62.5		5.220	5.280	6.730	5.650	0.000	0.000	11.900
>62.5 to 125		63.900	65.100	37.500	31.000	0.408	0.034	60.000
>125 to 250		25.600	24.700	32.800	37.900	5.790	2.940	20.700
>250 to 500		2.010	1.830	17.500	20.100	47.200	37.200	2.060
>500 to 1000		0.000	0.000	2.420	1.870	42.100	53.100	0.000
>1000 to 2000		0.000	0.000	0.000	0.000	4.470	6.680	0.000
>2000*		ND	ND	ND	ND	1.400	ND	ND
Totals:		100.042	100.009	99.926	100.057	101.368	99.954	100.036

*=A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL- International Stations

Grain Size
(all values are in percent distribution)

Annual 2016

Source:	I-14	I-15	I-15	I-16	I-18	I-18	I-20	
Sample ID:	P875948	P832888	P875955	P875958	P832892	P874688	P832903	
Analyte	Units	07-JUL-2016	11-JAN-2016	07-JUL-2016	07-JUL-2016	11-JAN-2016	05-JUL-2016	11-JAN-2016
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.172	0.000	0.000	0.000	0.267	0.123	0.000
>3.9 to 7.8		2.460	0.490	0.138	0.569	1.070	1.390	0.125
>7.8 to 15.6		2.020	1.270	0.899	1.370	0.402	0.770	0.616
>15.6 to 31		0.761	0.866	0.693	0.836	0.000	0.000	0.000
>31 to 62.5		12.500	3.380	1.210	3.400	7.080	6.890	0.000
>62.5 to 125		63.200	14.500	3.280	25.100	72.000	70.900	0.361
>125 to 250		17.200	34.000	16.900	45.300	18.400	18.700	3.080
>250 to 500		1.660	39.800	60.400	21.700	0.792	1.200	13.600
>500 to 1000		0.000	5.680	15.900	1.640	0.000	0.000	64.200
>1000 to 2000		0.000	0.000	0.465	0.000	0.000	0.000	18.000
>2000*		ND						
Totals:		99.973	99.986	99.885	99.915	100.011	99.973	99.982

Source:	I-20	I-21	I-21	I-22	I-22	I-23	I-27	
Sample ID:	P874700	P831080	P875645	P832905	P875648	P874703	P833753	
Analyte	Units	05-JUL-2016	04-JAN-2016	06-JUL-2016	11-JAN-2016	06-JUL-2016	05-JUL-2016	12-JAN-2016
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.000	0.000	0.000	0.000	0.132	0.136	0.293
>3.9 to 7.8		0.000	0.000	0.256	1.490	2.110	1.950	1.980
>7.8 to 15.6		0.000	0.000	0.950	1.850	2.120	1.560	1.320
>15.6 to 31		0.000	0.000	0.367	0.982	0.920	0.123	0.236
>31 to 62.5		0.000	0.000	0.305	7.230	10.400	6.460	11.400
>62.5 to 125		0.694	0.235	1.030	38.100	57.600	67.500	70.000
>125 to 250		5.610	5.110	3.360	35.400	23.300	20.800	14.100
>250 to 500		21.100	41.900	31.700	13.700	3.350	1.410	0.648
>500 to 1000		62.800	47.700	55.400	1.200	0.000	0.000	0.000
>1000 to 2000		9.770	5.110	6.630	0.000	0.000	0.000	0.000
>2000*		ND						
Totals:		99.974	100.055	99.998	99.952	99.932	99.939	99.977

Source:	I-27	I-28	I-29	I-29	I-30	I-30	I-31	
Sample ID:	P875654	P875660	P833880	P875618	P833765	P875620	P833769	
Analyte	Units	06-JUL-2016	06-JUL-2016	12-JAN-2016	06-JUL-2016	12-JAN-2016	06-JUL-2016	12-JAN-2016
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.291	0.354	0.126	0.000	0.277	0.119	0.159
>3.9 to 7.8		2.320	3.500	1.820	1.760	2.180	1.890	1.630
>7.8 to 15.6		1.850	4.380	2.770	3.570	1.890	2.230	0.740
>15.6 to 31		0.684	2.810	2.850	3.260	0.821	1.180	0.000
>31 to 62.5		11.700	13.500	20.900	21.000	13.000	14.100	4.760
>62.5 to 125		68.400	24.100	41.600	53.100	67.400	66.500	71.700
>125 to 250		14.000	7.750	15.900	16.700	13.800	13.400	19.800
>250 to 500		0.684	8.610	9.310	1.580	0.665	0.602	1.210
>500 to 1000		0.000	27.300	4.600	0.000	0.000	0.000	0.000
>1000 to 2000		0.000	7.710	0.220	0.000	0.000	0.000	0.000
>2000*		ND						
Totals:		99.929	100.014	100.096	100.970	100.033	100.021	99.999

*=A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL- International Stations

Grain Size
(all values are in percent distribution)

Annual 2016

Source:	I-31	I-33	I-33	I-34	I-35	I-35	
Sample ID:	P875666	P833777	P875672	P875680	P833785	P875683	
Analyte	Units	06-JUL-2016	12-JAN-2016	06-JUL-2016	06-JUL-2016	12-JAN-2016	06-JUL-2016
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.142	0.136	0.132	0.000	0.135	0.000
>3.9 to 7.8		1.550	2.620	3.130	0.000	2.340	2.210
>7.8 to 15.6		0.787	2.810	4.370	0.000	6.350	6.370
>15.6 to 31		0.000	0.793	1.460	0.000	7.710	6.940
>31 to 62.5		5.300	3.680	4.370	0.063	22.600	21.300
>62.5 to 125		72.900	52.900	47.800	3.020	41.500	42.400
>125 to 250		18.600	35.000	35.500	42.500	17.400	18.200
>250 to 500		0.762	2.050	3.250	49.000	1.960	2.590
>500 to 1000		0.000	0.000	0.000	5.410	0.000	0.000
>1000 to 2000		0.000	0.000	0.000	0.000	0.000	0.000
>2000*		ND	ND	ND	ND	ND	ND
Totals:		100.041	99.989	100.012	99.993	99.995	100.010

*=A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - Grain Size (Sieve)
(all values are in percent distribution)

Annual 2016

Source:		I-4	I-6	I-16	I-23	I-28
Sample ID:		P832917	P832921	P833738	P833749	P833762
Analyte	MDL Units	11-JAN-2016	11-JAN-2016	12-JAN-2016	12-JAN-2016	12-JAN-2016
<63 microns, Phi<4		0.4	3.3	1.4	11.4	22.1
>63 to 125 microns, Phi>4		1.0	1.4	1.2	79.0	22.0
>125 to 250 microns, Phi>3		8.9	12.2	18.7	4.0	4.1
>250 to 500 microns, Phi>2		53.6	62.4	58.9	3.6	13.2
>500 to 1000 microns, Phi>1		33.5	20.5	18.9	1.4	22.4
>1000 to 2000 microns, Phi>0		0.9	0.2	0.4	0.5	10.7
>2000 microns, Phi>-1		1.7	0.1	0.4	0.2	5.5
Totals:		100.0	100.1	99.9	100.1	100.0

Source:	I-34	
Sample ID:	P833780	
Analyte	MDL Units	12-JAN-2016
<63 microns, Phi<4		0.9
>63 to 125 microns, Phi>4		0.2
>125 to 250 microns, Phi>3		7.1
>250 to 500 microns, Phi>2		22.1
>500 to 1000 microns, Phi>1		27.7
>1000 to 2000 microns, Phi>0		23.9
>2000 microns, Phi>-1		18.0
Totals:		99.9

SOUTH BAY WATER RECLAMATION PLANT
SEDIMENT ANNUAL - International Stations

Total Organic Carbon/Total Nitrogen

Annual 2016

Source:		I-1	I-2	I-3	I-4	I-6	I-7
Date:		2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg
Total Nitrogen	.01 WT%	0.028	0.014	ND	ND	ND	ND
Total Organic Carbon	.04 WT%	0.137	0.041	<0.040	ND	0.062	<0.040

Source:		I-8	I-9	I-10	I-12	I-12-H	I-13
Date:		2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg
Total Nitrogen	.01 WT%	0.012	0.027	<0.010	0.013	0.025	ND
Total Organic Carbon	.04 WT%	0.088	0.141	0.092	0.110	0.085	ND

Source:		I-14	I-14-H	I-15	I-15-H	I-16	I-16-H
Date:		2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg
Total Nitrogen	.01 WT%	0.032	0.024	0.024	0.025	ND	0.020
Total Organic Carbon	.04 WT%	0.174	0.181	0.109	0.120	0.044	0.118

Source:		I-18	I-20	I-21	I-22	I-23	I-27
Date:		2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg
Total Nitrogen	.01 WT%	ND	0.012	ND	0.033	0.026	0.025
Total Organic Carbon	.04 WT%	0.073	0.101	ND	0.242	0.101	0.125

Source:		I-28	I-29	I-30	I-31	I-33	I-34
Date:		2016	2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg	Avg
Total Nitrogen	.01 WT%	0.059	0.032	0.029	ND	0.027	ND
Total Organic Carbon	.04 WT%	0.513	0.204	0.164	0.084	0.134	ND

Source:		I-35
Date:		2016
Analyte	MDL Units	Avg
Total Nitrogen	.01 WT%	0.038
Total Organic Carbon	.04 WT%	0.300

ND=not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
SEDIMENT ANNUAL - International Stations

Trace Metals

Annual 2016

Source:		I-1	I-2	I-3	I-4	I-6
Date:		2016	2016	2016	2016	2016
Analyte	MDL	Units	Average	Average	Average	Average
Aluminum	2.4	MG/KG	2400	984	677	647
Antimony	.79	MG/KG	<0.8	<0.8	ND	ND
Arsenic	.33	MG/KG	1.18	1.0	1.21	1.4
Beryllium	.02	MG/KG	ND	ND	ND	ND
Cadmium	.13	MG/KG	<0.13	ND	ND	ND
Chromium	.136	MG/KG	6.6	5.5	5.5	4.0
Copper	.695	MG/KG	1.0	<0.7	ND	<0.7
Iron	9	MG/KG	3400	1260	1250	1560
Lead	.8	MG/KG	1.6	0.9	0.9	1.2
Manganese	.19	MG/KG	37.2	10.3	5.45	13.0
Mercury	.004	MG/KG	0.005	0.004	ND	ND
Nickel	.3	MG/KG	2.7	1.0	0.9	0.8
Selenium	.24	MG/KG	<0.24	ND	ND	ND
Silver	.206	MG/KG	ND	<0.2	ND	ND
Thallium	.5	MG/KG	ND	ND	ND	ND
Tin	.409	MG/KG	ND	ND	ND	ND
Zinc	1.45	MG/KG	7.9	3.6	3.1	3.2
						3.8

Source:		I-7	I-8	I-9	I-10	I-12
Date:		2016	2016	2016	2016	2016
Analyte	MDL	Units	Average	Average	Average	Average
Aluminum	2.4	MG/KG	1120	1550	7180	4890
Antimony	.79	MG/KG	<0.8	<0.8	<0.8	<0.8
Arsenic	.33	MG/KG	6.7	2.44	1.98	1.52
Beryllium	.02	MG/KG	ND	ND	ND	ND
Cadmium	.13	MG/KG	ND	ND	ND	ND
Chromium	.136	MG/KG	8.8	8.2	12.1	9.5
Copper	.695	MG/KG	ND	ND	2.9	1.7
Iron	9	MG/KG	7520	3860	7930	6160
Lead	.8	MG/KG	2.8	1.4	1.8	1.6
Manganese	.19	MG/KG	18.4	19.9	86.7	69.1
Mercury	.004	MG/KG	ND	ND	ND	ND
Nickel	.3	MG/KG	1.1	1.4	4.8	3.0
Selenium	.24	MG/KG	ND	ND	ND	ND
Silver	.206	MG/KG	ND	ND	ND	ND
Thallium	.5	MG/KG	ND	ND	ND	ND
Tin	.409	MG/KG	ND	ND	ND	ND
Zinc	1.45	MG/KG	6.0	7.1	20.8	14.0
						14.5

ND= not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
SEDIMENT ANNUAL - International Stations

Trace Metals

Annual 2016

Source:	I-12-H	I-13	I-14	I-14-H	I-15
Date:	2016	2016	2016	2016	2016
Analyte	MDL Units	Average	Average	Average	Average
Aluminum	.2.4 MG/KG	4270	877	6240	7650
Antimony	.79 MG/KG	ND	<0.8	<0.8	1.0
Arsenic	.33 MG/KG	1.05	6.91	1.70	0.95
Beryllium	.02 MG/KG	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	ND	ND	ND
Chromium	.136 MG/KG	10.1	9.2	11.3	15.5
Copper	.695 MG/KG	1.2	ND	2.6	2.7
Iron	9 MG/KG	5750	5760	6930	8220
Lead	.8 MG/KG	1.5	2.4	1.9	2.1
Manganese	.19 MG/KG	58.2	15.3	75.5	85.7
Mercury	.004 MG/KG	ND	ND	0.004	0.004
Nickel	.3 MG/KG	2.0	1.0	4.0	3.9
Selenium	.24 MG/KG	ND	ND	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND
Thallium	.5 MG/KG	ND	ND	ND	ND
Tin	.409 MG/KG	ND	ND	<0.4	ND
Zinc	1.45 MG/KG	14.0	5.2	17.9	21.4

Source:	I-15-H	I-16	I-16-H	I-18	I-20
Date:	2016	2016	2016	2016	2016
Analyte	MDL Units	Average	Average	Average	Average
Aluminum	.2.4 MG/KG	2120	2400	4180	4640
Antimony	.79 MG/KG	ND	ND	ND	<0.8
Arsenic	.33 MG/KG	2.13	1.45	1.00	1.65
Beryllium	.02 MG/KG	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	ND	ND	ND
Chromium	.136 MG/KG	9.1	5.7	10.4	12.1
Copper	.695 MG/KG	ND	<0.7	1.2	1.5
Iron	9 MG/KG	4360	3720	5550	6800
Lead	.8 MG/KG	1.8	1.2	1.7	1.8
Manganese	.19 MG/KG	27.2	37.3	59.4	75.4
Mercury	.004 MG/KG	ND	ND	ND	ND
Nickel	.3 MG/KG	1.1	1.6	2.0	3.1
Selenium	.24 MG/KG	ND	ND	ND	ND
Silver	.206 MG/KG	ND	<0.2	ND	ND
Thallium	.5 MG/KG	ND	ND	ND	ND
Tin	.409 MG/KG	ND	ND	ND	ND
Zinc	1.45 MG/KG	9.4	8.5	13.8	13.5

ND= not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
SEDIMENT ANNUAL - International Stations

Trace Metals

Annual 2016

Source:		I-21	I-22	I-23	I-27	I-28
Date:		2016	2016	2016	2016	2016
Analyte	MDL Units	Average	Average	Average	Average	Average
Aluminum	.2.4 MG/KG	965	4360	4550	5680	4470
Antimony	.79 MG/KG	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	.33 MG/KG	9.83	1.49	1.57	1.69	1.47
Beryllium	.02 MG/KG	ND	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	ND	ND	ND	<0.13
Chromium	.136 MG/KG	11.2	9.3	9.3	10.3	9.9
Copper	.695 MG/KG	ND	1.8	2.0	2.4	2.7
Iron	9 MG/KG	8520	5060	5240	6100	5710
Lead	.8 MG/KG	3.4	1.7	1.7	1.8	2.4
Manganese	.19 MG/KG	14.3	53.9	62.3	64.1	57.7
Mercury	.004 MG/KG	ND	0.005	0.005	ND	0.013
Nickel	.3 MG/KG	1.2	3.1	2.8	3.6	3.7
Selenium	.24 MG/KG	ND	ND	ND	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND	<0.2
Thallium	.5 MG/KG	ND	ND	ND	ND	ND
Tin	.409 MG/KG	ND	ND	ND	ND	<0.4
Zinc	1.45 MG/KG	6.0	12.0	12.4	15.5	12.4

Source:		I-29	I-30	I-31	I-33	I-34
Date:		2016	2016	2016	2016	2016
Analyte	MDL Units	Average	Average	Average	Average	Average
Aluminum	2.4 MG/KG	5210	3920	6150	6820	5280
Antimony	.79 MG/KG	<0.8	<0.8	0.8	0.8	<0.8
Arsenic	.33 MG/KG	1.73	1.39	1.39	2.16	2.26
Beryllium	.02 MG/KG	ND	ND	ND	ND	ND
Cadmium	.13 MG/KG	<0.13	<0.13	<0.13	ND	ND
Chromium	.136 MG/KG	10.8	8.1	14.3	15.1	14.4
Copper	.695 MG/KG	2.7	1.4	3.4	4.6	3.2
Iron	9 MG/KG	6840	5170	7930	9510	9800
Lead	.8 MG/KG	2.9	2.0	2.6	4.3	3.3
Manganese	.19 MG/KG	71.0	50.2	89.2	92.4	74.2
Mercury	.004 MG/KG	0.010	0.005	ND	0.015	0.005
Nickel	.3 MG/KG	3.4	2.4	3.6	4.8	3.7
Selenium	.24 MG/KG	ND	ND	ND	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND	ND
Thallium	.5 MG/KG	ND	ND	ND	ND	ND
Tin	.409 MG/KG	0.5	ND	<0.4	0.8	0.5
Zinc	1.45 MG/KG	16.6	11.8	21.1	23.9	21.7

ND= not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
SEDIMENT ANNUAL - International Stations

Trace Metals

Annual 2016

Source:	I-35	
Date:	2016	
Analyte	MDL Units	Average
Aluminum	2.4 MG/KG	10900
Antimony	.79 MG/KG	1.1
Arsenic	.33 MG/KG	2.33
Beryllium	.02 MG/KG	ND
Cadmium	.13 MG/KG	<0.13
Chromium	.136 MG/KG	23.1
Copper	.695 MG/KG	7.9
Iron	9 MG/KG	14500
Lead	.8 MG/KG	5.0
Manganese	.19 MG/KG	133
Mercury	.004 MG/KG	0.017
Nickel	.3 MG/KG	8.0
Selenium	.24 MG/KG	ND
Silver	.206 MG/KG	ND
Thallium	.5 MG/KG	ND
Tin	.409 MG/KG	0.9
Zinc	1.45 MG/KG	36.9

ND= not detected

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - International Stations

Annual 2016

Source:		I-1	I-2	I-3	I-4	I-6	I-7	I-8	I-9
Date:		2016	2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg						
Aldrin	300	NG/KG	ND						
Dieldrin	370	NG/KG	ND						
BHC, Alpha isomer	730	NG/KG	ND						
BHC, Beta isomer	52.7	NG/KG	<53	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	500	NG/KG	ND						
BHC, Delta isomer	160	NG/KG	ND						
p,p-DDD	120	NG/KG	<120	ND	ND	ND	ND	ND	ND
p,p-DDE	90	NG/KG	E75	<90	ND	<90	<90	<90	161
p,p-DDT	52	NG/KG	<52	ND	ND	ND	ND	ND	ND
o,p-DDD	90	NG/KG	ND						
o,p-DDE	110	NG/KG	ND						
o,p-DDT	73	NG/KG	ND						
Heptachlor	76	NG/KG	ND						
Heptachlor epoxide	212	NG/KG	ND						
Alpha (cis) Chlordane	170	NG/KG	ND						
Gamma (trans) Chlordane	61	NG/KG	ND						
Alpha Chlordene		NG/KG	NA						
Gamma Chlordene		NG/KG	NA						
Oxychlordane	210	NG/KG	ND						
Trans Nonachlor	150	NG/KG	ND	ND	ND	ND	ND	ND	<150
Cis Nonachlor	210	NG/KG	ND						
Alpha Endosulfan	380	NG/KG	ND						
Beta Endosulfan	230	NG/KG	ND						
Endosulfan Sulfate	570	NG/KG	ND						
Endrin	1000	NG/KG	ND						
Endrin aldehyde	1800	NG/KG	ND						
Mirex	61	NG/KG	ND						
Methoxychlor	250	NG/KG	ND						
Aldrin + Dieldrin	370	NG/KG	0	0	0	0	0	0	0
Hexachlorocyclohexanes	730	NG/KG	0	0	0	0	0	0	0
DDT and derivatives	120	NG/KG	0	0	0	0	0	0	161
Chlordane + related cmpds.	210	NG/KG	0	0	0	0	0	0	0
Chlorinated Hydrocarbons	1800	NG/KG	0	0	0	0	0	0	161

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 OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - International Stations

Annual 2016

Source		I-10	I-12	I-12-H	I-13	I-14	I-14-H	I-15	I-15-H
Date		2016	2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg	Avg	Avg
Aldrin	300	NG/KG	ND	ND	ND	ND	ND	ND	ND
Dieldrin	370	NG/KG	ND	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	730	NG/KG	ND	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	500	NG/KG	ND	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	160	NG/KG	<160	ND	ND	ND	ND	ND	ND
p,p-DDD	120	NG/KG	ND	ND	ND	ND	<120	ND	ND
p,p-DDE	90	NG/KG	E64	<90	DNQ58	ND	DNQ211	DNQ169	<90
p,p-DDT	52	NG/KG	ND	ND	ND	ND	ND	ND	ND
o,p-DDD	90	NG/KG	ND	ND	ND	ND	ND	ND	ND
o,p-DDE	110	NG/KG	ND	ND	ND	ND	ND	ND	ND
o,p-DDT	73	NG/KG	ND	ND	ND	ND	ND	ND	ND
Heptachlor	76	NG/KG	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	170	NG/KG	ND	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	61	NG/KG	ND	ND	ND	ND	ND	ND	ND
Alpha Chlordene		NG/KG	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	210	NG/KG	ND	ND	ND	ND	ND	ND	ND
Trans Nonachlor	150	NG/KG	ND	ND	ND	ND	ND	ND	ND
Cis Nonachlor	210	NG/KG	ND	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	380	NG/KG	ND	ND	ND	ND	ND	ND	ND
Beta Endosulfan	230	NG/KG	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	570	NG/KG	ND	ND	ND	ND	ND	ND	ND
Endrin	1000	NG/KG	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	1800	NG/KG	ND	ND	ND	ND	ND	ND	ND
Mirex	61	NG/KG	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	250	NG/KG	ND	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	370	NG/KG	0	0	0	0	0	0	0
Hexachlorocyclohexanes	730	NG/KG	0	0	0	0	0	0	0
DDT and derivatives	120	NG/KG	0	0	0	0	0	0	0
Chlordane + related cmpds.	210	NG/KG	0	0	0	0	0	0	0
Chlorinated Hydrocarbons	1800	NG/KG	0	0	0	0	0	0	0

ND=not detected

NA=not analyzed

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - International Stations

Annual 2016

Source			I-16	I-16-H	I-18	I-20	I-21	I-22	I-23	I-27
Date			2016	2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg
Aldrin	300	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	370	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	730	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND	ND	<53
BHC, Gamma isomer	500	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	160	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
p,p-DDD	120	NG/KG	ND	E19	ND	ND	ND	ND	ND	<120
p,p-DDE	90	NG/KG	<90	DNQ76	<90	E37	E57	148	DNQ116	DNQ161
p,p-DDT	52	NG/KG	ND	ND	ND	ND	ND	ND	ND	<52
o,p-DDD	90	NG/KG	ND	ND	ND	ND	ND	<90	ND	<90
o,p-DDE	110	NG/KG	ND	ND	ND	ND	ND	ND	ND	<110
o,p-DDT	73	NG/KG	ND	ND	ND	ND	ND	ND	ND	<73
Heptachlor	76	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	170	NG/KG	ND	ND	<170	ND	ND	ND	ND	<170
Gamma (trans) Chlordane	61	NG/KG	<61	ND	<61	ND	ND	ND	ND	<61
Alpha Chlordene		NG/KG	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	210	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Trans Nonachlor	150	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Cis Nonachlor	210	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	380	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Beta Endosulfan	230	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	570	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	1000	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	1800	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	61	NG/KG	ND	ND	<61	ND	ND	ND	ND	ND
Methoxychlor	250	NG/KG	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	370	NG/KG	0	0	0	0	0	0	0	0
Hexachlorocyclohexanes	730	NG/KG	0	0	0	0	0	0	0	0
DDT and derivatives	120	NG/KG	0	0	0	0	0	148	0	0
Chlordane + related cmpds.	210	NG/KG	0	0	0	0	0	0	0	0
Chlorinated Hydrocarbons	1800	NG/KG	0	0	0	0	0	148	0	0

ND=not detected

NA=not analyzed

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - International Stations

Annual 2016

Source		I-28	I-29	I-30	I-31	I-33	I-34	I-35
Date		2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg	Avg
Aldrin	300	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	370	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	730	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	500	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	160	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	120	NG/KG	<120	<120	ND	ND	ND	ND
p,p-DDE	90	NG/KG	601	775	DNQ143	<90	<90	ND
p,p-DDT	52	NG/KG	<52	<52	ND	ND	ND	<52
o,p-DDD	90	NG/KG	ND	<90	ND	ND	ND	ND
o,p-DDE	110	NG/KG	ND	ND	ND	ND	ND	ND
o,p-DDT	73	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor	76	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	170	NG/KG	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	61	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Oxychlordane	210	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	150	NG/KG	ND	ND	ND	ND	ND	ND
Cis Nonachlor	210	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	380	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	230	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	570	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	1000	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	1800	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	61	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	250	NG/KG	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	370	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	730	NG/KG	0	0	0	0	0	0
DDT and derivatives	120	NG/KG	601	775	143	0	0	210
Chlordane + related cmpds.	210	NG/KG	0	0	0	0	0	0
Chlorinated Hydrocarbons	1800	NG/KG	601	775	143	0	0	210

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 OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners (I-1 to I-35)

Annual 2016

Source		I-1	I-2	I-3	I-4	I-6	I-7	
Date		2016	2016	2016	2016	2016	2016	
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg	
PCB 18	90	NG/KG	<90	<90	ND	140	ND	ND
PCB 28	96	NG/KG	<96	<96	<96	150	ND	ND
PCB 52	37	NG/KG	DNQ39	ND	ND	120	ND	ND
PCB 49	34.4	NG/KG	<34	<32	ND	DNQ62	ND	ND
PCB 44	38.8	NG/KG	DNQ46	ND	ND	120	ND	ND
PCB 37	47	NG/KG	<47	ND	ND	<47	ND	ND
PCB 74	51	NG/KG	<51	<51	<51	<51	ND	ND
PCB 70	58	NG/KG	<58	ND	ND	ND	ND	ND
PCB 66	72	NG/KG	<72	<72	<72	<72	ND	ND
PCB 101	50	NG/KG	<50	<50	ND	120	ND	ND
PCB 99	80	NG/KG	ND	<80	ND	ND	ND	ND
PCB 119	59	NG/KG	ND	ND	ND	ND	ND	ND
PCB 87	44	NG/KG	ND	ND	ND	ND	ND	ND
PCB 110	53.6	NG/KG	<48	ND	ND	DNQ56	ND	ND
PCB 81	22.3	NG/KG	ND	<18	ND	ND	ND	ND
PCB 151	81	NG/KG	<81	ND	ND	110	ND	ND
PCB 77	110	NG/KG	ND	ND	ND	ND	ND	ND
PCB 149	59.6	NG/KG	DNQ96	<54	ND	260	ND	ND
PCB 123	79	NG/KG	ND	ND	ND	ND	ND	ND
PCB 118	110	NG/KG	ND	<110	ND	<110	ND	ND
PCB 114	78	NG/KG	ND	ND	ND	ND	ND	ND
PCB 105	37	NG/KG	ND	ND	ND	ND	ND	ND
PCB 138	45.5	NG/KG	<46	<39	ND	110	ND	ND
PCB 158	57	NG/KG	ND	ND	ND	<57	ND	ND
PCB 187	96	NG/KG	<96	ND	ND	<96	ND	ND
PCB 183	55	NG/KG	<55	ND	ND	<55	ND	ND
PCB 126	98	NG/KG	ND	ND	ND	ND	ND	ND
PCB 128	110	NG/KG	<110	ND	ND	<110	ND	ND
PCB 167	37	NG/KG	ND	ND	ND	ND	ND	ND
PCB 177	37	NG/KG	<37	ND	ND	<37	ND	ND
PCB 201	51	NG/KG	ND	ND	ND	ND	ND	ND
PCB 156	57	NG/KG	ND	ND	ND	<57	ND	ND
PCB 157	62	NG/KG	ND	ND	ND	ND	ND	ND
PCB 180	100	NG/KG	<100	ND	ND	<100	ND	<100
PCB 170	72	NG/KG	ND	ND	ND	<72	ND	ND
Total PCB's	110	NG/KG	0	0	0	1130	0	0

ND= not detected

E= Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners (I-1 to I-35)

Annual 2016

Source		I-8	I-9	I-10	I-12	I-12-H	I-13
Date		2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg
PCB 18	90	NG/KG	<90	<90	ND	ND	ND
PCB 28	96	NG/KG	<96	ND	ND	ND	ND
PCB 52	37	NG/KG	<37	<37	ND	E26	<37
PCB 49	34.4	NG/KG	ND	<32	<32	ND	ND
PCB 44	38.8	NG/KG	ND	ND	ND	ND	ND
PCB 37	47	NG/KG	ND	<47	ND	ND	ND
PCB 74	51	NG/KG	<51	<51	<51	ND	ND
PCB 70	58	NG/KG	<58	<58	ND	ND	ND
PCB 66	72	NG/KG	<72	<72	<72	ND	ND
PCB 101	50	NG/KG	ND	ND	ND	DNQ34	ND
PCB 99	80	NG/KG	ND	ND	ND	E17	ND
PCB 119	59	NG/KG	ND	ND	ND	ND	ND
PCB 87	44	NG/KG	ND	ND	ND	ND	ND
PCB 110	53.6	NG/KG	ND	ND	ND	ND	ND
PCB 81	22.3	NG/KG	ND	ND	<18	ND	ND
PCB 151	81	NG/KG	ND	ND	ND	ND	ND
PCB 77	110	NG/KG	ND	<110	ND	ND	ND
PCB 149	59.6	NG/KG	ND	ND	ND	E18	ND
PCB 123	79	NG/KG	ND	ND	ND	ND	ND
PCB 118	110	NG/KG	ND	ND	ND	ND	ND
PCB 114	78	NG/KG	ND	ND	ND	ND	ND
PCB 105	37	NG/KG	ND	ND	ND	ND	ND
PCB 138	45.5	NG/KG	<39	ND	<39	ND	ND
PCB 158	57	NG/KG	ND	ND	ND	ND	ND
PCB 187	96	NG/KG	ND	<96	ND	ND	ND
PCB 183	55	NG/KG	ND	ND	ND	ND	ND
PCB 126	98	NG/KG	ND	ND	ND	ND	ND
PCB 128	110	NG/KG	ND	ND	ND	ND	ND
PCB 167	37	NG/KG	ND	ND	ND	ND	ND
PCB 177	37	NG/KG	ND	ND	ND	ND	ND
PCB 201	51	NG/KG	ND	ND	ND	ND	ND
PCB 156	57	NG/KG	ND	ND	ND	ND	ND
PCB 157	62	NG/KG	ND	ND	ND	ND	ND
PCB 180	100	NG/KG	ND	ND	ND	ND	ND
PCB 170	72	NG/KG	ND	ND	ND	ND	ND
Total PCB's	110	NG/KG	0	0	0	0	0

ND= not detected

E= Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners (I-1 to I-35)

Annual 2016

Source		I-14	I-14-H	I-15	I-15-H	I-16	I-16-H
Date		2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg
PCB 18	90	NG/KG	ND	ND	E28	ND	ND
PCB 28	96	NG/KG	ND	ND	E24	ND	ND
PCB 52	37	NG/KG	ND	ND	E16	<37	E9
PCB 49	34.4	NG/KG	ND	ND	ND	<32	ND
PCB 44	38.8	NG/KG	ND	ND	E17	ND	ND
PCB 37	47	NG/KG	ND	ND	ND	ND	ND
PCB 74	51	NG/KG	ND	ND	ND	<51	E8
PCB 70	58	NG/KG	ND	ND	ND	ND	E9
PCB 66	72	NG/KG	ND	ND	ND	<72	E10
PCB 101	50	NG/KG	ND	ND	ND	ND	ND
PCB 99	80	NG/KG	ND	ND	ND	ND	ND
PCB 119	59	NG/KG	ND	ND	ND	ND	ND
PCB 87	44	NG/KG	ND	ND	ND	ND	ND
PCB 110	53.6	NG/KG	ND	E18	ND	ND	ND
PCB 81	22.3	NG/KG	ND	ND	ND	ND	ND
PCB 151	81	NG/KG	ND	ND	ND	<81	ND
PCB 77	110	NG/KG	ND	ND	ND	<110	ND
PCB 149	59.6	NG/KG	ND	ND	ND	<54	E17
PCB 123	79	NG/KG	ND	ND	ND	ND	ND
PCB 118	110	NG/KG	ND	ND	ND	ND	ND
PCB 114	78	NG/KG	ND	ND	ND	ND	ND
PCB 105	37	NG/KG	ND	ND	ND	ND	ND
PCB 138	45.5	NG/KG	ND	ND	ND	<39	ND
PCB 158	57	NG/KG	ND	ND	ND	<57	ND
PCB 187	96	NG/KG	ND	ND	ND	ND	ND
PCB 183	55	NG/KG	ND	ND	ND	ND	ND
PCB 126	98	NG/KG	ND	ND	ND	ND	ND
PCB 128	110	NG/KG	ND	ND	ND	ND	ND
PCB 167	37	NG/KG	ND	ND	ND	ND	ND
PCB 177	37	NG/KG	ND	ND	ND	ND	ND
PCB 201	51	NG/KG	ND	ND	ND	ND	ND
PCB 156	57	NG/KG	ND	ND	ND	ND	ND
PCB 157	62	NG/KG	ND	ND	ND	ND	ND
PCB 180	100	NG/KG	ND	ND	ND	ND	ND
PCB 170	72	NG/KG	ND	ND	ND	ND	ND
Total PCB's	110	NG/KG	0	0	0	0	0

ND= not detected

E= Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners (I-1 to I-35)

Annual 2016

Source		I-18	I-20	I-21	I-22	I-23	I-27
Date		2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg
PCB 18	90	NG/KG	ND	ND	ND	ND	<90
PCB 28	96	NG/KG	ND	ND	ND	<96	<96
PCB 52	37	NG/KG	ND	ND	ND	<37	<37
PCB 49	34.4	NG/KG	<32	ND	ND	ND	<34
PCB 44	38.8	NG/KG	ND	<37	ND	<37	ND
PCB 37	47	NG/KG	ND	ND	ND	ND	ND
PCB 74	51	NG/KG	<51	<51	ND	ND	<51
PCB 70	58	NG/KG	ND	<58	ND	<58	ND
PCB 66	72	NG/KG	<72	<72	ND	<72	<72
PCB 101	50	NG/KG	<50	ND	ND	ND	<50
PCB 99	80	NG/KG	ND	ND	ND	ND	<80
PCB 119	59	NG/KG	ND	ND	ND	ND	<59
PCB 87	44	NG/KG	ND	ND	ND	ND	ND
PCB 110	53.6	NG/KG	ND	ND	ND	<48	<54
PCB 81	22.3	NG/KG	ND	ND	ND	ND	<22
PCB 151	81	NG/KG	<81	ND	ND	<81	<81
PCB 77	110	NG/KG	<110	ND	ND	ND	<110
PCB 149	59.6	NG/KG	<54	ND	ND	<54	<54
PCB 123	79	NG/KG	<79	ND	ND	<79	ND
PCB 118	110	NG/KG	<110	ND	ND	<110	<110
PCB 114	78	NG/KG	ND	ND	ND	ND	ND
PCB 105	37	NG/KG	<37	ND	ND	ND	<37
PCB 138	45.5	NG/KG	ND	<39	ND	<39	<39
PCB 158	57	NG/KG	ND	ND	ND	ND	<57
PCB 187	96	NG/KG	ND	<96	ND	<96	<96
PCB 183	55	NG/KG	ND	ND	ND	ND	<55
PCB 126	98	NG/KG	ND	ND	ND	ND	<98
PCB 128	110	NG/KG	ND	ND	ND	ND	<110
PCB 167	37	NG/KG	ND	ND	ND	ND	<37
PCB 177	37	NG/KG	ND	ND	ND	ND	<37
PCB 201	51	NG/KG	ND	ND	ND	ND	<51
PCB 156	57	NG/KG	ND	ND	ND	ND	<57
PCB 157	62	NG/KG	ND	ND	ND	ND	<62
PCB 180	100	NG/KG	ND	ND	ND	<100	<100
PCB 170	72	NG/KG	ND	ND	ND	ND	ND
Total PCB's	110	NG/KG	0	0	0	0	0

ND= not detected

E= Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners (I-1 to I-35)

Annual 2016

Source		I-28	I-29	I-30	I-31	I-33	I-34
Date		2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg
PCB 18	90	NG/KG	<90	ND	ND	ND	ND
PCB 28	96	NG/KG	<96	ND	ND	ND	ND
PCB 52	37	NG/KG	DNQ40	<37	<37	ND	ND
PCB 49	34.4	NG/KG	E32	<32	<32	ND	ND
PCB 44	38.8	NG/KG	ND	ND	ND	ND	ND
PCB 37	47	NG/KG	ND	ND	ND	ND	ND
PCB 74	51	NG/KG	ND	ND	ND	ND	ND
PCB 70	58	NG/KG	<58	ND	<58	ND	ND
PCB 66	72	NG/KG	<72	ND	<72	ND	<72
PCB 101	50	NG/KG	DNQ80	<50	ND	ND	<50
PCB 99	80	NG/KG	E65	<80	ND	ND	<80
PCB 119	59	NG/KG	ND	ND	ND	ND	ND
PCB 87	44	NG/KG	ND	ND	ND	ND	ND
PCB 110	53.6	NG/KG	<54	<48	ND	ND	ND
PCB 81	22.3	NG/KG	ND	ND	ND	ND	ND
PCB 151	81	NG/KG	<81	ND	ND	ND	ND
PCB 77	110	NG/KG	<110	ND	ND	ND	ND
PCB 149	59.6	NG/KG	DNQ83	<54	ND	ND	ND
PCB 123	79	NG/KG	ND	ND	ND	ND	ND
PCB 118	110	NG/KG	<110	<110	ND	ND	<110
PCB 114	78	NG/KG	ND	ND	ND	ND	ND
PCB 105	37	NG/KG	<37	<37	ND	ND	ND
PCB 138	45.5	NG/KG	DNQ100	<46	ND	ND	ND
PCB 158	57	NG/KG	<57	ND	ND	ND	ND
PCB 187	96	NG/KG	<96	<96	ND	ND	<96
PCB 183	55	NG/KG	<55	<55	ND	ND	ND
PCB 126	98	NG/KG	ND	ND	ND	ND	ND
PCB 128	110	NG/KG	<110	<110	<110	ND	ND
PCB 167	37	NG/KG	ND	ND	ND	ND	ND
PCB 177	37	NG/KG	ND	ND	<37	ND	ND
PCB 201	51	NG/KG	ND	ND	ND	ND	ND
PCB 156	57	NG/KG	<57	ND	ND	ND	ND
PCB 157	62	NG/KG	ND	ND	ND	ND	ND
PCB 180	100	NG/KG	<100	<100	ND	ND	ND
PCB 170	72	NG/KG	<72	ND	ND	ND	ND
Total PCB's	110	NG/KG	400	0	0	0	0

ND= not detected

E= Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners (I-1 to I-35)

Annual 2016

Source		I-35	
Date		2016	
Analyte	MDL	Units	Avg
PCB 18	90	NG/KG	ND
PCB 28	96	NG/KG	ND
PCB 52	37	NG/KG	<37
PCB 49	34.4	NG/KG	<32
PCB 44	38.8	NG/KG	ND
PCB 37	47	NG/KG	ND
PCB 74	51	NG/KG	ND
PCB 70	58	NG/KG	ND
PCB 66	72	NG/KG	<72
PCB 101	50	NG/KG	<30
PCB 99	80	NG/KG	ND
PCB 119	59	NG/KG	ND
PCB 87	44	NG/KG	ND
PCB 110	53.6	NG/KG	ND
PCB 81	22.3	NG/KG	ND
PCB 151	81	NG/KG	ND
PCB 77	110	NG/KG	ND
PCB 149	59.6	NG/KG	<54
PCB 123	79	NG/KG	ND
PCB 118	110	NG/KG	<110
PCB 114	78	NG/KG	ND
PCB 105	37	NG/KG	<37
PCB 138	45.5	NG/KG	<46
PCB 158	57	NG/KG	ND
PCB 187	96	NG/KG	<96
PCB 183	55	NG/KG	ND
PCB 126	98	NG/KG	ND
PCB 128	110	NG/KG	<110
PCB 167	37	NG/KG	ND
PCB 177	37	NG/KG	ND
PCB 201	51	NG/KG	ND
PCB 156	57	NG/KG	ND
PCB 157	62	NG/KG	ND
PCB 180	100	NG/KG	<100
PCB 170	72	NG/KG	ND
Total PCB's	110	NG/KG	0

ND= not detected

E= Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - International Stations

Annual 2016

Source:			I-1	I-2	I-3	I-4	I-6	I-7	I-8
Date:			2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg						
Acenaphthene	20	UG/KG	ND						
Acenaphthylene	30	UG/KG	ND						
Anthracene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
Benzo[e]pyrene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	20	UG/KG	ND						
Benzo[k]fluoranthene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
Biphenyl	30	UG/KG	ND						
Chrysene	40	UG/KG	<40	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	20	UG/KG	ND						
2,6-Dimethylnaphthalene	20.2	UG/KG	ND						
Fluoranthene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
Fluorene	20	UG/KG	ND						
Indeno(1,2,3-CD)pyrene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND						
1-Methylnaphthalene	22.5	UG/KG	ND						
Naphthalene	32.9	UG/KG	ND						
Perylene	30	UG/KG	<30	ND	ND	ND	ND	ND	ND
Phenanthrene	30	UG/KG	<30	ND	ND	ND	ND	ND	ND
Pyrene	20	UG/KG	<20	ND	ND	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	20	UG/KG	ND						
Base/Neutral Compounds			0	0	0	0	0	0	0

Source			I-9	I-10	I-12	I-12-H	I-13	I-14	I-14-H
Date			2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg	Avg	Avg
Acenaphthene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	20	UG/KG	ND	ND	<20	ND	ND	ND	ND
Benzo[a]pyrene	20	UG/KG	ND	ND	<20	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	20	UG/KG	ND	ND	<20	ND	ND	ND	ND
Benzo[e]pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	20	UG/KG	ND	ND	<20	ND	ND	ND	ND
Biphenyl	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Chrysene	40	UG/KG	ND	ND	<40	ND	ND	ND	ND
Dibenzo(a,h)anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	20	UG/KG	ND	ND	<20	ND	ND	ND	ND
Fluorene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND	ND
Perylene	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Pyrene	20	UG/KG	ND	ND	<20	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	0	0	0	0

ND=not detected

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - International Stations

Annual 2016

Source		I-15	I-15-H*	I-16	I-16-H	I-18	I-20	I-21	I-22
Date		2016	2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg	Avg	Avg
Acenaphthene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[e]pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Biphenyl	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Chrysene	40	UG/KG	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	ND	ND	ND	ND	ND	ND	<20
Fluoranthene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Fluorene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND	ND
Perylene	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Phenanthrrene	30	UG/KG	ND	ND	ND	ND	ND	ND	ND
Pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	0	0	0	0

Source		I-23	I-27	I-28	I-29	I-30	I-31	I-33
Date		2016	2016	2016	2016	2016	2016	2016
Analyte	MDL	Units	Avg	Avg	Avg	Avg	Avg	Avg
Acenaphthene	20	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	30	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	20	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[e]pyrene	20	UG/KG	ND	ND	ND	ND	ND	<20
Benzo[g,h,i]perylene	20	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	20	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl	30	UG/KG	ND	ND	ND	ND	<21	ND
Chrysene	40	UG/KG	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	20	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	ND	ND	<20	<20	ND	<20
Fluoranthene	20	UG/KG	ND	ND	ND	ND	ND	ND
Fluorene	20	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	20	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	20	UG/KG	ND	ND	ND	ND	<20	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	30	UG/KG	ND	ND	ND	ND	ND	ND
Phenanthrrene	30	UG/KG	ND	ND	ND	ND	ND	ND
Pyrene	20	UG/KG	ND	ND	ND	<15	ND	ND
2,3,5-Trimethylnaphthalene	20	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	0	0	0

* = Surrogate recovery in sample outside method acceptance limits; sample result not included in average calculations.

ND=not detected

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - International Stations

Annual 2016

		I-34 2016	I-35 2016
	MDL Units	Avg	Avg
Acenaphthene	20 UG/KG	ND	ND
Acenaphthylene	30 UG/KG	ND	ND
Anthracene	20 UG/KG	ND	ND
Benzo[a]anthracene	20 UG/KG	ND	ND
Benzo[a]pyrene	20 UG/KG	ND	<13
3,4-Benzo(b)fluoranthene	20 UG/KG	ND	<10
Benzo[e]pyrene	20 UG/KG	ND	ND
Benzo[g,h,i]perylene	20 UG/KG	ND	ND
Benzo[k]fluoranthene	20 UG/KG	ND	ND
Biphenyl	30 UG/KG	ND	ND
Chrysene	40 UG/KG	ND	ND
Dibenzo(a,h)anthracene	20 UG/KG	ND	ND
2,6-Dimethylnaphthalene	20.2 UG/KG	ND	ND
Fluoranthene	20 UG/KG	ND	<14
Fluorene	20 UG/KG	ND	ND
Indeno(1,2,3-CD)pyrene	20 UG/KG	ND	ND
1-Methylphenanthrene	20 UG/KG	ND	ND
2-Methylnaphthalene	23.2 UG/KG	ND	ND
1-Methylnaphthalene	22.5 UG/KG	ND	ND
Naphthalene	32.9 UG/KG	ND	ND
Perylene	30 UG/KG	ND	ND
Phenanthrene	30 UG/KG	ND	<14
Pyrene	20 UG/KG	ND	<15
2,3,5-Trimethylnaphthalene	20 UG/KG	ND	ND
Base/Neutral Compounds		0	0

ND=not detected

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - Random Stations

Sulfide and Total Volatile Solids Analysis

Annual 2016

Source:		8501	8502	8503	8504	8505	8506
Analyte	MDL Units	07-JUL-2016	12-JUL-2016	07-JUL-2016	07-JUL-2016	12-JUL-2016	06-JUL-2016
Sulfides-Total	.14 MG/KG	2.13	1.51	1.55	4.10	5.62	0.46
Total Volatile Solids	.11 WT%	0.85	1.20	1.50	3.80	0.90	0.70
Source:		8507	8508	8509	8510	8512	8513
Analyte	MDL Units	07-JUL-2016	06-JUL-2016	12-JUL-2016	27-JUL-2016	27-JUL-2016	12-JUL-2016
Sulfides-Total	.14 MG/KG	2.62	4.77	8.86	8.01	20.00	1.95
Total Volatile Solids	.11 WT%	1.80	1.20	2.20	5.40	7.50	0.50
Source:		8514	8515	8516	8518	8519	8520
Analyte	MDL Units	06-JUL-2016	12-JUL-2016	14-JUL-2016	13-JUL-2016	19-JUL-2016	19-JUL-2016
Sulfides-Total	.14 MG/KG	1.24	1.18	31.90	4.51	4.97	2.82
Total Volatile Solids	.11 WT%	0.40	0.60	5.80	2.50	2.60	2.20
Source:		8521	8522	8523	8524	8525	8526
Analyte	MDL Units	27-JUL-2016	19-JUL-2016	19-JUL-2016	13-JUL-2016	13-JUL-2016	19-JUL-2016
Sulfides-Total	.14 MG/KG	7.05	0.20	3.60	3.84	3.27	5.16
Total Volatile Solids	.11 WT%	8.10	1.00	2.50	2.00	1.90	2.60
Source:		8527	8528	8529	8530	8531	8532
Analyte	MDL Units	27-JUL-2016	13-JUL-2016	19-JUL-2016	13-JUL-2016	13-JUL-2016	18-JUL-2016
Sulfides-Total	.14 MG/KG	6.48	10.1	4.76	3.81	3.27	3.40
Total Volatile Solids	.11 WT%	5.80	3.20	1.60	2.20	2.60	2.20
Source:		8533	8534	8536	8537	8538	8539
Analyte	MDL Units	19-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016
Sulfides-Total	.14 MG/KG	2.72	8.21	7.72	31.60	9.19	24.7
Total Volatile Solids	.11 WT%	1.00	2.10	1.60	6.50	1.50	2.90
Source:		8540	8542	8547	8517		
Analyte	MDL Units	20-JUL-2016	14-JUL-2016	20-JUL-2016	28-JUL-2016		
Sulfides-Total	.14 MG/KG	30.4	3.90	13.0	5.50		
Total Volatile Solids	.11 WT%	9.20	4.30	3.20	NA		

ND= not detected

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - Random Stations

Sulfide and Total Volatile Solids Analysis

Annual 2016

Source:		8501-H	8502-H	8503-H	8505-H	8507-H	8510-H
Analyte	MDL Units	07-JUL-2016	12-JUL-2016	07-JUL-2016	12-JUL-2016	07-JUL-2016	27-JUL-2016
Sulfides-Total	.14 MG/KG		1.41	0.71	2.12	2.22	4.76
Total Volatile Solids	.11 WT%		0.90	0.40	1.45	0.80	1.80
							14.9
							5.40
Source:		8512-H	8513-H	8515-H	8517-H	8520-H	8521-H
Analyte	MDL Units	27-JUL-2016	12-JUL-2016	12-JUL-2016	28-JUL-2016	19-JUL-2016	27-JUL-2016
Sulfides-Total	.14 MG/KG		14.1	3.30	1.58	16.8	4.60
Total Volatile Solids	.11 WT%		7.60	0.70	0.60	1.90	2.30
							10.9
							8.30
Source:		8522-H	8523-H	8526-H	8527-H	8529-H	8533-H
Analyte	MDL Units	19-JUL-2016	19-JUL-2016	19-JUL-2016	27-JUL-2016	19-JUL-2016	19-JUL-2016
Sulfides-Total	.14 MG/KG		0.33	4.20	6.17	7.46	6.41
Total Volatile Solids	.11 WT%		0.80	2.40	2.55	5.80	1.90
							3.22
							1.20
Source:		8536-H	8539-H				
Analyte	MDL Units	20-JUL-2016	20-JUL-2016				
Sulfides-Total	.14 MG/KG		7.69	35.4			
Total Volatile Solids	.11 WT%		1.95	3.00			

ND= not detected

SEDIMENT - Grain Size - Random Stations
(all values are in percent distribution)

Annual 2016

Source:		8501	8502	8503	8504	8505	8506
Date:		07-JUL-2016	12-JUL-2016	07-JUL-2016	07-JUL-2016	12-JUL-2016	06-JUL-2016
Analyte	MDL Units	P875924	P877139	P875931	P875932	P877141	P875624
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.115	0.268	0.399	0.833	0.271	0.000
>3.9 to 7.8		1.900	2.530	5.560	7.370	2.170	0.362
>7.8 to 15.6		2.400	3.430	9.920	15.800	1.750	0.984
>15.6 to 31		1.650	2.890	6.070	8.470	0.702	0.385
>31 to 62.5		15.800	18.700	11.600	15.700	12.600	0.883
>62.5 to 125		59.100	48.300	35.600	35.500	67.600	2.010
>125 to 250		17.100	21.100	28.200	14.600	14.000	8.110
>250 to 500		1.930	2.790	2.580	1.280	0.861	49.400
>500 to 1000		0.000	0.000	0.000	0.000	0.000	35.000
>1000 to 2000		0.000	0.000	0.000	0.000	0.000	2.850
>2000*		ND	ND	ND	ND	ND	ND
Totals:		99.995	100.008	99.929	99.553	99.954	99.984

Source:		8507	8508	8509	8510	8512	8513
Date:		07-JUL-2016	06-JUL-2016	12-JUL-2016	27-JUL-2016	27-JUL-2016	12-JUL-2016
Analyte	MDL Units	P875939	P875626	P877150	P883124	P883128	P877155
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.309	1.000	0.000
>2.0 to 3.9		0.804	0.000	0.632	2.410	3.890	0.000
>3.9 to 7.8		6.730	1.800	5.520	10.700	13.600	0.000
>7.8 to 15.6		10.500	3.990	9.140	21.100	23.900	0.359
>15.6 to 31		6.850	3.360	6.520	14.000	15.300	0.686
>31 to 62.5		13.300	19.700	10.600	19.100	18.100	1.330
>62.5 to 125		32.200	53.400	16.400	21.800	18.500	9.900
>125 to 250		24.600	16.200	24.800	9.250	5.380	55.000
>250 to 500		5.060	1.630	19.000	1.350	0.165	29.500
>500 to 1000		0.000	0.000	7.320	0.000	0.000	3.150
>1000 to 2000		0.000	0.000	0.052	0.000	0.000	0.000
>2000*		ND	ND	ND	ND	ND	ND
Totals:		100.044	100.080	99.984	100.019	99.835	99.925

ND=not detected

*= A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT- Grain Size - Random Stations
(all values are in percent distribution)

Annual 2016

Source:	8514	8515	8516	8517	8518	8519
Date:	06-JUL-2016	12-JUL-2016	14-JUL-2016	28-JUL-2016	13-JUL-2016	19-JUL-2016
Analyte	MDL Units	P875633	P877160	P879220	P883267	P878797
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.114	0.000	0.000
>2.0 to 3.9		0.148	0.000	1.790	0.260	0.504
>3.9 to 7.8		1.810	1.120	10.100	3.260	4.750
>7.8 to 15.6		1.180	0.962	22.600	7.800	11.800
>15.6 to 31		0.000	0.000	15.900	5.830	10.700
>31 to 62.5		6.250	0.842	20.800	17.100	30.600
>62.5 to 125		71.700	28.500	20.400	46.800	35.600
>125 to 250		18.200	57.500	7.600	17.500	5.960
>250 to 500		0.775	11.000	0.808	1.380	0.120
>500 to 1000		0.000	0.129	0.000	0.000	0.000
>1000 to 2000		0.000	0.000	0.000	0.000	0.000
>2000*		ND	ND	ND	ND	ND
Totals:		100.063	100.053	100.112	99.930	100.034
						100.032

Source:	8520	8521	8523	8524	8525	8526
Date:	19-JUL-2016	27-JUL-2016	19-JUL-2016	13-JUL-2016	13-JUL-2016	19-JUL-2016
Analyte	MDL Units	P880841	P883133	P880854	P878801	P878809
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.563	0.742	0.650	0.322	0.163
>3.9 to 7.8		5.180	10.100	5.210	3.640	3.230
>7.8 to 15.6		11.000	29.000	12.400	7.510	6.100
>15.6 to 31		7.400	19.400	11.300	4.810	4.090
>31 to 62.5		23.000	21.000	29.000	16.000	16.400
>62.5 to 125		43.500	16.400	34.000	49.700	49.700
>125 to 250		9.220	3.280	7.340	17.100	18.700
>250 to 500		0.154	0.071	0.162	0.891	1.630
>500 to 1000		0.000	0.000	0.000	0.000	0.000
>1000 to 2000		0.000	0.000	0.000	0.000	0.000
>2000*		ND	ND	ND	ND	ND
Totals:		100.017	99.993	100.062	99.973	100.013
						99.999

ND=not detected

*= A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT - Grain Size - Random Stations
(all values are in percent distribution)

Annual 2016

Source:	8527	8528	8529	8530	8531	8532
Date:	27-JUL-2016	13-JUL-2016	19-JUL-2016	13-JUL-2016	13-JUL-2016	18-JUL-2016
Analyte	MDL Units	P883140	P878811	P880863	P878817	P878823
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.141	0.165	0.120	0.546	0.627
>3.9 to 7.8		5.660	3.490	2.720	5.160	5.480
>7.8 to 15.6		20.000	7.470	5.670	12.000	9.950
>15.6 to 31		14.300	4.190	3.760	8.320	7.360
>31 to 62.5		21.000	6.630	15.800	19.100	17.000
>62.5 to 125		30.500	19.000	55.000	39.600	29.600
>125 to 250		8.230	22.300	16.100	14.000	21.700
>250 to 500		0.178	21.900	0.773	1.360	8.140
>500 to 1000		0.000	13.500	0.000	0.000	0.905
>1000 to 2000		0.000	1.270	0.000	0.000	0.000
>2000*		ND	ND	ND	ND	ND
Totals:		100.009	99.915	99.943	100.086	100.762
						100.009

Source:	8533	8534	8536	8537	8538	8539
Date:	19-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016
Analyte	MDL Units	P880866	P881417	P881429	P881432	P881439
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.010	0.000
>2.0 to 3.9		0.000	0.377	0.453	1.650	0.120
>3.9 to 7.8		0.474	3.950	4.680	10.200	2.120
>7.8 to 15.6		1.230	8.550	6.460	23.200	3.940
>15.6 to 31		0.424	6.910	4.440	15.400	3.950
>31 to 62.5		0.048	26.100	16.300	21.100	18.300
>62.5 to 125		1.290	45.600	25.000	23.300	47.800
>125 to 250		15.200	8.350	8.200	5.080	20.600
>250 to 500		44.800	0.138	7.830	0.111	3.110
>500 to 1000		25.600	0.000	21.800	0.000	0.000
>1000 to 2000		10.500	0.000	4.830	0.000	0.000
>2000*		ND	ND	ND	ND	ND
Totals:		99.566	99.975	99.993	100.051	99.940
						99.988

ND=not detected

*= A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT- Grain Size - Random Stations
(all values are in percent distribution)

Annual 2016

Source:	8540	8542	8547
Date:	20-JUL-2016	14-JUL-2016	20-JUL-2016
Analyte	MDL Units	P881450	P879165
<hr/>			
>0.5 to 1.0		0.000	0.000
>1.0 to 2.0		0.161	0.000
>2.0 to 3.9		2.680	0.969
>3.9 to 7.8		15.500	7.580
>7.8 to 15.6		34.000	11.000
>15.6 to 31		20.600	6.600
>31 to 62.5		14.400	9.250
>62.5 to 125		9.690	13.300
>125 to 250		2.910	20.000
>250 to 500		0.095	20.500
>500 to 1000		0.000	10.200
>1000 to 2000		0.000	0.470
>2000*		ND	ND
<hr/>			
Totals:		100.036	99.869
			99.985

ND=not detected

*= A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT- Grain Size - Random Stations
(all values are in percent distribution)

Annual 2016

Source:	8501-H	8502-H	8503-H	8505-H	8507-H	8510-H
Date:	07-JUL-2016	12-JUL-2016	07-JUL-2016	12-JUL-2016	07-JUL-2016	27-JUL-2016
Analyte	MDL Units	P875966	P877179	P875967	P877188	P875974
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.151
>2.0 to 3.9		0.000	0.000	0.417	0.278	2.090
>3.9 to 7.8		1.650	0.298	4.870	1.990	10.300
>7.8 to 15.6		2.260	1.000	7.600	1.300	21.100
>15.6 to 31		1.650	0.717	4.530	0.044	14.200
>31 to 62.5		15.600	2.790	10.700	10.700	19.300
>62.5 to 125		59.800	9.110	38.600	70.400	22.300
>125 to 250		17.200	9.570	30.400	14.500	9.290
>250 to 500		1.780	41.800	2.800	0.793	1.340
>500 to 1000		0.000	33.100	0.000	0.000	0.000
>1000 to 2000		0.000	1.530	0.000	0.000	0.000
>2000*		ND	ND	ND	ND	ND
Totals:		99.940	99.915	99.917	100.005	99.940
						100.071

Source:	8512-H	8513-H	8515-H	8517-H	8520-H	8521-H
Date:	27-JUL-2016	12-JUL-2016	12-JUL-2016	28-JUL-2016	19-JUL-2016	27-JUL-2016
Analyte	MDL Units	P883156	P877189	P877196	P883280	P880874
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.124	0.000	0.000	0.000	0.000
>2.0 to 3.9		1.960	0.000	0.000	0.338	0.601
>3.9 to 7.8		11.100	0.011	1.140	3.500	4.880
>7.8 to 15.6		23.400	0.765	0.974	7.880	9.900
>15.6 to 31		14.500	0.988	0.000	6.160	6.820
>31 to 62.5		18.800	1.960	0.674	18.100	22.400
>62.5 to 125		22.700	14.100	24.400	46.200	45.300
>125 to 250		6.810	56.600	60.500	16.500	9.920
>250 to 500		0.497	23.200	11.900	1.310	0.158
>500 to 1000		0.000	2.290	0.463	0.000	0.000
>1000 to 2000		0.000	0.000	0.000	0.000	0.000
>2000*		ND	ND	ND	ND	ND
Totals:		99.891	99.914	100.051	99.988	99.979
						100.029

ND=not detected

*= A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT- Grain Size - Random Stations
(all values are in percent distribution)

Annual 2016

Source:	8523-H	8526-H	8527-H	8529-H	8533-H	8536-H
Date:	19-JUL-2016	19-JUL-2016	27-JUL-2016	19-JUL-2016	19-JUL-2016	20-JUL-2016
Analyte	MDL Units	P880880	P880887	P883166	P880976	P880894
>0.5 to 1.0		0.000	0.000	0.000	0.000	0.000
>1.0 to 2.0		0.000	0.000	0.000	0.000	0.000
>2.0 to 3.9		0.786	0.559	0.306	0.128	0.000
>3.9 to 7.8		5.250	5.330	6.710	2.780	0.634
>7.8 to 15.6		12.400	12.500	21.300	6.540	1.920
>15.6 to 31		11.400	9.090	14.400	4.640	1.070
>31 to 62.5		29.000	21.200	20.700	16.500	0.775
>62.5 to 125		33.700	38.500	29.000	52.500	1.580
>125 to 250		7.270	12.100	7.450	16.100	10.300
>250 to 500		0.163	0.795	0.157	0.802	35.300
>500 to 1000		0.000	0.000	0.000	0.000	8.920
>1000 to 2000		0.000	0.000	0.000	0.000	24.400
>2000*		ND	ND	ND	ND	ND
Totals:		99.969	100.074	100.023	99.990	98.679
						99.953

Source:	8539-H
Date:	20-JUL-2016
Analyte	MDL Units
>0.5 to 1.0	0.000
>1.0 to 2.0	0.000
>2.0 to 3.9	0.322
>3.9 to 7.8	4.240
>7.8 to 15.6	9.430
>15.6 to 31	6.410
>31 to 62.5	16.700
>62.5 to 125	38.200
>125 to 250	20.700
>250 to 500	4.030
>500 to 1000	0.000
>1000 to 2000	0.000
>2000*	ND
Totals:	100.032

ND=not detected

*= A value in this field reflects a percentage of 30 grams remaining on a 2000 micron sieve. This value must be subtracted from the total percentage.

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT - Grain Size (Sieve) - Random Stations
(all values are in percent distribution)

Annual 2016

Source:	8522
Sample ID:	P880845
Analyte	MDL Units 19-JUL-2016
=====	
<63 microns, Phi<4	2.2
>63 to 125 microns, Phi>4	0.2
>125 to 250 microns, Phi>3	1.6
>250 to 500 microns, Phi>2	21.6
>500 to 1000 microns, Phi>1	52.7
>1000 to 2000 microns, Phi>0	15.0
>2000 microns, Phi>-1	7.0
=====	
Totals:	100.3

Source:	8522-H
Sample ID:	P880877
Analyte	MDL Units 19-JUL-2016
=====	
<63 microns, Phi<4	2.5
>63 to 125 microns, Phi>4	0.1
>125 to 250 microns, Phi>3	1.1
>250 to 500 microns, Phi>2	12.2
>500 to 1000 microns, Phi>1	66.2
>1000 to 2000 microns, Phi>0	16.4
>2000 microns, Phi>-1	1.6
=====	
Totals:	100.1

SOUTH BAY WATER RECLAMATION PLANT
SEDIMENT ANNUAL Total Organic Carbon/Total Nitrogen - Random Stations

Annual 2016

Source:		8501	8502	8503	8504	8505	8506
Analyte	MDL Units	07-JUL-2016	12-JUL-2016	07-JUL-2016	07-JUL-2016	12-JUL-2016	06-JUL-2016
Total Nitrogen	.01 WT%		0.03	0.03	0.04	0.08	0.03
Total Organic Carbon	.04 WT%		0.16	0.20	0.38	1.15	0.12

Source:		8507	8508	8509	8510	8512	8513
Analyte	MDL Units	07-JUL-2016	06-JUL-2016	12-JUL-2016	27-JUL-2016	27-JUL-2016	12-JUL-2016
Total Nitrogen	.01 WT%		0.05	0.04	0.04	0.14	0.19
Total Organic Carbon	.04 WT%		0.42	0.30	0.52	1.48	2.69

Source:		8514	8515	8516	8518	8519	8520
Analyte	MDL Units	06-JUL-2016	12-JUL-2016	14-JUL-2016	13-JUL-2016	19-JUL-2016	19-JUL-2016
Total Nitrogen	.01 WT%		ND	ND	0.15	0.06	0.06
Total Organic Carbon	.04 WT%		0.08	0.08	1.82	0.65	0.55

Source:		8521	8522	8523	8524	8525	8526
Analyte	MDL Units	27-JUL-2016	19-JUL-2016	19-JUL-2016	13-JUL-2016	13-JUL-2016	19-JUL-2016
Total Nitrogen	.01 WT%		0.21	0.05	0.07	0.05	0.04
Total Organic Carbon	.04 WT%		2.54	3.24	0.56	0.41	0.30

Source:		8527	8528	8529	8530	8531	8532
Analyte	MDL Units	27-JUL-2016	13-JUL-2016	19-JUL-2016	13-JUL-2016	13-JUL-2016	18-JUL-2016
Total Nitrogen	.01 WT%		0.14	0.06	0.05	0.05	0.05
Total Organic Carbon	.04 WT%		1.64	2.79	0.35	0.51	0.80

Source:		8533	8534	8536	8537	8538	8539
Analyte	MDL Units	19-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016
Total Nitrogen	.01 WT%		0.04	0.06	0.05	0.16	0.05
Total Organic Carbon	.04 WT%		2.98	0.52	0.86	1.71	0.37

Source:		8540	8542	8547	8517
Analyte	MDL Units	20-JUL-2016	14-JUL-2016	20-JUL-2016	28-JUK-2016
Total Nitrogen	.01 WT%		0.24	0.11	0.07
Total Organic Carbon	.04 WT%		2.45	5.07	0.71

ND=not detected

SOUTH BAY WATER RECLAMATION PLANT
SEDIMENT ANNUAL Total Organic Carbon/Total Nitrogen - Random Stations

Annual 2016

Source:		8501-H	8502-H	8503-H	8505-H	8507-H	8510-H	
Analyte	MDL Units	07-JUL-2016	12-JUL-2016	07-JUL-2016	12-JUL-2016	07-JUL-2016	27-JUL-2016	
Total Nitrogen	.01 WT%		0.03	0.03	0.05	0.02	0.05	0.14
Total Organic Carbon	.04 WT%		0.12	0.16	0.45	0.12	0.39	1.59

Source:		8512-H	8513-H	8515-H	8517-H	8520-H	8521-H	
Analyte	MDL Units	27-JUL-2016	12-JUL-2016	12-JUL-2016	28-JUL-2016	19-JUL-2016	27-JUL-2016	
Total Nitrogen	.01 WT%		0.18	ND	ND	0.05	0.06	0.20
Total Organic Carbon	.04 WT%		2.70	0.06	0.07	0.40	0.51	2.58

Source:		8522-H	8523-H	8526-H	8527-H	8529-H	8533-H	
Analyte	MDL Units	19-JUL-2016	19-JUL-2016	19-JUL-2016	27-JUL-2016	19-JUL-2016	19-JUL-2016	
Total Nitrogen	.01 WT%		0.05	0.07	0.06	0.15	0.04	0.05
Total Organic Carbon	.04 WT%		2.46	0.59	0.53	1.79	0.38	4.27

Source:		8536-H	8539-H	
Analyte	MDL Units	20-JUL-2016	20-JUL-2016	
Total Nitrogen	.01 WT%		0.12	0.07
Total Organic Carbon	.04 WT%		2.36	0.75

ND=not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
ANNUAL OCEAN SEDIMENT - RANDOM

Trace Metals

Annual 2016

Source:	8501	8502	8503	8504	8505	8506	8507
Date:	07-JUL-2016	12-JUL-2016	07-JUL-2016	07-JUL-2016	12-JUL-2016	06-JUL-2016	07-JUL-2016
Analyte	MDL	Units					
Aluminum	2.4 MG/KG	5640	6610	5530	11200	6040	2050
Antimony	.79 MG/KG	ND	1.1	1.0	2.2	ND	ND
Arsenic	.308 MG/KG	1.46	1.21	1.36	2.41	0.72	2.57
Beryllium	.02 MG/KG	ND	ND	ND	0.31	ND	ND
Cadmium	.13 MG/KG	ND	ND	ND	0.60	ND	ND
Chromium	.136 MG/KG	11.8	14.4	13.3	27.8	12.1	6.6
Copper	.695 MG/KG	1.7	3.4	3.2	10.1	2.0	ND
Iron	2.88 MG/KG	6650	7490	7990	15200	6350	5220
Lead	.3 MG/KG	2.1	2.4	3.2	5.2	1.9	2.1
Manganese	.19 MG/KG	70.1	72.2	69.8	104	65.5	17.2
Mercury	.004 MG/KG	ND	0.007	0.013	0.037	0.004	ND
Nickel	.3 MG/KG	2.8	3.8	4.8	10.7	2.7	1.0
Selenium	.24 MG/KG	ND	ND	ND	0.78	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	ND	ND	ND	ND
Tin	.409 MG/KG	ND	ND	0.5	1.6	ND	ND
Zinc	1.45 MG/KG	15.5	18.3	18.6	37.4	15.8	8.0
							31.2

Source:	8508	8509	8510	8512	8513	8514	8515
Date:	06-JUL-2016	12-JUL-2016	27-JUL-2016	27-JUL-2016	12-JUL-2016	06-JUL-2016	12-JUL-2016
Analyte	MDL	Units					
Aluminum	2.4 MG/KG	6810	8760	18400	19500	4090	4040
Antimony	.79 MG/KG	1.0	2.1	2.4	2.7	ND	ND
Arsenic	.308 MG/KG	1.41	1.42	1.78	1.99	0.98	0.87
Beryllium	.02 MG/KG	ND	ND	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	ND	ND	ND	ND	ND
Chromium	.136 MG/KG	14.5	19.2	44.4	48.4	7.4	9.7
Copper	.695 MG/KG	3.2	9.5	24.3	20.7	1.0	0.8
Iron	2.88 MG/KG	7820	13200	22100	22300	5900	4590
Lead	.3 MG/KG	2.5	5.2	10.0	7.5	1.3	1.6
Manganese	.19 MG/KG	76.0	91.4	165	155	59.8	63.5
Mercury	.004 MG/KG	0.013	0.063	0.139	0.086	0.006	ND
Nickel	.3 MG/KG	3.8	5.2	14.8	19.7	1.7	1.7
Selenium	.24 MG/KG	ND	ND	ND	<0.24	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	ND	ND	ND	ND
Tin	.409 MG/KG	<0.409	0.9	1.8	1.7	ND	ND
Zinc	1.45 MG/KG	19.4	34.7	62.1	61.9	15.3	10.5
							11.5

ND= not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
ANNUAL OCEAN SEDIMENT - RANDOM

Trace Metals

Annual 2016

Source:	8516	8518	8519	8520	8521	8522	8523
Date:	14-JUL-2016	13-JUL-2016	19-JUL-2016	19-JUL-2016	27-JUL-2016	19-JUL-2016	19-JUL-2016
Analyte	MDL	Units					
Aluminum	2.4 MG/KG	19700	13200	10500	9570	20100	1940
Antimony	.79 MG/KG	2.2	1.6	1.3	1.3	2.4	ND
Arsenic	.308 MG/KG	1.74	2.22	1.16	1.70	2.56	4.09
Beryllium	.02 MG/KG	ND	ND	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	ND	ND	0.18	ND	ND
Chromium	.136 MG/KG	46.1	28.2	23.2	21.0	50.2	6.0
Copper	.695 MG/KG	24.2	9.7	7.9	6.6	21.6	1.3
Iron	2.88 MG/KG	21800	15700	12900	12200	21700	4350
Lead	.3 MG/KG	9.9	5.1	3.7	3.6	5.0	2.6
Manganese	.19 MG/KG	164	134	104	97.4	165	55.5
Mercury	.004 MG/KG	0.226	0.038	0.036	0.026	0.053	ND
Nickel	.3 MG/KG	16.4	8.6	7.8	7.1	20.5	1.6
Selenium	.24 MG/KG	ND	ND	0.48	0.45	0.30	ND
Silver	.206 MG/KG	ND	ND	ND	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	ND	ND	ND	ND
Tin	.409 MG/KG	1.8	1.1	0.7	0.6	1.1	ND
Zinc	1.45 MG/KG	61.7	40.3	33.0	30.4	64.8	10.0

Source:	8524	8525	8526	8527	8528	8529	8530
Date:	13-JUL-2016	13-JUL-2016	19-JUL-2016	27-JUL-2016	13-JUL-2016	19-JUL-2016	13-JUL-2016
Analyte	MDL	Units					
Aluminum	2.4 MG/KG	7520	8660	10100	16100	7130	7850
Antimony	.79 MG/KG	1.1	1.1	1.3	2.1	1.9	1.2
Arsenic	.308 MG/KG	1.21	2.07	1.34	1.55	3.84	2.27
Beryllium	.02 MG/KG	ND	ND	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	ND	ND	0.17	ND	ND
Chromium	.136 MG/KG	17.2	19.8	22.5	42.0	28.0	17.9
Copper	.695 MG/KG	4.2	4.4	6.2	16.2	2.3	4.0
Iron	2.88 MG/KG	10500	11500	13100	19700	22400	10400
Lead	.3 MG/KG	2.9	3.6	3.8	5.6	3.6	3.4
Manganese	.19 MG/KG	81.00	118.00	106.00	137.00	59.30	109.00
Mercury	.004 MG/KG	0.015	0.016	0.036	0.053	0.014	0.014
Nickel	.3 MG/KG	5.1	4.6	7.1	14.7	4.5	4.2
Selenium	.24 MG/KG	ND	ND	0.55	0.87	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	ND	ND	ND	ND
Tin	.409 MG/KG	0.5	0.7	0.8	1.2	0.6	0.7
Zinc	1.45 MG/KG	25.7	30.6	32.2	54.8	38.4	28.6

ND= not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
ANNUAL OCEAN SEDIMENT - RANDOM

Trace Metals

Annual 2016

Source:	8531	8532	8533	8534	8536	8537	8538
Date:	13-JUL-2016	18-JUL-2016	19-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016
Analyte:	MDL Units						
Aluminum	2.4 MG/KG	8290	10200	3410	10600	7000	20700
Antimony	.79 MG/KG	1.5	1.4	1.0	1.3	1.1	2.6
Arsenic	.308 MG/KG	1.55	0.97	4.18	1.56	2.01	1.78
Beryllium	.02 MG/KG	ND	ND	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	0.18	ND	ND	ND	0.17
Chromium	.136 MG/KG	24.1	23.9	15.5	24.5	17.0	52.1
Copper	.695 MG/KG	3.7	6.7	ND	5.9	3.7	20.8
Iron	2.88 MG/KG	15500	13000	8560	14300	9840	23000
Lead	.3 MG/KG	3.0	3.9	4.4	4.5	2.8	6.9
Manganese	.19 MG/KG	85.4	104	85.0	129	83.1	178
Mercury	.004 MG/KG	0.017	0.023	0.004	0.020	0.015	0.060
Nickel	.3 MG/KG	5.2	7.5	1.4	6.4	4.6	15.9
Selenium	.24 MG/KG	ND	0.68	ND	ND	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	ND	ND	ND	ND
Tin	.409 MG/KG	0.6	0.7	0.5	0.9	0.6	1.6
Zinc	1.45 MG/KG	34.0	34.4	24.4	37.0	26.2	66.1

Source:	8539	8540	8542	8547	8517
Date:	20-JUL-2016	20-JUL-2016	14-JUL-2016	20-JUL-2016	28-JUL-2016
Analyte	MDL Units				
Aluminum	2.4 MG/KG	11800	27500	8810	12900
Antimony	.79 MG/KG	1.5	3.1	4.1	1.6
Arsenic	.308 MG/KG	3.26	4.06	2.66	1.54
Beryllium	.02 MG/KG	ND	ND	ND	ND
Cadmium	.13 MG/KG	ND	0.24	ND	0.24
Chromium	.136 MG/KG	26.3	69.6	29.9	29.9
Copper	.695 MG/KG	7.9	31.8	6.0	8.7
Iron	2.88 MG/KG	15400	28100	20900	16000
Lead	.3 MG/KG	4.3	8.8	534.0	8.5
Manganese	.19 MG/KG	152	218	61.6	136
Mercury	.004 MG/KG	0.017	0.100	0.022	0.028
Nickel	.3 MG/KG	6.8	20.3	7.3	8.5
Selenium	.24 MG/KG	ND	0.64	ND	ND
Silver	.206 MG/KG	ND	ND	1.70	ND
Thallium	.43 MG/KG	ND	ND	ND	ND
Tin	.409 MG/KG	0.7	2.0	81.8	1.4
Zinc	1.45 MG/KG	44.8	83.5	36.4	41.9

ND= not detected

SOUTH BAY WASTEWATER RECLAMATION PLANT
ANNUAL OCEAN SEDIMENT - RANDOM

Trace Metals

Annual 2016

Source:	8501-H	8502-H	8503-H	8505-H	8507-H	8510-H	8512-H
Date:	07-JUL-2016	12-JUL-2016	07-JUL-2016	12-JUL-2016	07-JUL-2016	27-JUL-2016	27-JUL-2016
Analyte	MDL	Units					
Aluminum	2.4 MG/KG	5840	2250	5400	6010	8460	19100
Antimony	.79 MG/KG	0.8	ND	<0.79	ND	1.3	2.3
Arsenic	.308 MG/KG	1.38	2.31	1.26	0.82	1.57	1.75
Beryllium	.02 MG/KG	ND	ND	ND	ND	0.40	ND
Cadmium	.13 MG/KG	ND	ND	ND	ND	ND	ND
Chromium	.136 MG/KG	12.9	7.9	12.4	11.9	17.8	42.9
Copper	.695 MG/KG	1.8	ND	3.3	2.0	10.8	27.6
Iron	2.88 MG/KG	7150	4970	7520	6250	11500	22500
Lead	.3 MG/KG	2.2	1.9	3.0	1.8	5.7	10.4
Manganese	.19 MG/KG	72.9	25.7	67.3	66.2	87.0	166
Mercury	.004 MG/KG	0.004	ND	0.013	0.004	0.037	0.139
Nickel	.3 MG/KG	2.9	1.3	4.6	2.6	5.5	15.0
Selenium	.24 MG/KG	ND	ND	ND	ND	ND	ND
Silver	.206 MG/KG	ND	ND	ND	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	ND	ND	ND	ND
Tin	.409 MG/KG	ND	ND	0.5	ND	0.9	2.5
Zinc	1.45 MG/KG	16.2	9.0	18.0	15.8	40.2	63.6

Source:	8513-H	8515-H	8517-H	8520-H	8521-H	8522-H	8523-H
Date:	12-JUL-2016	12-JUL-2016	28-JUL-2016	19-JUL-2016	27-JUL-2016	19-JUL-2016	19-JUL-2016
Analyte	MDL	Units					
Aluminum	2.4 MG/KG	5350	3720	NA	8880	21000	1840
Antimony	.79 MG/KG	ND	ND	NA	1.1	2.6	ND
Arsenic	.308 MG/KG	1.07	1.42	NA	1.07	1.55	4.05
Beryllium	.02 MG/KG	ND	ND	NA	ND	ND	ND
Cadmium	.13 MG/KG	ND	ND	NA	ND	ND	ND
Chromium	.136 MG/KG	9.3	7.3	NA	19.6	54.2	5.2
Copper	.695 MG/KG	1.2	1.1	NA	6.1	24.7	1.2
Iron	2.88 MG/KG	7600	5050	NA	10900	22100	4000
Lead	.3 MG/KG	1.7	2.8	NA	4.0	6.3	2.4
Manganese	.19 MG/KG	79.7	51.4	NA	90.7	173	47.4
Mercury	.004 MG/KG	0.004	0.008	0.033	0.024	0.064	ND
Nickel	.3 MG/KG	2.1	1.5	NA	6.8	20.9	1.2
Selenium	.24 MG/KG	ND	ND	ND	0.44	0.31	ND
Silver	.206 MG/KG	ND	ND	NA	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	NA	ND	ND	ND
Tin	.409 MG/KG	ND	ND	NA	0.8	1.3	ND
Zinc	1.45 MG/KG	22.5	13.0	NA	28.6	67.9	9.4

ND= not detected; NA= not analyzed

SOUTH BAY WASTEWATER RECLAMATION PLANT
ANNUAL OCEAN SEDIMENT - RANDOM

Trace Metals

Annual 2016

Source:	8526-H	8527-H	8529-H	8533-H	8536-H	8539-H
Date:	19-JUL-2016	27-JUL-2016	19-JUL-2016	19-JUL-2016	20-JUL-2016	20-JUL-2016
Analyte	MDL	Units				
=====	====	=====	=====	=====	=====	=====
Aluminum	2.4	MG/KG	9910	16800	8070	3510
Antimony	.79	MG/KG	1.4	2.1	0.9	1.0
Arsenic	.308	MG/KG	1.13	1.62	2.02	4.61
Beryllium	.02	MG/KG	ND	ND	ND	ND
Cadmium	.13	MG/KG	ND	0.19	ND	ND
Chromium	.136	MG/KG	22.2	43.9	18.0	13.9
Copper	.695	MG/KG	6.6	17.4	4.0	ND
Iron	2.88	MG/KG	12400	19100	10600	8570
Lead	.3	MG/KG	3.8	5.4	3.8	4.0
Manganese	.19	MG/KG	103	142	114	87.6
Mercury	.004	MG/KG	0.025	0.047	0.018	ND
Nickel	.3	MG/KG	6.9	15.0	4.5	1.6
Selenium	.24	MG/KG	0.58	0.85	ND	ND
Silver	.206	MG/KG	ND	ND	ND	ND
Thallium	.43	MG/KG	ND	ND	ND	ND
Tin	.409	MG/KG	0.8	1.2	0.7	0.6
Zinc	1.45	MG/KG	32.4	55.8	28.4	23.4

ND= not detected

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8501 07-JUL-2016	8502 12-JUL-2016	8503 07-JUL-2016	8504 07-JUL-2016	8505 12-JUL-2016	8506 06-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	E13	DNQ63	E45	DNQ128	ND	ND
p,p-DDE	31.4	NG/KG	DNQ138	336	582	1180	DNQ154	DNQ88
p,p-DDT	47.7	NG/KG	ND	DNQ175	DNQ89	DNQ75	DNQ97	ND
o,p-DDD	31.2	NG/KG	ND	E25	E18	DNQ35	ND	ND
o,p-DDE	31.8	NG/KG	ND	ND	ND	DNQ71	ND	ND
o,p-DDT	43.3	NG/KG	ND	E42	ND	ND	ND	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND	ND	ND	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	0	336	582	1180	0	0
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
Chlorinated Hydrocarbons	212	NG/KG	0	336	582	1180	0	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8507 07-JUL-2016	8508 06-JUL-2016	8509 12-JUL-2016	8510 27-JUL-2016	8512 27-JUL-2016	8513 12-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	DNQ94	DNQ58	<53.3	DNQ110	DNQ78	ND
p,p-DDE	31.4	NG/KG	920	622	245	359	584	DNQ35
p,p-DDT	47.7	NG/KG	DNQ113	DNQ57	DNQ118	ND	ND	ND
o,p-DDD	31.2	NG/KG	<31.2	ND	E27	ND	ND	ND
o,p-DDE	31.8	NG/KG	ND	ND	E19	DNQ38	DNQ55	ND
o,p-DDT	43.3	NG/KG	ND	ND	<43.3	ND	ND	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG	ND	ND	ND	DNQ64	ND	ND
Alpha Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND	ND	ND	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	ND
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Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	920	622	245	359	584	0
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
<hr/>								
Chlorinated Hydrocarbons	212	NG/KG	920	622	245	359	584	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8514 06-JUL-2016	8515 12-JUL-2016	8516 14-JUL-2016	8518 13-JUL-2016	8519 19-JUL-2016	8520 19-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	ND	E36	DNQ88	DNQ66	DNQ101	DNQ78
p,p-DDE	31.4	NG/KG	DNQ47	DNQ60	429	515	1020	845
p,p-DDT	47.7	NG/KG	ND	ND	DNQ82	126	474	DNQ160
o,p-DDD	31.2	NG/KG	ND	ND	E25	ND	DNQ33	DNQ37
o,p-DDE	31.8	NG/KG	ND	ND	E30	E32	DNQ57	DNQ56
o,p-DDT	43.3	NG/KG	ND	ND	ND	<43.3	DNQ102	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	ND	DNQ93	ND	ND	E48
Gamma (trans) Chlordane	52.2	NG/KG	ND	ND	DNQ80	ND	E26	E38
Alpha Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND	DNQ69	ND	ND	DNQ32
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	E51
Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	0	0	429	641	1494	845
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
Chlorinated Hydrocarbons	212	NG/KG	0	0	429	641	1494	845

The sample container for source 8517 was broken; therefore the organic analyses were not performed.

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8521 27-JUL-2016	8522 19-JUL-2016	8523 19-JUL-2016	8524 13-JUL-2016	8525 13-JUL-2016	8526 19-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	DNQ72	ND	DNQ79	E36	E32	ND
p,p-DDE	31.4	NG/KG	542	DNQ43	942	343	DNQ156	824
p,p-DDT	47.7	NG/KG	DNQ61	ND	DNQ115	E42	271	DNQ131
o,p-DDD	31.2	NG/KG	ND	ND	ND	ND	E15	ND
o,p-DDE	31.8	NG/KG	DNQ43	ND	DNQ54	ND	ND	DNQ60
o,p-DDT	43.3	NG/KG	ND	ND	ND	ND	DNQ53	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	ND	DNQ53	E35	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG	ND	ND	E39	E22	ND	ND
Alpha Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND	ND	ND	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	ND
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Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	542	0	942	343	271	824
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
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Chlorinated Hydrocarbons	212	NG/KG	542	0	0	343	271	824

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8527 27-JUL-2016	8528 13-JUL-2016	8529 19-JUL-2016	8530 13-JUL-2016	8531 13-JUL-2016	8532 18-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	DNQ84	ND	E40	ND	E23	E40
p,p-DDE	31.4	NG/KG	643	DNQ129	268	DNQ86	218	483
p,p-DDT	47.7	NG/KG	DNQ67	DNQ159	ND	E30	DNQ67	DNQ63
o,p-DDD	31.2	NG/KG	DNQ32	ND	ND	ND	ND	E18
o,p-DDE	31.8	NG/KG	DNQ49	ND	ND	ND	ND	E30
o,p-DDT	43.3	NG/KG	ND	E41	ND	ND	ND	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	DNQ110	ND	ND	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG	ND	DNQ78	ND	ND	ND	ND
Alpha Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	DNQ42	ND	ND	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	ND
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Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	643	0	268	0	218	483
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
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Chlorinated Hydrocarbons	212	NG/KG	643	0	268	0	218	483

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8533 19-JUL-2016	8534 20-JUL-2016	8536 20-JUL-2016	8537 20-JUL-2016	8538 20-JUL-2016	8539 20-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	DNQ60	ND	E26	DNQ146	E25	DNQ111
p,p-DDE	31.4	NG/KG	352	562	318	1520	231	869
p,p-DDT	47.7	NG/KG	E31	E42	ND	DNQ163	ND	ND
o,p-DDD	31.2	NG/KG	DNQ49	ND	ND	DNQ84	ND	E24
o,p-DDE	31.8	NG/KG	DNQ52	DNQ52	DNQ36	DNQ138	ND	DNQ61
o,p-DDT	43.3	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	DNQ45	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	DNQ76	ND	ND	DNQ76	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG	E47	ND	ND	DNQ66	ND	ND
Alpha Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordene	NG/KG	NA	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	DNQ37	ND	ND	DNQ72	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	ND
Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	352	562	318	1520	231	869
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
Chlorinated Hydrocarbons	212	NG/KG	352	562	318	1520	231	869

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8540 20-JUL-2016	8542 14-JUL-2016	8547 20-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND
p,p-DDD	53.3	NG/KG	DNQ163	E24	DNQ74
p,p-DDE	31.4	NG/KG	1410	271	1130
p,p-DDT	47.7	NG/KG	DNQ240	ND	DNQ57
o,p-DDD	31.2	NG/KG	DNQ56	ND	<31.2
o,p-DDE	31.8	NG/KG	DNQ125	ND	DNQ77
o,p-DDT	43.3	NG/KG	ND	ND	ND
Heptachlor	29.6	NG/KG	ND	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG	ND	ND	ND
Alpha Chlordene		NG/KG	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND
Aldrin + Dieldrin	103	NG/KG	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0
DDT and derivatives	53.3	NG/KG	1410	271	1130
Chlordane + related cmpds.	78.2	NG/KG	0	0	0
Chlorinated Hydrocarbons	212	NG/KG	1410	271	1130

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8501-H	8502-H	8503-H	8505-H	8507-H	8510-H
			07-JUL-2016	12-JUL-2016	07-JUL-2016	12-JUL-2016	07-JUL-2016	27-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	ND	E33	E51	E42	DNQ54	702
p,p-DDE	31.4	NG/KG	DNQ69	DNQ133	378	DNQ139	380	403
p,p-DDT	47.7	NG/KG	ND	ND	DNQ91	ND	ND	7350
o,p-DDD	31.2	NG/KG	ND	ND	ND	ND	E27	E27
o,p-DDE	31.8	NG/KG	ND	E20	E31	ND	DNQ172	DNQ35
o,p-DDT	43.3	NG/KG	ND	ND	ND	ND	ND	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	ND	DNQ39	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	ND	ND	ND	E40	ND
Gamma (trans) Chlordane	52.2	NG/KG	ND	ND	ND	ND	E31	ND
Alpha Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND	ND	ND	DNQ30	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	238	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	ND
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Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	0	0	378	0	618	8455
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
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Chlorinated Hydrocarbons	212	NG/KG	0	0	378	0	618	8455

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8512-H 27-JUL-2016	8513-H 12-JUL-2016	8515-H 12-JUL-2016	8517-H 28-JUL-2016	8520-H 19-JUL-2016	8521-H 27-JUL-2016
Aldrin	41.6	NG/KG		ND	ND	ND	ND	ND
Dieldrin	103	NG/KG		ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG		ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG		ND	ND	ND	ND	ND
BHC, Gamma isomer	40.1	NG/KG		ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG		ND	ND	ND	ND	ND
p,p-DDD	53.3	NG/KG	DNQ153	DNQ65	E26	<53.3	DNQ69	DNQ70
p,p-DDE	31.4	NG/KG		742	222	DNQ45	371	945
p,p-DDT	47.7	NG/KG	DNQ129		ND	E24	DNQ66	DNQ104
o,p-DDD	31.2	NG/KG		ND	DNQ49	ND	ND	DNQ35
o,p-DDE	31.8	NG/KG	DNQ34		ND	E19	<31.8	ND
o,p-DDT	43.3	NG/KG		ND	ND	E35	ND	E46
Heptachlor	29.6	NG/KG		ND	ND	ND	ND	ND
Heptachlor epoxide	212	NG/KG		ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	DNQ88		ND	E48	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG		ND	ND	ND	<52.2	ND
Alpha Chlordene		NG/KG		NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG		NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG		ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG		ND	ND	ND	ND	ND
Cis Nonachlor	81.9	NG/KG		ND	ND	ND	ND	ND
Alpha Endosulfan	53.6	NG/KG		ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG		ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG		ND	ND	ND	ND	ND
Endrin	128	NG/KG		ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG		ND	ND	ND	ND	ND
Mirex	25.8	NG/KG		ND	ND	ND	ND	ND
Methoxychlor	66	NG/KG		ND	ND	ND	ND	ND
<hr/>								
Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	0	0	0
DDT and derivatives	53.3	NG/KG	742	222	0	371	945	439
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
<hr/>								
Chlorinated Hydrocarbons	212	NG/KG	742	222	0	371	945	439

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8522-H	8523-H	8526-H	8527-H	8529-H	8533-H
			19-JUL-2016	19-JUL-2016	19-JUL-2016	27-JUL-2016	19-JUL-2016	19-JUL-2016
Aldrin	41.6	NG/KG	ND	ND	ND	ND	ND	ND
Dieldrin	103	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND	ND	277	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND	ND	DNQ229	ND	ND
p,p-DDD	53.3	NG/KG	ND	DNQ81	DNQ78	DNQ169	ND	E53
p,p-DDE	31.4	NG/KG	ND	842	918	840	291	548
p,p-DDT	47.7	NG/KG	ND	DNQ130	DNQ92	DNQ152	ND	ND
o,p-DDD	31.2	NG/KG	ND	ND	ND	DNQ120	ND	DNQ32
o,p-DDE	31.8	NG/KG	ND	DNQ50	DNQ61	DNQ126	ND	DNQ50
o,p-DDT	43.3	NG/KG	ND	E31	ND	DNQ89	ND	ND
Heptachlor	29.6	NG/KG	ND	ND	ND	E27	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	ND	ND	ND	DNQ125	ND	ND
Gamma (trans) Chlordane	52.2	NG/KG	ND	ND	ND	DNQ101	E32	ND
Alpha Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/KG	NA	NA	NA	NA	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND	ND	ND	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND	ND	ND	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND	ND	DNQ101	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND	ND	ND	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND	ND	ND	ND	ND
Endrin	128	NG/KG	ND	ND	ND	ND	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND	ND	ND	ND	ND
Mirex	25.8	NG/KG	ND	ND	ND	DNQ63	ND	ND
Methoxychlor	66	NG/KG	ND	ND	ND	ND	ND	ND
<hr/>								
Aldrin + Dieldrin	103	NG/KG	0	0	0	0	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0	0	277	0	0
DDT and derivatives	53.3	NG/KG	0	842	918	840	291	548
Chlordane + related cmpds.	78.2	NG/KG	0	0	0	0	0	0
<hr/>								
Chlorinated Hydrocarbons	212	NG/KG	0	842	918	1117	291	548

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Chlorinated Pesticide Analysis - Random Stations

Annual 2016

Source:	8536-H		8539-H	
Analyte	MDL	Units	20-JUL-2016	20-JUL-2016
Aldrin	41.6	NG/KG	ND	ND
Dieldrin	103	NG/KG	ND	ND
BHC, Alpha isomer	62.7	NG/KG	ND	ND
BHC, Beta isomer	52.7	NG/KG	ND	ND
BHC, Gamma isomer	40.1	NG/KG	ND	ND
BHC, Delta isomer	47.1	NG/KG	ND	ND
p,p-DDD	53.3	NG/KG	E36	DNQ119
p,p-DDE	31.4	NG/KG	267	831
p,p-DDT	47.7	NG/KG	ND	ND
o,p-DDD	31.2	NG/KG	E16	ND
o,p-DDE	31.8	NG/KG	DNQ36	DNQ74
o,p-DDT	43.3	NG/KG	ND	ND
Heptachlor	29.6	NG/KG	ND	ND
Heptachlor epoxide	212	NG/KG	ND	ND
Alpha (cis) Chlordane	49.7	NG/KG	E47	ND
Gamma (trans) Chlordane	52.2	NG/KG	E23	ND
Alpha Chlordene		NG/KG	NA	NA
Gamma Chlordene		NG/KG	NA	NA
Oxychlordane	78.2	NG/KG	ND	ND
Trans Nonachlor	25.3	NG/KG	ND	ND
Cis Nonachlor	81.9	NG/KG	ND	ND
Alpha Endosulfan	53.6	NG/KG	ND	ND
Beta Endosulfan	138	NG/KG	ND	ND
Endosulfan Sulfate	75.5	NG/KG	ND	ND
Endrin	128	NG/KG	ND	ND
Endrin aldehyde	72.9	NG/KG	ND	ND
Mirex	25.8	NG/KG	ND	ND
Methoxychlor	66	NG/KG	ND	ND
<hr/>				
Aldrin + Dieldrin	103	NG/KG	0	0
Hexachlorocyclohexanes	62.7	NG/KG	0	0
DDT and derivatives	53.3	NG/KG	267	831
Chlordane + related cmpds.	78.2	NG/KG	0	0
<hr/>				
Chlorinated Hydrocarbons	212	NG/KG	267	831

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

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

SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source: Analyte	MDL	Units	8501 07-JUL-2016	8502 12-JUL-2016	8503 07-JUL-2016	8504 07-JUL-2016	8505 12-JUL-2016	8506 06-JUL-2016	8507 07-JUL-2016
PCB 18	53.8	NG/KG	ND	E9	ND	ND	ND	E7	DNQ120
PCB 28	40.3	NG/KG	ND	ND	ND	ND	ND	ND	DNQ160
PCB 52	36.6	NG/KG	ND	E12	E13	ND	E5	ND	1300
PCB 49	34.4	NG/KG	ND	E12	E13	E30	E10	ND	400
PCB 44	38.8	NG/KG	ND	E14	ND	ND	E7	ND	DNQ530
PCB 37	16.9	NG/KG	ND						
PCB 74	17.9	NG/KG	ND	ND	ND	ND	ND	ND	DNQ210
PCB 70	21.8	NG/KG	ND	E17	ND	DNQ61	E5	E10	870
PCB 66	16.5	NG/KG	ND	E14	DNQ27	DNQ71	E8	E13	DNQ400
PCB 101	30	NG/KG	ND	ND	DNQ40	DNQ142	ND	ND	2500
PCB 99	31	NG/KG	ND	ND	DNQ35	DNQ98	ND	ND	980
PCB 119	27.3	NG/KG	ND	ND	ND	ND	ND	ND	DNQ120
PCB 87	30.7	NG/KG	ND	ND	ND	ND	ND	ND	DNQ990
PCB 110	53.6	NG/KG	ND	E22	E41	DNQ139	ND	ND	2400
PCB 81	22.3	NG/KG	ND						
PCB 151	56.2	NG/KG	ND	ND	ND	ND	ND	ND	DNQ320
PCB 77	23.9	NG/KG	ND						
PCB 149	59.6	NG/KG	ND	E21	DNQ79	210	E20	E14	1700
PCB 123	31.3	NG/KG	ND	ND	ND	ND	ND	ND	DNQ210
PCB 118	30.8	NG/KG	ND	ND	DNQ45	DNQ199	ND	ND	2300
PCB 114	33	NG/KG	ND						
PCB 105	23.4	NG/KG	ND	E10	DNQ29	DNQ95	ND	ND	990
PCB 138	45.5	NG/KG	ND	ND	DNQ79	230	E18	E19	2100
PCB 158	26.7	NG/KG	ND	ND	ND	ND	ND	ND	DNQ310
PCB 187	36.6	NG/KG	ND	E16	DNQ54	DNQ121	E18	ND	340
PCB 183	28.5	NG/KG	ND	ND	ND	E24	ND	ND	DNQ190
PCB 126	25.5	NG/KG	ND						
PCB 128	34.3	NG/KG	ND	ND	E34	DNQ62	ND	ND	DNQ530
PCB 167	23.2	NG/KG	ND	ND	ND	ND	ND	ND	DNQ86
PCB 177	25.8	NG/KG	ND	ND	ND	DNQ57	ND	ND	DNQ180
PCB 201	21.4	NG/KG	ND	ND	ND	ND	ND	ND	DNQ33
PCB 156	28.6	NG/KG	ND	ND	ND	ND	ND	ND	DNQ320
PCB 157	23	NG/KG	ND	ND	ND	ND	ND	ND	DNQ75
PCB 180	56.7	NG/KG	ND	ND	DNQ67	DNQ126	ND	ND	640
PCB 170	44.2	NG/KG	ND	ND	E15	ND	ND	ND	DNQ350
Total PCB's	59.6	NG/KG	0	0	0	440	0	0	16520

ND= not detected

E= Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source:		8508	8509	8510	8512	8513	8514	8515	
Analyte	MDL	Units	06-JUL-2016	12-JUL-2016	27-JUL-2016	27-JUL-2016	12-JUL-2016	06-JUL-2016	12-JUL-2016
PCB 18	53.8	NG/KG	E10	E41	E21	ND	E18	E6	E10
PCB 28	40.3	NG/KG	E15	DNQ60	E33	E21	E27	E9	E13
PCB 52	36.6	NG/KG	E14	630	DNQ111	E34	E20	E9	E19
PCB 49	34.4	NG/KG	E10	DNQ130	DNQ81	E33	E14	ND	ND
PCB 44	38.8	NG/KG	ND	DNQ280	DNQ59	E15	E19	E7	E16
PCB 37	16.9	NG/KG	ND	DNQ29	E15	ND	E11	E8	E16
PCB 74	17.9	NG/KG	ND	DNQ97	DNQ35	E16	E11	E8	DNQ19
PCB 70	21.8	NG/KG	E13	410	DNQ86	DNQ40	E13	E8	E21
PCB 66	16.5	NG/KG	E14	DNQ160	DNQ78	DNQ37	E15	E9	DNQ17
PCB 101	30	NG/KG	E23	1000	DNQ213	DNQ84	E21	ND	E28
PCB 99	31	NG/KG	E23	440	DNQ169	DNQ44	ND	ND	E18
PCB 119	27.3	NG/KG	ND	DNQ63	ND	ND	ND	ND	E27
PCB 87	30.7	NG/KG	ND	500	DNQ99	ND	ND	ND	ND
PCB 110	53.6	NG/KG	ND	1200	300	DNQ90	E18	ND	E30
PCB 81	22.3	NG/KG	E9	E2	ND	ND	E8	ND	E17
PCB 151	56.2	NG/KG	E13	DNQ160	ND	ND	E14	ND	E28
PCB 77	23.9	NG/KG	ND	E9	ND	ND	ND	ND	DNQ26
PCB 149	59.6	NG/KG	E33	720	320	DNQ244	E27	E16	E28
PCB 123	31.3	NG/KG	ND	DNQ84	ND	ND	ND	ND	ND
PCB 118	30.8	NG/KG	ND	920	300	DNQ108	E15	ND	DNQ34
PCB 114	33	NG/KG	ND						
PCB 105	23.4	NG/KG	ND	410	DNQ110	DNQ34	ND	ND	DNQ30
PCB 138	45.5	NG/KG	ND	880	290	DNQ123	E21	ND	E32
PCB 158	26.7	NG/KG	ND	DNQ130	E25	ND	E13	ND	E15
PCB 187	36.6	NG/KG	E26	250	DNQ116	670	E20	ND	E40
PCB 183	28.5	NG/KG	ND	DNQ89	DNQ54	DNQ241	ND	ND	E20
PCB 126	25.5	NG/KG	ND	ND	ND	ND	ND	ND	E24
PCB 128	34.3	NG/KG	ND	DNQ220	E78	ND	E14	ND	E26
PCB 167	23.2	NG/KG	ND	DNQ40	ND	ND	ND	ND	DNQ29
PCB 177	25.8	NG/KG	ND	DNQ98	ND	DNQ143	ND	ND	ND
PCB 201	21.4	NG/KG	ND	E18	ND	ND	ND	ND	ND
PCB 156	28.6	NG/KG	ND	DNQ140	E26	ND	ND	ND	DNQ29
PCB 157	23	NG/KG	ND	E34	ND	ND	ND	ND	E23
PCB 180	56.7	NG/KG	ND	300	DNQ119	1000	ND	ND	ND
PCB 170	44.2	NG/KG	ND	DNQ150	ND	DNQ141	ND	ND	E26
Total PCB's	59.6	NG/KG	0	7660	1210	1670	0	0	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source:		8516	8518	8519	8520	8521	8522	8523
Analyte	MDL	Units	14-JUL-2016	13-JUL-2016	19-JUL-2016	19-JUL-2016	27-JUL-2016	19-JUL-2016
PCB 18	53.8	NG/KG	E15	E10	ND	E17	E44	ND
PCB 28	40.3	NG/KG	E34	DNQ27	E24	E33	DNQ51	ND
PCB 52	36.6	NG/KG	DNQ50	E36	E34	E31	DNQ47	E4
PCB 49	34.4	NG/KG	DNQ42	E23	E31	E21	E31	E7
PCB 44	38.8	NG/KG	E31	E23	E21	E22	E37	ND
PCB 37	16.9	NG/KG	ND	ND	E12	ND	DNQ20	ND
PCB 74	17.9	NG/KG	DNQ21	E16	DNQ22	DNQ24	DNQ23	ND
PCB 70	21.8	NG/KG	DNQ43	DNQ34	DNQ40	DNQ31	DNQ46	E8
PCB 66	16.5	NG/KG	DNQ53	DNQ35	DNQ43	DNQ30	DNQ45	E6
PCB 101	30	NG/KG	DNQ110	DNQ71	DNQ87	DNQ61	DNQ48	ND
PCB 99	31	NG/KG	DNQ71	DNQ41	DNQ57	DNQ52	DNQ32	ND
PCB 119	27.3	NG/KG	ND	ND	ND	ND	ND	ND
PCB 87	30.7	NG/KG	DNQ40	DNQ23	DNQ43	E28	ND	ND
PCB 110	53.6	NG/KG	DNQ117	DNQ81	DNQ82	DNQ71	DNQ54	ND
PCB 81	22.3	NG/KG	ND	ND	ND	ND	ND	ND
PCB 151	56.2	NG/KG	E44	ND	ND	E35	ND	ND
PCB 77	23.9	NG/KG	ND	ND	ND	DNQ27	E43	ND
PCB 149	59.6	NG/KG	DNQ169	DNQ84	DNQ147	DNQ110	ND	ND
PCB 123	31.3	NG/KG	ND	ND	ND	ND	DNQ64	ND
PCB 118	30.8	NG/KG	DNQ140	DNQ89	DNQ108	DNQ101	ND	ND
PCB 114	33	NG/KG	ND	ND	ND	ND	E58	ND
PCB 105	23.4	NG/KG	DNQ65	DNQ30	DNQ52	DNQ50	DNQ63	ND
PCB 138	45.5	NG/KG	DNQ168	DNQ83	DNQ118	DNQ131	ND	DNQ188
PCB 158	26.7	NG/KG	E18	ND	ND	ND	ND	E20
PCB 187	36.6	NG/KG	DNQ93	DNQ46	DNQ83	DNQ64	ND	DNQ112
PCB 183	28.5	NG/KG	E21	E26	ND	E21	ND	DNQ49
PCB 126	25.5	NG/KG	ND	ND	ND	ND	ND	ND
PCB 128	34.3	NG/KG	DNQ46	DNQ40	ND	DNQ40	ND	DNQ52
PCB 167	23.2	NG/KG	ND	ND	ND	ND	ND	ND
PCB 177	25.8	NG/KG	DNQ42	ND	ND	DNQ52	ND	DNQ44
PCB 201	21.4	NG/KG	ND	ND	ND	ND	ND	ND
PCB 156	28.6	NG/KG	E27	ND	ND	ND	ND	ND
PCB 157	23	NG/KG	ND	ND	ND	ND	ND	ND
PCB 180	56.7	NG/KG	DNQ107	DNQ75	DNQ97	DNQ59	ND	ND
PCB 170	44.2	NG/KG	DNQ53	E40	ND	E40	ND	DNQ99
Total PCB's	59.6	NG/KG	0	0	0	0	0	0

The sample container for source 8517 was broken; therefore the organic analyses were not performed.

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Analyte	MDL	Units	8524 13-JUL-2016	8525 13-JUL-2016	8526 19-JUL-2016	8527 27-JUL-2016	8528 13-JUL-2016	8529 19-JUL-2016	8530 13-JUL-2016
PCB 18	53.8	NG/KG	E19	E16	ND	E14	E12	ND	E8
PCB 28	40.3	NG/KG	ND	E25	ND	E22	E12	ND	E8
PCB 52	36.6	NG/KG	E24	E18	E27	E24	E13	ND	E14
PCB 49	34.4	NG/KG	E28	E26	E24	E25	ND	E17	ND
PCB 44	38.8	NG/KG	E22	E18	E17	E22	E13	ND	E11
PCB 37	16.9	NG/KG	ND	ND	ND	DNQ17	ND	ND	E4
PCB 74	17.9	NG/KG	E16	ND	E17	18	E9	ND	ND
PCB 70	21.8	NG/KG	E19	E14	DNQ34	E20	E11	E15	E11
PCB 66	16.5	NG/KG	DNQ27	DNQ28	DNQ42	DNQ32	E10	DNQ25	E10
PCB 101	30	NG/KG	E26	DNQ35	DNQ70	DNQ37	ND	E24	ND
PCB 99	31	NG/KG	E30	E21	DNQ58	DNQ33	E19	E29	ND
PCB 119	27.3	NG/KG	ND						
PCB 87	30.7	NG/KG	ND						
PCB 110	53.6	NG/KG	E25	E29	DNQ66	E53	ND	E27	E28
PCB 81	22.3	NG/KG	E17	ND	ND	ND	ND	ND	ND
PCB 151	56.2	NG/KG	ND	ND	ND	ND	E13	ND	ND
PCB 77	23.9	NG/KG	ND	ND	ND	E15	ND	ND	ND
PCB 149	59.6	NG/KG	DNQ60	E37	DNQ76	E48	ND	DNQ62	E21
PCB 123	31.3	NG/KG	ND						
PCB 118	30.8	NG/KG	DNQ43	DNQ48	DNQ100	DNQ31	ND	DNQ34	ND
PCB 114	33	NG/KG	ND						
PCB 105	23.4	NG/KG	DNQ28	ND	DNQ37	DNQ30	ND	ND	ND
PCB 138	45.5	NG/KG	DNQ56	DNQ55	DNQ102	E36	E17	DNQ48	E19
PCB 158	26.7	NG/KG	E16	ND	DNQ31	ND	ND	ND	ND
PCB 187	36.6	NG/KG	E30	E32	DNQ61	ND	ND	DNQ48	E19
PCB 183	28.5	NG/KG	E23	ND	E25	ND	ND	ND	ND
PCB 126	25.5	NG/KG	ND						
PCB 128	34.3	NG/KG	E30	ND	ND	ND	ND	ND	ND
PCB 167	23.2	NG/KG	ND						
PCB 177	25.8	NG/KG	ND						
PCB 201	21.4	NG/KG	ND						
PCB 156	28.6	NG/KG	E16	ND	ND	ND	ND	ND	ND
PCB 157	23	NG/KG	ND						
PCB 180	56.7	NG/KG	ND	DNQ60	DNQ109	ND	ND	DNQ63	ND
PCB 170	44.2	NG/KG	ND	E33	ND	ND	ND	ND	ND
Total PCB's	59.6	NG/KG	0	0	0	0	0	0	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source:		8531	8532	8533	8534	8536	8537	8538
Analyte	MDL	Units	13-JUL-2016	18-JUL-2016	19-JUL-2016	20-JUL-2016	20-JUL-2016	20-JUL-2016
PCB 18	53.8	NG/KG	ND	E10	E18	ND	ND	ND
PCB 28	40.3	NG/KG	E20	E23	E17	E16	ND	ND
PCB 52	36.6	NG/KG	E15	E20	E26	E11	E10	DNQ56
PCB 49	34.4	NG/KG	ND	E13	E22	E16	E12	DNQ57
PCB 44	38.8	NG/KG	E13	E16	E22	E11	E11	DNQ44
PCB 37	16.9	NG/KG	ND	ND	ND	E7	ND	ND
PCB 74	17.9	NG/KG	E7	E12	E15	E9	ND	DNQ32
PCB 70	21.8	NG/KG	E14	DNQ22	DNQ22	E17	E14	DNQ56
PCB 66	16.5	NG/KG	E13	DNQ26	DNQ22	DNQ24	E15	DNQ55
PCB 101	30	NG/KG	ND	DNQ53	E26	E28	E15	DNQ83
PCB 99	31	NG/KG	ND	DNQ37	31	E28	ND	DNQ59
PCB 119	27.3	NG/KG	ND	ND	ND	ND	E25	ND
PCB 87	30.7	NG/KG	ND	E25	ND	ND	DNQ52	DNQ52
PCB 110	53.6	NG/KG	ND	DNQ57	E24	E38	E26	DNQ97
PCB 81	22.3	NG/KG	ND	ND	E14	ND	ND	E18
PCB 151	56.2	NG/KG	ND	ND	ND	ND	ND	ND
PCB 77	23.9	NG/KG	ND	ND	E19	ND	ND	ND
PCB 149	59.6	NG/KG	E22	DNQ70	E39	E44	E40	DNQ122
PCB 123	31.3	NG/KG	ND	ND	ND	ND	ND	ND
PCB 118	30.8	NG/KG	E22	DNQ83	E24	DNQ49	DNQ38	DNQ121
PCB 114	33	NG/KG	ND	ND	ND	ND	ND	ND
PCB 105	23.4	NG/KG	ND	DNQ30	E20	ND	ND	DNQ53
PCB 138	45.5	NG/KG	E29	DNQ97	E41	DNQ54	E38	DNQ123
PCB 158	26.7	NG/KG	ND	E22	E18	ND	ND	E25
PCB 187	36.6	NG/KG	E18	E30	E31	E30	E35	DNQ52
PCB 183	28.5	NG/KG	ND	ND	ND	ND	ND	ND
PCB 126	25.5	NG/KG	ND	ND	ND	ND	ND	ND
PCB 128	34.3	NG/KG	ND	DNQ37	ND	ND	ND	DNQ70
PCB 167	23.2	NG/KG	ND	ND	ND	ND	ND	ND
PCB 177	25.8	NG/KG	ND	ND	ND	ND	ND	ND
PCB 201	21.4	NG/KG	ND	ND	ND	ND	ND	ND
PCB 156	28.6	NG/KG	ND	ND	ND	ND	ND	DNQ31
PCB 157	23	NG/KG	ND	ND	ND	ND	ND	ND
PCB 180	56.7	NG/KG	ND	E42	ND	ND	ND	DNQ78
PCB 170	44.2	NG/KG	ND	ND	ND	ND	ND	ND
Total PCB's	59.6	NG/KG	0	0	31	0	0	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source:		8539	8540	8542	8547	
Analyte	MDL	Units	20-JUL-2016	20-JUL-2016	14-JUL-2016	20-JUL-2016
PCB 18	53.8	NG/KG	ND	ND	E12	E20
PCB 28	40.3	NG/KG	ND	ND	E16	E33
PCB 52	36.6	NG/KG	E25	DNQ49	E24	E21
PCB 49	34.4	NG/KG	E24	DNQ47	E20	E28
PCB 44	38.8	NG/KG	ND	E25	E20	E19
PCB 37	16.9	NG/KG	ND	ND	ND	E14
PCB 74	17.9	NG/KG	E17	ND	E14	E15
PCB 70	21.8	NG/KG	DNQ24	DNQ53	E19	DNQ27
PCB 66	16.5	NG/KG	DNQ33	DNQ47	DNQ19	DNQ38
PCB 101	30	NG/KG	DNQ62	DNQ66	DNQ36	DNQ38
PCB 99	31	NG/KG	DNQ50	DNQ54	E28	DNQ45
PCB 119	27.3	NG/KG	ND	ND	ND	ND
PCB 87	30.7	NG/KG	E26	ND	ND	ND
PCB 110	53.6	NG/KG	DNQ63	DNQ77	E41	E44
PCB 81	22.3	NG/KG	ND	ND	ND	ND
PCB 151	56.2	NG/KG	ND	ND	ND	ND
PCB 77	23.9	NG/KG	ND	ND	ND	ND
PCB 149	59.6	NG/KG	E54	DNQ69	E40	DNQ71
PCB 123	31.3	NG/KG	ND	ND	ND	ND
PCB 118	30.8	NG/KG	DNQ58	ND	DNQ50	DNQ59
PCB 114	33	NG/KG	ND	ND	ND	ND
PCB 105	23.4	NG/KG	DNQ36	DNQ34	E22	DNQ27
PCB 138	45.5	NG/KG	DNQ60	DNQ74	DNQ47	DNQ64
PCB 158	26.7	NG/KG	ND	ND	ND	ND
PCB 187	36.6	NG/KG	E34	DNQ58	E28	E46
PCB 183	28.5	NG/KG	ND	ND	ND	ND
PCB 126	25.5	NG/KG	ND	ND	ND	ND
PCB 128	34.3	NG/KG	ND	ND	ND	ND
PCB 167	23.2	NG/KG	ND	ND	ND	ND
PCB 177	25.8	NG/KG	ND	ND	ND	ND
PCB 201	21.4	NG/KG	ND	ND	ND	ND
PCB 156	28.6	NG/KG	ND	ND	ND	ND
PCB 157	23	NG/KG	ND	ND	ND	ND
PCB 180	56.7	NG/KG	ND	ND	ND	ND
PCB 170	44.2	NG/KG	ND	ND	ND	ND
Total PCB's	59.6	NG/KG	0	0	0	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source:		8501-H	8502-H	8503-H	8505-H	8507-H	8510-H	8512-H
Analyte	MDL	Units	07-JUL-2016	12-JUL-2016	07-JUL-2016	12-JUL-2016	07-JUL-2016	27-JUL-2016
PCB 18	53.8	NG/KG	ND	E21	ND	E12	600	E25
PCB 28	40.3	NG/KG	ND	E19	ND	E27	500	DNQ50
PCB 52	36.6	NG/KG	E13	E33	E20	E20	13000	DNQ97
PCB 49	34.4	NG/KG	ND	E22	E15	E20	5300	DNQ80
PCB 44	38.8	NG/KG	ND	E23	ND	E16	4300	DNQ65
PCB 37	16.9	NG/KG	ND	E14	ND	ND	ND	DNQ25
PCB 74	17.9	NG/KG	ND	E13	E12	E16	1400	DNQ33
PCB 70	21.8	NG/KG	ND	E20	ND	DNQ23	6800	DNQ71
PCB 66	16.5	NG/KG	ND	DNQ18	DNQ23	DNQ28	2600	DNQ89
PCB 101	30	NG/KG	ND	E30	E22	DNQ35	18000	280
PCB 99	31	NG/KG	ND	ND	E26	E21	6900	DNQ152
PCB 119	27.3	NG/KG	ND	ND	ND	ND	1100	E26
PCB 87	30.7	NG/KG	ND	ND	ND	ND	9100	DNQ82
PCB 110	53.6	NG/KG	ND	E20	E36	E50	20000	240
PCB 81	22.3	NG/KG	ND	E11	ND	ND	ND	ND
PCB 151	56.2	NG/KG	ND	E14	ND	E18	2500	DNQ154
PCB 77	23.9	NG/KG	ND	ND	E12	E11	DNQ59	ND
PCB 149	59.6	NG/KG	E12	E31	E52	E58	12000	540
PCB 123	31.3	NG/KG	ND	ND	ND	ND	1400	ND
PCB 118	30.8	NG/KG	ND	E27	DNQ63	DNQ39	16000	250
PCB 114	33	NG/KG	ND	ND	ND	ND	490	ND
PCB 105	23.4	NG/KG	ND	E17	ND	DNQ26	6700	DNQ91
PCB 138	45.5	NG/KG	ND	ND	DNQ51	DNQ63	14000	410
PCB 158	26.7	NG/KG	ND	ND	ND	ND	2300	DNQ56
PCB 187	36.6	NG/KG	ND	ND	E33	E35	14000	290
PCB 183	28.5	NG/KG	ND	ND	E16	E16	2600	DNQ100
PCB 126	25.5	NG/KG	ND	ND	ND	ND	ND	ND
PCB 128	34.3	NG/KG	ND	ND	E18	ND	4300	DNQ110
PCB 167	23.2	NG/KG	ND	ND	ND	ND	840	DNQ25
PCB 177	25.8	NG/KG	ND	ND	ND	ND	1200	DNQ124
PCB 201	21.4	NG/KG	ND	ND	E16	ND	2000	ND
PCB 156	28.6	NG/KG	ND	ND	ND	ND	2600	DNQ52
PCB 157	23	NG/KG	ND	ND	ND	ND	570	ND
PCB 180	56.7	NG/KG	ND	ND	DNQ60	DNQ73	6300	470
PCB 170	44.2	NG/KG	ND	ND	ND	DNQ53	2400	DNQ176
Total PCB's	59.6	NG/KG	0	0	0	0	181800	2480
								0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source: Analyte	MDL	Units	8513-H 12-JUL-2016	8515-H 12-JUL-2016	8517-H 28-JUL-2016	8520-H 19-JUL-2016	8521-H 27-JUL-2016	8522-H 19-JUL-2016	8523-H 19-JUL-2016
PCB 18	53.8	NG/KG	E24	DNQ105	E16	ND	E33	ND	ND
PCB 28	40.3	NG/KG	340	DNQ117	E34	ND	E33	ND	ND
PCB 52	36.6	NG/KG	500	DNQ88	E36	E22	E42	E6	E27
PCB 49	34.4	NG/KG	390	DNQ47	E35	E25	E25	ND	DNQ35
PCB 44	38.8	NG/KG	880	DNQ89	E24	E16	E26	ND	E18
PCB 37	16.9	NG/KG	870	DNQ30	E9	ND	E9	ND	ND
PCB 74	17.9	NG/KG	990	DNQ22	E16	ND	E12	ND	E17
PCB 70	21.8	NG/KG	2100	DNQ29	DNQ33	DNQ34	DNQ31	E5	DNQ40
PCB 66	16.5	NG/KG	2100	DNQ30	DNQ48	DNQ37	DNQ27	E11	DNQ46
PCB 101	30	NG/KG	300	DNQ61	DNQ81	DNQ69	DNQ57	ND	DNQ69
PCB 99	31	NG/KG	210	E22	DNQ68	DNQ57	E15	ND	DNQ64
PCB 119	27.3	NG/KG	DNQ52	E16	ND	ND	ND	ND	ND
PCB 87	30.7	NG/KG	220	E30	ND	DNQ35	DNQ24	ND	ND
PCB 110	53.6	NG/KG	340	E43	ND	DNQ80	E66	ND	DNQ76
PCB 81	22.3	NG/KG	E15	E10	ND	ND	ND	ND	ND
PCB 151	56.2	NG/KG	ND	DNQ57	ND	ND	ND	ND	ND
PCB 77	23.9	NG/KG	260	E19	ND	ND	ND	ND	ND
PCB 149	59.6	NG/KG	E36	DNQ100	DNQ97	DNQ101	E38	ND	DNQ112
PCB 123	31.3	NG/KG	DNQ40	E26	ND	ND	ND	ND	ND
PCB 118	30.8	NG/KG	270	E29	DNQ82	DNQ120	DNQ57	ND	DNQ115
PCB 114	33	NG/KG	ND						
PCB 105	23.4	NG/KG	DNQ155	DNQ27	DNQ30	DNQ51	E30	ND	DNQ44
PCB 138	45.5	NG/KG	E37	DNQ71	DNQ83	DNQ126	E56	ND	DNQ106
PCB 158	26.7	NG/KG	ND	DNQ35	ND	DNQ32	ND	ND	DNQ61
PCB 187	36.6	NG/KG	E19	DNQ64	DNQ50	DNQ83	ND	ND	DNQ92
PCB 183	28.5	NG/KG	ND	DNQ45	E24	E26	ND	ND	ND
PCB 126	25.5	NG/KG	ND	E19	ND	ND	ND	ND	ND
PCB 128	34.3	NG/KG	ND	E23	E29	DNQ52	ND	ND	DNQ45
PCB 167	23.2	NG/KG	ND	E23	ND	ND	ND	ND	ND
PCB 177	25.8	NG/KG	ND	DNQ43	ND	ND	ND	ND	ND
PCB 201	21.4	NG/KG	ND	DNQ24	ND	ND	ND	ND	ND
PCB 156	28.6	NG/KG	ND	E25	E17	ND	ND	ND	ND
PCB 157	23	NG/KG	ND	DNQ27	ND	ND	ND	ND	ND
PCB 180	56.7	NG/KG	ND	DNQ81	DNQ65	DNQ124	ND	ND	ND
PCB 170	44.2	NG/KG	ND	E37	E20	E44	ND	ND	ND
Total PCB's	59.6	NG/KG	9901	0	0	0	0	0	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL - PCB Congeners Random Stations

Annual 2016

Source: Analyte	MDL	Units	8526-H 19-JUL-2016	8527-H 27-JUL-2016	8529-H 19-JUL-2016	8533-H 19-JUL-2016	8536-H 20-JUL-2016	8539-H 20-JUL-2016
PCB 18	53.8	NG/KG	E26	DNQ69	ND	ND	ND	E13
PCB 28	40.3	NG/KG	ND	DNQ112	ND	ND	E19	E25
PCB 52	36.6	NG/KG	DNQ38	DNQ112	E21	E10	E24	E23
PCB 49	34.4	NG/KG	E33	DNQ64	E26	E14	E21	E25
PCB 44	38.8	NG/KG	E26	DNQ121	E18	E9	E18	E16
PCB 37	16.9	NG/KG	ND	DNQ50	ND	ND	E10	E10
PCB 74	17.9	NG/KG	E16	DNQ45	E11	ND	E15	E14
PCB 70	21.8	NG/KG	DNQ36	DNQ86	DNQ22	ND	E15	DNQ22
PCB 66	16.5	NG/KG	DNQ40	DNQ60	DNQ34	E13	DNQ19	DNQ32
PCB 101	30	NG/KG	DNQ66	DNQ137	DNQ51	E23	E27	DNQ43
PCB 99	31	NG/KG	DNQ55	DNQ37	DNQ43	E23	E19	DNQ38
PCB 119	27.3	NG/KG	ND	ND	ND	ND	E20	ND
PCB 87	30.7	NG/KG	ND	DNQ57	ND	ND	ND	ND
PCB 110	53.6	NG/KG	DNQ74	240	E39	E24	E32	E39
PCB 81	22.3	NG/KG	ND	ND	ND	ND	ND	ND
PCB 151	56.2	NG/KG	ND	DNQ140	ND	ND	ND	ND
PCB 77	23.9	NG/KG	ND	DNQ28	ND	ND	ND	ND
PCB 149	59.6	NG/KG	DNQ100	300	DNQ67	E31	E49	E37
PCB 123	31.3	NG/KG	ND	ND	ND	ND	ND	ND
PCB 118	30.8	NG/KG	DNQ120	DNQ90	DNQ57	E27	DNQ40	DNQ45
PCB 114	33	NG/KG	ND	ND	ND	ND	ND	ND
PCB 105	23.4	NG/KG	DNQ41	DNQ44	23	E14	E21	ND
PCB 138	45.5	NG/KG	DNQ120	DNQ207	DNQ59	DNQ53	DNQ54	E44
PCB 158	26.7	NG/KG	ND	DNQ45	ND	ND	ND	ND
PCB 187	36.6	NG/KG	DNQ66	DNQ146	DNQ67	DNQ37	E31	E27
PCB 183	28.5	NG/KG	E9	DNQ78	ND	E10	ND	ND
PCB 126	25.5	NG/KG	ND	ND	ND	ND	ND	ND
PCB 128	34.3	NG/KG	ND	DNQ54	E30	ND	E23	ND
PCB 167	23.2	NG/KG	E7	ND	ND	ND	ND	ND
PCB 177	25.8	NG/KG	ND	DNQ89	ND	ND	ND	ND
PCB 201	21.4	NG/KG	ND	ND	ND	ND	ND	ND
PCB 156	28.6	NG/KG	ND	ND	ND	ND	ND	ND
PCB 157	23	NG/KG	ND	ND	ND	ND	ND	ND
PCB 180	56.7	NG/KG	DNQ48	250	E54	E42	ND	ND
PCB 170	44.2	NG/KG	ND	DNQ97	ND	ND	ND	ND
Total PCB's	59.6	NG/KG	0	790	0	0	0	0

ND=not detected; NA=not analyzed

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8501 07-JUL-2016	8502 12-JUL-2016	8503 07-JUL-2016	8504 07-JUL-2016	8505 12-JUL-2016	8506 06-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	16.2	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	13.5	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	12.5	UG/KG	ND	ND	ND	E10	ND	ND
3,4-Benzo(b)fluoranthene	9.93	UG/KG	ND	ND	ND	E13	ND	ND
Benzo[e]pyrene	11.4	UG/KG	ND	ND	ND	E7	ND	ND
Benzo[g,h,i]perylene	16.4	UG/KG	ND	ND	ND	E13	ND	ND
Benzo[k]fluoranthene	13.9	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	ND	E9	E8	E13	E7	ND
Fluoranthene	13.6	UG/KG	ND	ND	ND	E10	ND	ND
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	ND	ND	ND	E8	ND	ND
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	ND	ND	ND	ND
Phenanthrene	14.3	UG/KG	ND	ND	ND	ND	ND	ND
Pyrene	15.4	UG/KG	ND	ND	ND	E9	ND	ND
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	0	0	0

Source: Analyte	MDL	Units	8507 07-JUL-2016	8508 06-JUL-2016	8509 12-JUL-2016	8510 27-JUL-2016	8512 27-JUL-2016	8513 12-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	16.2	UG/KG	ND	ND	E8	E10	ND	ND
Benzo[a]anthracene	13.5	UG/KG	ND	ND	29	30	ND	ND
Benzo[a]pyrene	12.5	UG/KG	14	ND	35	42	E13	E10
3,4-Benzo(b)fluoranthene	9.93	UG/KG	18	ND	46	61	<9.93	DNQ12
Benzo[e]pyrene	11.4	UG/KG	E11	ND	24	35	DNQ14	E7
Benzo[g,h,i]perylene	16.4	UG/KG	E13	ND	27	37	E16	ND
Benzo[k]fluoranthene	13.9	UG/KG	E7	ND	16	21	ND	ND
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	E8	ND	29	30	ND	E11
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	E8	<20	E9	E15	<20.2	ND
Fluoranthene	13.6	UG/KG	E12	ND	30	24	E11	ND
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	E10	ND	20	29	E12	ND
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	ND	E11	<14.6	ND
Phenanthrene	14.3	UG/KG	ND	ND	E9	ND	ND	ND
Pyrene	15.4	UG/KG	E12	ND	39	20	E11	E8
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			32	0	295	329	0	0

ND=not detected

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - Random Stations

Annual 2016

Source:			8514	8515	8516	8518	8519	8520
Analyte	MDL	Units	06-JUL-2016	12-JUL-2016	14-JUL-2016	13-JUL-2016	19-JUL-2016	19-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	16.2	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	13.5	UG/KG	ND	ND	24	ND	<13.5	ND
Benzo[a]pyrene	12.5	UG/KG	ND	ND	33	DNQ13	ND	ND
3,4-Benzo(b)fluoranthene	9.93	UG/KG	ND	ND	ND	17	DNQ12	ND
Benzo[e]pyrene	11.4	UG/KG	ND	ND	27	E9	E8	ND
Benzo[g,h,i]perylene	16.4	UG/KG	ND	ND	22	E11	<16.4	ND
Benzo[k]fluoranthene	13.9	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	ND	ND	21	ND	<14.8	ND
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	ND	ND	E15	E15	E12	E12
Fluoranthene	13.6	UG/KG	ND	ND	20	ND	ND	ND
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	ND	ND	DNQ18	E9	ND	ND
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	E8	ND	ND	ND
Phenanthrene	14.3	UG/KG	ND	ND	ND	ND	ND	ND
Pyrene	15.4	UG/KG	ND	ND	20	E14	E8	ND
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	167	17	0	0

Source:			8521	8522	8523	8524	8525	8526
Analyte	MDL	Units	27-JUL-2016	19-JUL-2016	19-JUL-2016	13-JUL-2016	13-JUL-2016	19-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	16.2	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	13.5	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	12.5	UG/KG	ND	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	9.93	UG/KG	ND	ND	E9	ND	ND	ND
Benzo[e]pyrene	11.4	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	16.4	UG/KG	ND	ND	E7	ND	E7	ND
Benzo[k]fluoranthene	13.9	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	ND	ND	ND	ND	E9	ND
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	E9	ND	E13	E9	E10	E12
Fluoranthene	13.6	UG/KG	E9	ND	ND	ND	DNQ14	ND
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	ND	ND	ND	ND
Phenanthrene	14.3	UG/KG	ND	ND	ND	ND	E13	ND
Pyrene	15.4	UG/KG	ND	ND	E9	ND	E15	ND
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	0	0	0

The sample container for source 8517 was broken; therefore the organic analyses were not performed.

ND=not detected

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8527 27-JUL-2016	8528 13-JUL-2016	8529 19-JUL-2016	8530 13-JUL-2016	8531 13-JUL-2016	8532 18-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	16.2	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	13.5	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	12.5	UG/KG	ND	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	9.93	UG/KG	DNQ10		ND	ND	ND	ND
Benzo[e]pyrene	11.4	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	16.4	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	13.9	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	35	E11	E11	E11	E10	E11
Fluoranthene	13.6	UG/KG	E9	ND	ND	ND	ND	ND
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	ND	ND	ND	ND
Phenanthrene	14.3	UG/KG	ND	ND	ND	ND	ND	ND
Pyrene	15.4	UG/KG	ND	ND	E6	ND	ND	ND
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			35	0	0	0	0	0

Source: Analyte	MDL	Units	8533 19-JUL-2016	8534 20-JUL-2016	8536 20-JUL-2016	8537 20-JUL-2016	8538 20-JUL-2016	8539 20-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	16.2	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	13.5	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	12.5	UG/KG	ND	ND	ND	E9	ND	ND
3,4-Benzo(b)fluoranthene	9.93	UG/KG	ND	ND	ND	DNQ15		E9
Benzo[e]pyrene	11.4	UG/KG	ND	ND	ND	E10	ND	ND
Benzo[g,h,i]perylene	16.4	UG/KG	ND	ND	ND	E13	ND	ND
Benzo[k]fluoranthene	13.9	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	E8	E16	E8	23	E9	E19
Fluoranthene	13.6	UG/KG	ND	ND	ND	E11	ND	E8
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	ND	ND	ND	ND
Phenanthrene	14.3	UG/KG	ND	ND	ND	ND	ND	ND
Pyrene	15.4	UG/KG	ND	ND	ND	DNQ16		E8
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	23	0	0

ND=not detected

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - Random Stations

Annual 2016

Source:		MDL	Units	20-JUL-2016	8540	8542	8547	20-JUL-2016
Analyte								
Acenaphthene		17.6	UG/KG		ND	ND	ND	
Acenaphthylene		15.7	UG/KG		ND	ND	ND	
Anthracene		16.2	UG/KG		ND	ND	ND	
Benzo[a]anthracene		13.5	UG/KG		ND	ND	ND	
Benzo[a]pyrene		12.5	UG/KG		DNQ15	ND	ND	
3,4-Benzo(b)fluoranthene		9.93	UG/KG		DNQ21	ND	ND	
Benzo[e]pyrene		11.4	UG/KG		DNQ16	ND	ND	
Benzo[g,h,i]perylene		16.4	UG/KG		DNQ18	ND	ND	
Benzo[k]fluoranthene		13.9	UG/KG		ND	ND	ND	
Biphenyl		21.3	UG/KG		ND	ND	ND	
Chrysene		14.8	UG/KG		E14	ND	ND	
Dibenzo(a,h)anthracene		12	UG/KG		ND	ND	ND	
2,6-Dimethylnaphthalene		20.2	UG/KG		DNQ26	E11	E15	
Fluoranthene		13.6	UG/KG		DNQ23	ND	ND	
Fluorene		17.9	UG/KG		ND	ND	ND	
Indeno(1,2,3-CD)pyrene		11.7	UG/KG		DNQ15	ND	ND	
1-Methylphenanthrene		14.1	UG/KG		ND	ND	ND	
2-Methylnaphthalene		23.2	UG/KG		ND	ND	ND	
1-Methylnaphthalene		22.5	UG/KG		ND	ND	ND	
Naphthalene		32.9	UG/KG		ND	ND	ND	
Perylene		14.6	UG/KG		DNQ21	ND	ND	
Phenanthrene		14.3	UG/KG		ND	ND	ND	
Pyrene		15.4	UG/KG		29	ND	ND	
2,3,5-Trimethylnaphthalene		17.7	UG/KG		ND	ND	ND	
Base/Neutral Compounds					29	0	0	

ND=not detected

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - Random Stations

Annual 2016

Source: Analyte	MDL	Units	8501-H 07-JUL-2016	8502-H 12-JUL-2016	8503-H 07-JUL-2016	8505-H 12-JUL-2016	8507-H 07-JUL-2016	8510-H 27-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	E8
Anthracene	16.2	UG/KG	ND	ND	ND	ND	ND	E13
Benzo[a]anthracene	13.5	UG/KG	ND	ND	ND	ND	15	21
Benzo[a]pyrene	12.5	UG/KG	ND	ND	ND	ND	18	71
3,4-Benzo(b)fluoranthene	9.93	UG/KG	ND	ND	ND	ND	24	ND
Benzo[e]pyrene	11.4	UG/KG	ND	ND	ND	ND	DNQ13	57
Benzo[g,h,i]perylene	16.4	UG/KG	ND	ND	ND	ND	E12	40
Benzo[k]fluoranthene	13.9	UG/KG	ND	ND	ND	ND	E10	31
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	ND	ND	ND	ND	17	54
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	ND	ND	<20.2	ND	E9	E19
Fluoranthene	13.6	UG/KG	ND	ND	ND	ND	E12	279
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	ND	ND	ND	ND	E10	33
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	ND	ND	ND	DNQ17
Phenanthrene	14.3	UG/KG	ND	ND	ND	ND	ND	<14.3
Pyrene	15.4	UG/KG	ND	ND	ND	ND	<15.4	53
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	0	74	639

Source: Analyte	MDL	Units	8512-H 27-JUL-2016	8513-H 12-JUL-2016	8515-H 12-JUL-2016	8517-H 28-JUL-2016	8520-H 19-JUL-2016	8521-H 27-JUL-2016
Acenaphthene	17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene	15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene	16.2	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	13.5	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene	12.5	UG/KG	DNQ13	ND	ND	ND	ND	E9
3,4-Benzo(b)fluoranthene	9.93	UG/KG	ND	ND	ND	ND	E9	DNQ14
Benzo[e]pyrene	11.4	UG/KG	DNQ13	ND	ND	ND	ND	E10
Benzo[g,h,i]perylene	16.4	UG/KG	E13	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	13.9	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl	21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene	14.8	UG/KG	E8	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	20.2	UG/KG	E16	ND	ND	E13	E13	E20
Fluoranthene	13.6	UG/KG	E11	ND	ND	ND	ND	E11
Fluorene	17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	11.7	UG/KG	DNQ12	ND	ND	ND	ND	ND
1-Methylphenanthrene	14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene	32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene	14.6	UG/KG	ND	ND	ND	ND	ND	ND
Phenanthrene	14.3	UG/KG	ND	ND	ND	ND	ND	ND
Pyrene	15.4	UG/KG	DNQ16	ND	ND	ND	ND	E13
2,3,5-Trimethylnaphthalene	17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds			0	0	0	0	0	0

ND=not detected

E=Estimated value below MDL, but qualified

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

SOUTH BAY OCEAN OUTFALL MONITORING
SEDIMENT ANNUAL Base/Neutrals - Random Stations

Annual 2016

Source:		MDL	Units	8522-H 19-JUL-2016	8523-H 19-JUL-2016	8526-H 19-JUL-2016	8527-H 27-JUL-2016	8529-H 19-JUL-2016	8533-H 19-JUL-2016
Acenaphthene		17.6	UG/KG	ND	ND	ND	ND	ND	ND
Acenaphthylene		15.7	UG/KG	ND	ND	ND	ND	ND	ND
Anthracene		16.2	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene		13.5	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[a]pyrene		12.5	UG/KG	ND	ND	ND	E8	ND	ND
3,4-Benzo(b)fluoranthene		9.93	UG/KG	ND	DNQ10	ND	DNQ10	ND	ND
Benzo[e]pyrene		11.4	UG/KG	ND	E7	ND	ND	ND	ND
Benzo[g,h,i]perylene		16.4	UG/KG	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene		13.9	UG/KG	ND	ND	ND	ND	ND	ND
Biphenyl		21.3	UG/KG	ND	ND	ND	ND	ND	ND
Chrysene		14.8	UG/KG	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene		12	UG/KG	ND	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene		20.2	UG/KG	ND	E13	E8	E18	E10	ND
Fluoranthene		13.6	UG/KG	ND	E6	ND	E11	E6	ND
Fluorene		17.9	UG/KG	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene		11.7	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylphenanthrene		14.1	UG/KG	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene		23.2	UG/KG	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene		22.5	UG/KG	ND	ND	ND	ND	ND	ND
Naphthalene		32.9	UG/KG	ND	ND	ND	ND	ND	ND
Perylene		14.6	UG/KG	ND	ND	ND	ND	ND	ND
Phenanthrene		14.3	UG/KG	ND	ND	ND	ND	ND	ND
Pyrene		15.4	UG/KG	ND	E9	ND	E11	E7	ND
2,3,5-Trimethylnaphthalene		17.7	UG/KG	ND	ND	ND	ND	ND	ND
Base/Neutral Compounds				0	0	0	0	0	0

Source:		MDL	Units	8536-H 20-JUL-2016	8539-H 20-JUL-2016
Acenaphthene		17.6	UG/KG	ND	ND
Acenaphthylene		15.7	UG/KG	ND	ND
Anthracene		16.2	UG/KG	ND	ND
Benzo[a]anthracene		13.5	UG/KG	ND	ND
Benzo[a]pyrene		12.5	UG/KG	ND	ND
3,4-Benzo(b)fluoranthene		9.93	UG/KG	ND	E8
Benzo[e]pyrene		11.4	UG/KG	ND	ND
Benzo[g,h,i]perylene		16.4	UG/KG	ND	ND
Benzo[k]fluoranthene		13.9	UG/KG	ND	ND
Biphenyl		21.3	UG/KG	ND	ND
Chrysene		14.8	UG/KG	ND	ND
Dibenzo(a,h)anthracene		12	UG/KG	ND	ND
2,6-Dimethylnaphthalene		20.2	UG/KG	E8	E15
Fluoranthene		13.6	UG/KG	ND	E10
Fluorene		17.9	UG/KG	ND	ND
Indeno(1,2,3-CD)pyrene		11.7	UG/KG	ND	ND
1-Methylphenanthrene		14.1	UG/KG	ND	ND
2-Methylnaphthalene		23.2	UG/KG	ND	ND
1-Methylnaphthalene		22.5	UG/KG	ND	ND
Naphthalene		32.9	UG/KG	ND	ND
Perylene		14.6	UG/KG	ND	ND
Phenanthrene		14.3	UG/KG	ND	ND
Pyrene		15.4	UG/KG	ND	E9
2,3,5-Trimethylnaphthalene		17.7	UG/KG	ND	ND
Base/Neutral Compounds				0	0

ND=not detected

E=Estimated value below MDL, but qualified

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

.B. Fish Tissue Data.

Fish were taken from the following stations during 2016. The fish were dissected, preserved by freezing, and each sample analyzed for PAHs, trace metals, chlorinated pesticides and PCBs. Lipids and total solids were also determined for each sample.

The reported values are annual averages. Results for individual sampling events are contained in the previously published quarterly reports.

Station

RF-3

RF-4

Station

TFZONE 5

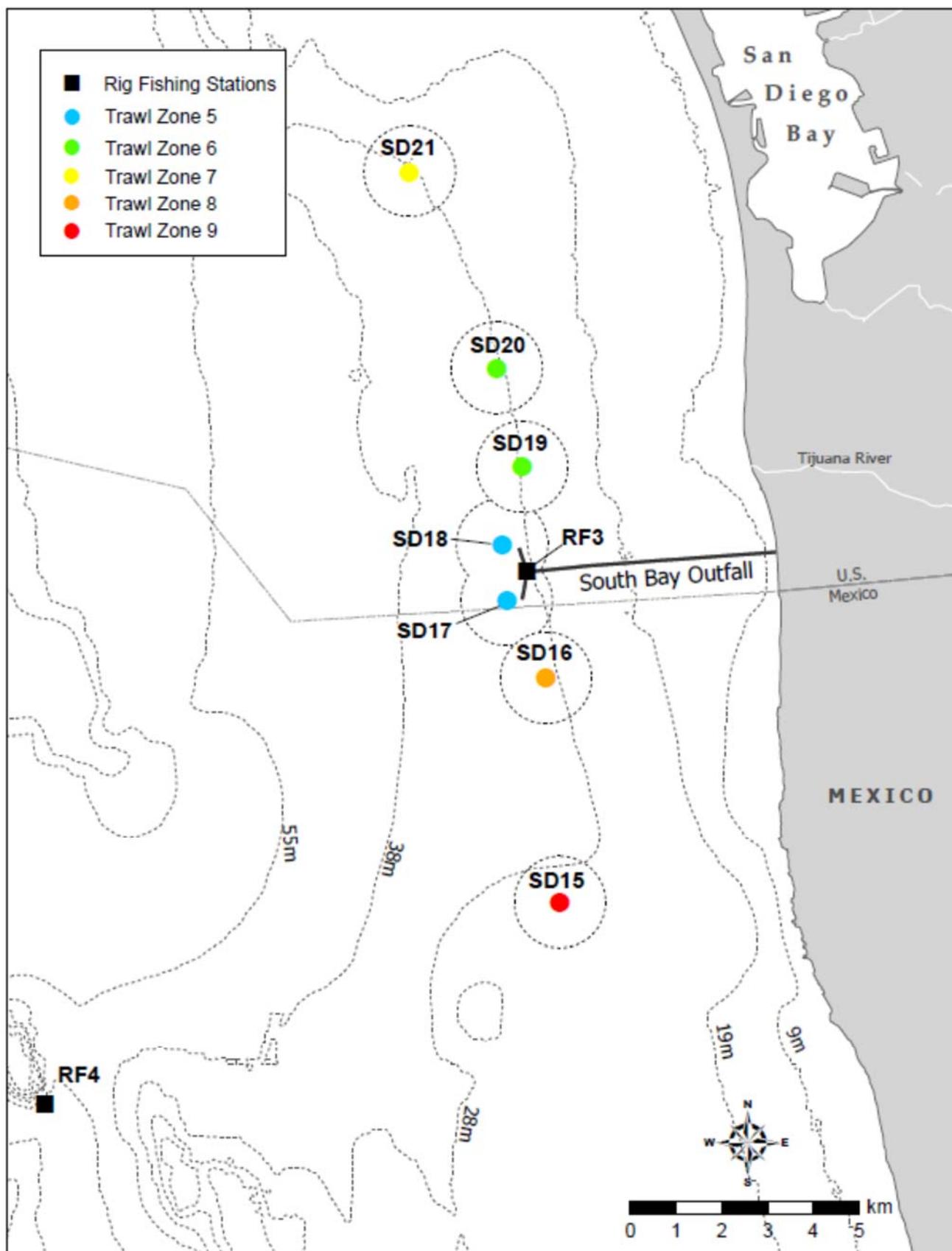
TFZONE 6

TFZONE 7

TFZONE 8

TFZONE 9

South Bay Rig Fishing and Trawl Stations



SOUTH BAY WATER RECLAMATION PLANT
TISSUE

FISH - Lipids & Total Solids

Annual 2016

Source:	RF-3	RF-4	TFZONE5	TFZONE6	TFZONE7	TFZONE8
Date:	2016	2016	2016	2016	2016	2016
Tissue Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg
Liver Lipids	.09 WT%		16.0	40.7	33.8	27.7
Liver Total Solids	.4 WT%		40.4	58.4	56.5	47.7
Muscle Lipids	.09 WT%	0.3	0.3			
Muscle Total Solids	.4 WT%	21.1	21.8			

Source:	TFZONE9	
Date:	2016	
Tissue Analyte	MDL Units	Avg
Liver Lipids	.09 WT%	5.1
Liver Total Solids	.4 WT%	25.3
Muscle Lipids	.09 WT%	
Muscle Total Solids	.4 WT%	

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL FISH TISSUE - MUSCLE

Trace Metals

Annual 2016

Source:		RF-3	RF-4
Date:		2016	2016
Analyte	MDL Units	Average	Average
Aluminum	.2.4 MG/KG	ND	ND
Antimony	.79 MG/KG	ND	ND
Arsenic	.308 MG/KG	4.17	1.85
Beryllium	.02 MG/KG	ND	ND
Cadmium	.13 MG/KG	ND	ND
Chromium	.136 MG/KG	ND	0.5
Copper	.69 MG/KG	ND	ND
Iron	2.88 MG/KG	7	4
Lead	.326 MG/KG	ND	ND
Manganese	.19 MG/KG	1.5	ND
Mercury	.002 MG/KG	0.1	0.2
Nickel	.3 MG/KG	ND	ND
Selenium	.19 MG/KG	0.38	0.57
Silver	.206 MG/KG	ND	ND
Thallium	.43 MG/KG	ND	ND
Tin	.33 MG/KG	0.4	0.5
Zinc	1.45 MG/KG	3.7	3.3
Total Solids	.4 WT%	21.1	21.8

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL FISH TISSUE - LIVER

Trace Metals

Annual 2016

Source:		TFZONE5 2016	TFZONE6 2016	TFZONE7 2016	TFZONE8 2016	TFZONE9 2016
Analyte	MDL Units	Average	Average	Average	Average	Average
Aluminum	2.4 MG/KG	ND	ND	ND	ND	ND
Antimony	.79 MG/KG	ND	ND	ND	ND	ND
Arsenic	.308 MG/KG	14.4	7.4	9.23	20.3	14.3
Beryllium	.02 MG/KG	ND	ND	ND	ND	ND
Cadmium	.13 MG/KG	3.3	1.2	1.23	2.33	2.33
Chromium	.136 MG/KG	0.5	0.6	0.6	<0.1	<0.1
Copper	.69 MG/KG	13.8	5.8	4.3	10.1	9.1
Iron	2.88 MG/KG	109	86	66	130	116
Lead	.326 MG/KG	ND	ND	ND	ND	ND
Manganese	.19 MG/KG	1.5	1.1	1.1	1.7	1.0
Mercury	.002 MG/KG	0.127	0.066	0.099	0.099	0.082
Nickel	.3 MG/KG	ND	ND	<0.3	ND	ND
Selenium	.19 MG/KG	1.22	1.08	0.93	0.90	1.39
Silver	.206 MG/KG	<0.2	ND	ND	ND	ND
Thallium	.43 MG/KG	ND	ND	ND	ND	ND
Tin	.33 MG/KG	0.5	0.5	0.5	0.5	<0.3
Zinc	1.45 MG/KG	58.0	25.3	24.7	37.7	41.3
Total Solids	.4 WT%	40.4	58.4	56.5	47.7	25.3

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL FISH LIVER - Chlorinated Pesticides

Annual 2016

Source:	TFZONE5		TFZONE6		TFZONE7		TFZONE8		TFZONE9	
	MDL	Units	2016	2016	2016	2016	2016	2016	2016	2016
Analyte		Average Value								
Hexachlorobenzene	UG/KG	E0.36	E6.12*	E4.42	E15.70	E1.0*				
BHC, Gamma isomer	3.68 UG/KG	<3.7	<3.7	<3.7	ND	ND	ND	ND	ND	
Heptachlor	1.86 UG/KG	ND	ND	<1.86	ND	ND	ND	ND	ND	
Aldrin	2.98 UG/KG	ND	ND							
Heptachlor epoxide	2.97 UG/KG	ND	ND	ND	ND	<2.97	ND	ND	ND	
o,p-DDE	3.16 UG/KG	<3.16	DNQ6.44	E3.65	E4.69	<3.16				
Alpha Endosulfan	1.77 UG/KG	ND	ND							
Alpha (cis) Chlordane	5.89 UG/KG	ND	<5.89	ND	<5.89	ND	ND	ND	ND	
Trans Nonachlor	5.12 UG/KG	<5.12	E5.69	ND	<5.12	<5.12				
p,p-DDE	1.75 UG/KG	171	754	402	386	26.0				
Dieldrin	UG/KG	ND^	ND^							
o,p-DDD	2.03 UG/KG	<2.03	E1.21	<2.03	<2.03	<2.03				
Endrin	UG/KG	ND^	ND^							
o,p-DDT	2.92 UG/KG	<2.92	<2.92	<2.92	<2.92	<2.92	<2.92	ND	ND	
p,p-DDD	2.62 UG/KG	<2.62	DNQ6.19	DNQ4.24	DNQ3.50	<2.62				
p,p-DDT	2.66 UG/KG	<2.66	DNQ3.91	E3.03	DNQ3.37	<2.66				
Mirex	1.99 UG/KG	<1.99	<1.99	<1.99	<1.99	<1.99	ND	ND	ND	

ND= not detected

*= Method blank value above the MDL; sample result not included in average calculations.

^= Data not reportable due to possible Alumina interference during cleanup process.

E=estimated value, value is less than the Method Detection Limit but confirmed by GC/MS-MS.

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

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL FISH MUSCLE - Chlorinated Pesticides

Annual 2016

Source:		RF-3	RF-4
Date:		2016	2016
Analyte	MDL Units	Avg	Avg
=====	=====	=====	=====
Hexachlorobenzene	UG/KG	E0.37*	E0.08*
BHC, Gamma isomer	.37 UG/KG	<0.37	ND
Heptachlor	.19 UG/KG	ND	ND
Aldrin	.3 UG/KG	ND	ND
Heptachlor epoxide	.29 UG/KG	ND	ND
o,p-DDE	.31 UG/KG	<0.31	<0.31
Alpha Endosulfan	.17 UG/KG	ND	ND
Alpha (cis) Chlordane	.59 UG/KG	ND	ND
Trans Nonachlor	.51 UG/KG	ND	ND
p,p-DDE	.18 UG/KG	DNQ0.78	DNQ0.55
Dieldrin	UG/KG	ND^	ND^
o,p-DDD	.21 UG/KG	ND	<0.21
Endrin	UG/KG	ND^	ND^
o,p-DDT	.29 UG/KG	ND	ND
p,p-DDD	.26 UG/KG	ND	<0.26
p,p-DDT	.27 UG/KG	ND	<0.27
Mirex	.2 UG/KG	ND	ND

ND= not detected

*= Method blank value above the MDL; sample result not included in average calculations.

^= Data not reportable due to possible Alumina interference during cleanup process.

E=estimated value, value is less than the Method Detection Limit but confirmed by GC/MS-MS.

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

SOUTH BAY WATER RECLAMATION PLANT
FISH LIVER - Analysis of Poly Aromatic Hydrocarbon (PAH)

Annual 2016

Source:		TFZONE5	TFZONE6	TFZONE7	TFZONE8	TFZONE9
Date:		2016	2016	2016	2016	2016
Analyte	MDL Units	Avg	Avg	Avg	Avg	Avg
Acenaphthene	28.9 UG/KG	ND	ND	ND	ND	ND
Acenaphthylene	24.7 UG/KG	ND	ND	ND	ND	ND
Anthracene	25.3 UG/KG	ND	ND	ND	ND	ND
Benzo[a]anthracene	47.3 UG/KG	ND	ND	ND	ND	ND
Benzo[a]pyrene	42.9 UG/KG	ND	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	30.2 UG/KG	ND	ND	ND	ND	ND
Benzo[e]pyrene	41.8 UG/KG	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	27.2 UG/KG	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	32 UG/KG	ND	ND	ND	ND	ND
Biphenyl	38 UG/KG	ND	ND	ND	ND	ND
Chrysene	18.1 UG/KG	ND	ND	ND	ND	ND
Dibeno(a,h)anthracene	37.6 UG/KG	ND	ND	ND	ND	ND
2,6-Dimethylnaphthalene	21.7 UG/KG	ND	ND	ND	ND	ND
Fluoranthene	19.9 UG/KG	ND	ND	ND	ND	ND
Fluorene	27.3 UG/KG	ND	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	25.6 UG/KG	ND	ND	ND	ND	ND
1-Methylnaphthalene	27.9 UG/KG	ND	ND	ND	ND	ND
2-Methylnaphthalene	35.8 UG/KG	ND	ND	ND	ND	ND
1-Methylphenanthrene	17.4 UG/KG	ND	ND	ND	ND	ND
Naphthalene	34.2 UG/KG	ND	ND	ND	ND	ND
Perylene	18.5 UG/KG	ND	ND	ND	ND	ND
Phenanthrene	11.6 UG/KG	ND	ND	ND	ND	ND
Pyrene	9.1 UG/KG	ND	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	21.7 UG/KG	ND	ND	ND	ND	ND

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL FISH MUSCLE - Analysis of Poly Aromatic Hydrocarbon (PAH)

Annual 2016

Source:		RF-3	RF-4
Date:		2016	2016
Analyte	MDL Units	Avg	Avg
Acenaphthene	11.3 UG/KG	ND	ND
Acenaphthylene	9.1 UG/KG	ND	ND
Anthracene	8.4 UG/KG	ND	ND
Benzo[a]anthracene	15.9 UG/KG	ND	ND
Benzo[a]pyrene	18.3 UG/KG	ND	ND
3,4-Benzo(b)fluoranthene	26.8 UG/KG	ND	ND
Benzo[e]pyrene	40.6 UG/KG	ND	ND
Benzo[g,h,i]perylene	59.5 UG/KG	ND	ND
Benzo[k]fluoranthene	37.3 UG/KG	ND	ND
Biphenyl	19.9 UG/KG	ND	ND
Chrysene	23 UG/KG	ND	ND
Dibenz(a,h)anthracene	40.3 UG/KG	ND	ND
2,6-Dimethylnaphthalene	19.5 UG/KG	ND	ND
Fluoranthene	12.9 UG/KG	ND	ND
Fluorene	11.4 UG/KG	ND	ND
Indeno(1,2,3-CD)pyrene	46.5 UG/KG	ND	ND
1-Methylnaphthalene	26.4 UG/KG	ND	ND
2-Methylnaphthalene	13.2 UG/KG	ND	ND
1-Methylphenanthrene	23.3 UG/KG	ND	ND
Naphthalene	17.4 UG/KG	ND	ND
Perylene	50.9 UG/KG	ND	ND
Phenanthrene	12.9 UG/KG	ND	ND
Pyrene	16.6 UG/KG	ND	ND
2,3,5-Trimethylnaphthalene	21.6 UG/KG	ND	ND

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL FISH LIVER - Analysis of Poly Chlorinated Biphenyls

Annual 2016

Source:		TFZONE5	TFZONE6	TFZONE7	TFZONE8	TFZONE9
Date:		25-OCT-2016	25-OCT-2016	05-OCT-2016	20-OCT-2016	20-OCT-2016
Analyte	MDL	Units	Value	Value	Value	Value
PCB 18	1.21	UG/KG	ND	ND	E0.28	<1.21
PCB 28	1.65	UG/KG	<1.65	E1.58	E1.77	<1.65
PCB 49	.97	UG/KG	<0.97	DNQ1.34	DNQ2.27	<0.97
PCB 37	1.43	UG/KG	ND	<1.43	<1.43	<1.43
PCB 70	1.4	UG/KG	E0.45	E0.88	E1.41	E0.69
PCB 101	1.49	UG/KG	E2.4	8.1	9.07	DNQ3.96
PCB 119	1.96	UG/KG	<1.96	E0.79	<1.96	<1.96
PCB 87	1.39	UG/KG	<1.39	E1.12	E1.42	<1.39
PCB 110	1.42	UG/KG	<1.42	DNQ3.79	DNQ4.74	DNQ1.94
PCB 151	1.31	UG/KG	<1.31	DNQ4.99	DNQ4.16	DNQ2.56
PCB 77	1.81	UG/KG	<1.81	ND	ND	<1.81
PCB 149	1.79	UG/KG	E2.33	9.04	9.04	E4.82
PCB 123	1.94	UG/KG	<1.94	DNQ4.12	DNQ3.64	DNQ2.6
PCB 118	2.38	UG/KG	E8.0	30.1	29.3	17.8
PCB 114	1.31	UG/KG	ND	ND	ND	ND
PCB 153/168	2.79	UG/KG	DNQ26.1	96.3	98.2	E60.2
PCB 105	1.83	UG/KG	E2.06	DNQ8.01	7.25	E5.52
PCB 138	2.51	UG/KG	DNQ12.6	48.0	50.5	E31.0
PCB 158	1.45	UG/KG	<1.45	DNQ3.01	DNQ3.06	E1.69
PCB 187	1.16	UG/KG	DNQ8.95	32.0	29.7	E21.7
PCB 183	1.14	UG/KG	E2.4	DNQ8.5	8.82	E5.84
PCB 126	1.34	UG/KG	ND	<1.34	ND	<1.34
PCB 128	1.43	UG/KG	E2.19	DNQ8.01	9.25	E6.33
PCB 167	1.59	UG/KG	<1.59	DNQ3.28	DNQ3.17	DNQ2.13
PCB 177	2.31	UG/KG	<2.31	DNQ7.36	DNQ5.94	E4.44
PCB 156	1.86	UG/KG	<1.86	DNQ4.74	DNQ4.57	E3.23
PCB 157	3.2	UG/KG	<3.2	<3.2	E1.44	<3.2
PCB 180	2.54	UG/KG	E8.38	29.4	29.2	E19.0
PCB 170	2.02	UG/KG	E3.19	12.20	11.20	7.51
PCB 169	2.72	UG/KG	<2.72	ND	ND	<2.72
PCB 189	1.44	UG/KG	<1.44	E0.61	E0.55	E0.52
PCB 194	1.76	UG/KG	E3.26	9.5	10.7	E8.1
PCB 206	1.31	UG/KG	E3.02	DNQ6.77	8.15	E7.41
						E0.74

ND= not detected

DNQ= (Detected but not quantified). Estimated analyte concentration below calibration range.
E=estimated value, value is less than the Method Detection Limit but confirmed by GC/MS-MS.

SOUTH BAY WATER RECLAMATION PLANT
ANNUAL FISH MUSCLE - Analysis of Poly Chlorinated Biphenyls

Annual 2016

Source:		RF-3	RF-4
Date:		2016	2016
Analyte	MDL Units	Avg	Avg
=====	=====	=====	=====
PCB 18	.12 UG/KG	ND	<0.12
PCB 28	.16 UG/KG	ND	<0.16
PCB 49	.1 UG/KG	<0.10	ND
PCB 37	.14 UG/KG	ND	<0.14
PCB 70	.14 UG/KG	<0.14	ND
PCB 101	.15 UG/KG	E0.03	<0.15
PCB 119	.2 UG/KG	ND	ND
PCB 87	.14 UG/KG	ND	<0.14
PCB 110	.14 UG/KG	<0.14	<0.14
PCB 151	.14 UG/KG	ND	<0.14
PCB 77	.18 UG/KG	ND	ND
PCB 149	.18 UG/KG	E0.03	<0.18
PCB 123	.19 UG/KG	ND	ND
PCB 118	.24 UG/KG	E0.07	<0.24
PCB 114	.13 UG/KG	<0.13	ND
PCB 153/168	.28 UG/KG	<0.28	<0.28
PCB 105	.19 UG/KG	<0.19	ND
PCB 138	.25 UG/KG	E0.09	<0.25
PCB 158	.14 UG/KG	<0.14	<0.14
PCB 187	.12 UG/KG	<0.12	<0.12
PCB 183	.11 UG/KG	<0.11	<0.11
PCB 126	.13 UG/KG	ND	ND
PCB 128	.14 UG/KG	<0.14	<0.14
PCB 167	.16 UG/KG	<0.16	<0.16
PCB 177	.23 UG/KG	<0.23	ND
PCB 156	.19 UG/KG	<0.19	<0.19
PCB 157	.32 UG/KG	ND	<0.32
PCB 180	.26 UG/KG	<0.26	<0.26
PCB 170	.21 UG/KG	<0.21	ND
PCB 169	.27 UG/KG	ND	<0.27
PCB 189	.14 UG/KG	<0.14	ND
PCB 194	.18 UG/KG	<0.18	<0.18
PCB 206	UG/KG	E0.05	E0.04

ND= not detected

E=estimated value, value is less than the Method Detection Limit but confirmed by GC/MS-MS.

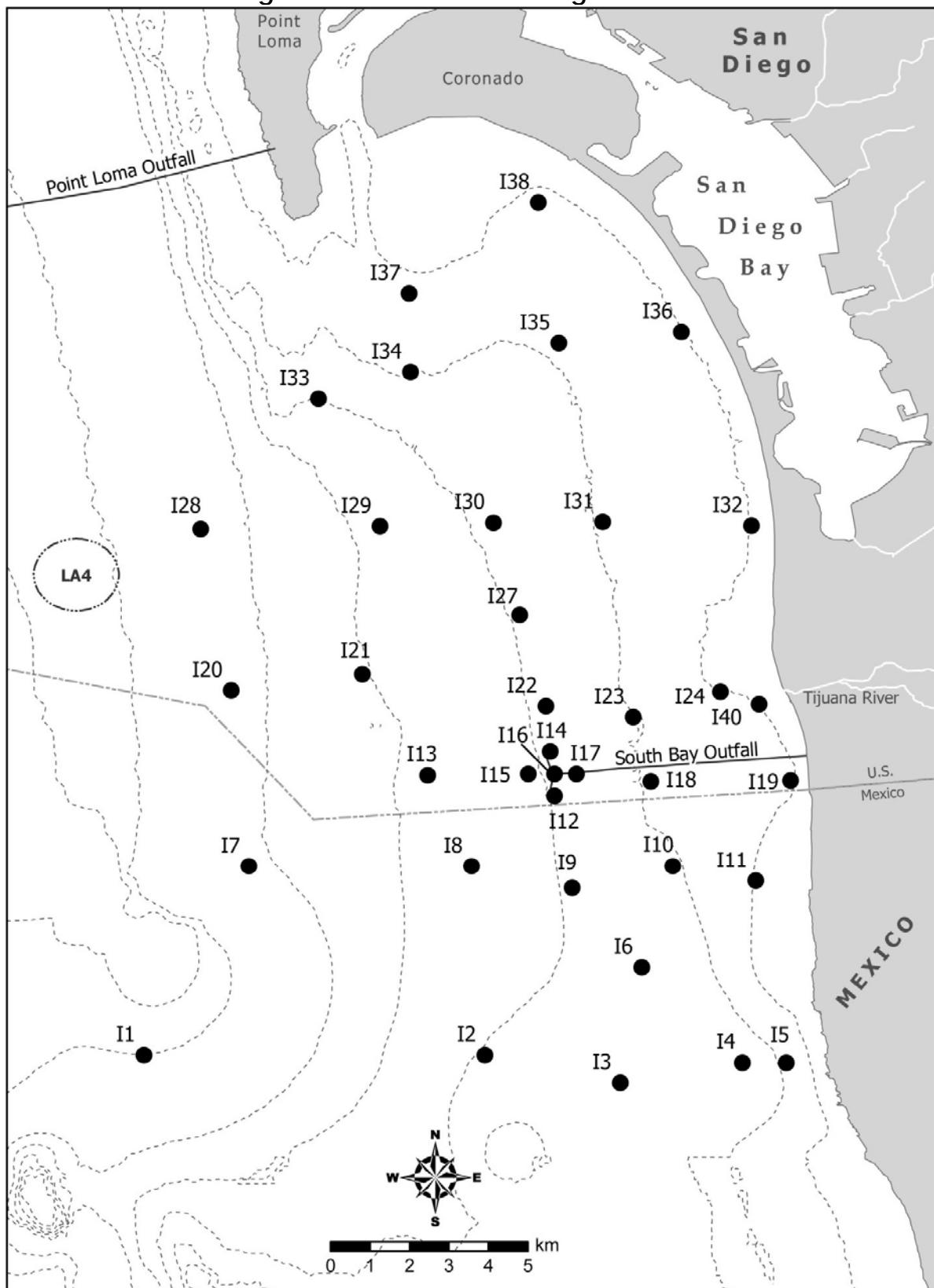
C. Seawater Data

Seawater is collected monthly at the following stations for analysis of total suspended solids (TSS) and Oil & Grease (O&G). Samples for TSS analysis are collected at 3 depths, sub-surface, mid-depth, and bottom, for each station shown in the following table. Oil and Grease samples are only collected from the 5 foot depth. The Oil & Grease analysis was changed to a Hexane Extractable Material (HEM) method. A report of analyses for each month is attached.

Table 1. Regular Fixed Grid Seawater sampling stations.

Station	Station
I-3	I-21
I-5	I-22
I-7	I-23
I-8	I-24
I-9	I-25
I-10	I-26
I-11	I-30
I-12	I-32
I-13	I-33
I-14	I-36
I-16	I-37
I-18	I-38
I-19	I-39
I-20	I-40

Regular Fixed Grid Monitoring Stations



South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-3 2 M	09-FEB-2016	ND	<2.5
I-3 2 M	09-MAY-2016	ND	ND
I-3 2 M	02-AUG-2016	ND	<2.5
I-3 2 M	02-NOV-2016	ND	ND
I-3 18 M	09-FEB-2016		4.4
I-3 18 M	09-MAY-2016		ND
I-3 18 M	02-AUG-2016		ND
I-3 18 M	02-NOV-2016		ND
I-3 27 M	09-FEB-2016		4.1
I-3 27 M	09-MAY-2016		3.5
I-3 27 M	02-AUG-2016		ND
I-3 27 M	02-NOV-2016		ND
I-5 2 M	09-FEB-2016	ND	5.8
I-5 2 M	09-MAY-2016	ND	4.2
I-5 2 M	02-AUG-2016	ND	2.8
I-5 2 M	02-NOV-2016	ND	ND
I-5 6 M	09-FEB-2016		6.1
I-5 6 M	09-MAY-2016		5.7
I-5 6 M	02-AUG-2016		ND
I-5 6 M	02-NOV-2016		ND
I-5 11 M	09-FEB-2016		8.9
I-5 11 M	09-MAY-2016		4.0
I-5 11 M	02-AUG-2016		ND
I-5 11 M	02-NOV-2016		3.2
I-7 2 M	09-FEB-2016	ND	2.8
I-7 2 M	09-MAY-2016	ND	4.1
I-7 2 M	02-AUG-2016	ND	<2.5
I-7 2 M	02-NOV-2016	ND	ND
I-7 18 M	09-FEB-2016		4.2
I-7 18 M	09-MAY-2016		4.3
I-7 18 M	02-AUG-2016		ND
I-7 18 M	02-NOV-2016		ND
I-7 52 M	09-FEB-2016		3.6
I-7 52 M	09-MAY-2016		3.3
I-7 52 M	02-AUG-2016		ND
I-7 52 M	02-NOV-2016		ND
I-8 2 M	09-FEB-2016	ND	5.1
I-8 2 M	09-MAY-2016	ND	4.0
I-8 2 M	02-AUG-2016	ND	ND
I-8 2 M	02-NOV-2016	ND	ND
I-8 18 M	09-FEB-2016		2.9

ND=not detected

South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-8	18 M 09-MAY-2016		5.5
I-8	18 M 02-AUG-2016		ND
I-8	18 M 02-NOV-2016		ND
I-8	37 M 09-FEB-2016		3.7
I-8	37 M 09-MAY-2016		4.2
I-8	37 M 02-AUG-2016		2.6
I-8	37 M 02-NOV-2016		3.3
I-9	2 M 09-FEB-2016	ND	2.9
I-9	2 M 09-MAY-2016	ND	4.6
I-9	2 M 02-AUG-2016	ND	ND
I-9	2 M 02-NOV-2016	ND	ND
I-9	18 M 09-FEB-2016		3.1
I-9	18 M 09-MAY-2016		3.4
I-9	18 M 02-AUG-2016		ND
I-9	18 M 02-NOV-2016		ND
I-9	27 M 09-FEB-2016		2.7
I-9	27 M 09-MAY-2016		5.9
I-9	27 M 02-AUG-2016		ND
I-9	27 M 02-NOV-2016		ND
I-10	2 M 09-FEB-2016	ND	6.4
I-10	2 M 09-MAY-2016	ND	3.6
I-10	2 M 02-AUG-2016	ND	ND
I-10	2 M 02-NOV-2016	ND	3.3
I-10	12 M 09-FEB-2016		4.2
I-10	12 M 09-MAY-2016		3.8
I-10	12 M 02-AUG-2016		2.8
I-10	12 M 02-NOV-2016		2.9
I-10	18 M 09-FEB-2016		4.9
I-10	18 M 09-MAY-2016		4.1
I-10	18 M 02-AUG-2016		ND
I-10	18 M 02-NOV-2016		ND
I-11	2 M 09-FEB-2016	ND	4.6
I-11	2 M 09-MAY-2016	ND	4.2
I-11	2 M 02-AUG-2016	ND	ND
I-11	2 M 02-NOV-2016	ND	ND
I-11	6 M 09-FEB-2016		3.4
I-11	6 M 09-MAY-2016		4.0
I-11	6 M 02-AUG-2016		2.8
I-11	6 M 02-NOV-2016		ND
I-11	11 M 09-FEB-2016		4.1
I-11	11 M 09-MAY-2016		6.5

ND=not detected

South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-11	11 M 02-AUG-2016		ND
I-11	11 M 02-NOV-2016		2.7
I-12	2 M 10-FEB-2016	ND	5.6
I-12	2 M 10-MAY-2016	ND	ND
I-12	2 M 04-AUG-2016		3.6
I-12	2 M 01-NOV-2016	ND	ND
I-12	18 M 10-FEB-2016		4.6
I-12	18 M 10-MAY-2016		2.7
I-12	18 M 04-AUG-2016		ND
I-12	18 M 01-NOV-2016		ND
I-12	27 M 10-FEB-2016		8.8
I-12	27 M 10-MAY-2016		ND
I-12	27 M 04-AUG-2016		ND
I-12	27 M 01-NOV-2016		ND
I-13	2 M 09-FEB-2016	ND	3.1
I-13	2 M 09-MAY-2016	ND	2.7
I-13	2 M 02-AUG-2016	ND	ND
I-13	2 M 02-NOV-2016	ND	ND
I-13	18 M 09-FEB-2016		3.7
I-13	18 M 09-MAY-2016		4.9
I-13	18 M 02-AUG-2016		ND
I-13	18 M 02-NOV-2016		ND
I-13	37 M 09-FEB-2016		3.5
I-13	37 M 09-MAY-2016		3.8
I-13	37 M 02-AUG-2016		ND
I-13	37 M 02-NOV-2016		ND
I-14	2 M 10-FEB-2016	ND	4.1
I-14	2 M 10-MAY-2016	ND	4.0
I-14	2 M 04-AUG-2016	ND	ND
I-14	2 M 01-NOV-2016	ND	ND
I-14	18 M 10-FEB-2016		4.8
I-14	18 M 10-MAY-2016		2.6
I-14	18 M 04-AUG-2016		3.0
I-14	18 M 01-NOV-2016		ND
I-14	27 M 10-FEB-2016		8.0
I-14	27 M 10-MAY-2016		3.4
I-14	27 M 04-AUG-2016		3.6
I-14	27 M 01-NOV-2016		ND
I-16	2 M 10-FEB-2016	ND	4.9
I-16	2 M 10-MAY-2016	ND	ND
I-16	2 M 04-AUG-2016		ND

ND=not detected

South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-16	2 M 01-NOV-2016	ND	<2.5
I-16	18 M 10-FEB-2016		4.8
I-16	18 M 10-MAY-2016		2.9
I-16	18 M 04-AUG-2016		2.6
I-16	18 M 01-NOV-2016		3.2
I-16	27 M 10-FEB-2016		9.6
I-16	27 M 10-MAY-2016		4.0
I-16	27 M 04-AUG-2016		2.9
I-16	27 M 01-NOV-2016		5.5
I-18	2 M 10-FEB-2016	ND	7.7
I-18	2 M 10-MAY-2016	ND	3.7
I-18	2 M 04-AUG-2016		ND
I-18	2 M 01-NOV-2016	ND	ND
I-18	12 M 10-FEB-2016		3.6
I-18	12 M 10-MAY-2016		2.9
I-18	12 M 04-AUG-2016		ND
I-18	12 M 01-NOV-2016		2.8
I-18	18 M 10-FEB-2016		6.8
I-18	18 M 10-MAY-2016		3.7
I-18	18 M 04-AUG-2016		3.2
I-18	18 M 01-NOV-2016		3.3
I-19	2 M 10-FEB-2016	ND	8.1
I-19	2 M 10-MAY-2016	ND	6.0
I-19	2 M 04-AUG-2016	ND	2.8
I-19	2 M 01-NOV-2016	ND	4.6
I-19	6 M 10-FEB-2016		5.0
I-19	6 M 10-MAY-2016		6.6
I-19	6 M 04-AUG-2016		ND
I-19	6 M 01-NOV-2016		5.6
I-19	11 M 10-FEB-2016		10.4
I-19	11 M 10-MAY-2016		10.5
I-19	11 M 04-AUG-2016		4.7
I-19	11 M 01-NOV-2016		10.0
I-20	2 M 09-FEB-2016	ND	6.7
I-20	2 M 09-MAY-2016	ND	5.8
I-20	2 M 02-AUG-2016	ND	ND
I-20	2 M 02-NOV-2016	ND	ND
I-20	18 M 09-FEB-2016		6.1
I-20	18 M 09-MAY-2016		3.4
I-20	18 M 02-AUG-2016		ND
I-20	18 M 02-NOV-2016		ND

ND=not detected

South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-20	55 M 09-FEB-2016		3.6
I-20	55 M 09-MAY-2016		ND
I-20	55 M 02-AUG-2016		3.0
I-20	55 M 02-NOV-2016		ND
I-21	2 M 09-FEB-2016	ND	7.1
I-21	2 M 09-MAY-2016	ND	4.3
I-21	2 M 02-AUG-2016	ND	ND
I-21	2 M 02-NOV-2016	ND	ND
I-21	18 M 09-FEB-2016		3.9
I-21	18 M 09-MAY-2016		3.2
I-21	18 M 02-AUG-2016		ND
I-21	18 M 02-NOV-2016		ND
I-21	37 M 09-FEB-2016		6.5
I-21	37 M 09-MAY-2016		2.9
I-21	37 M 02-AUG-2016		ND
I-21	37 M 02-NOV-2016		ND
I-22	2 M 10-FEB-2016	ND	3.8
I-22	2 M 10-MAY-2016	ND	3.4
I-22	2 M 04-AUG-2016		ND
I-22	2 M 01-NOV-2016	ND	ND
I-22	18 M 10-FEB-2016		3.6
I-22	18 M 10-MAY-2016		ND
I-22	18 M 04-AUG-2016		ND
I-22	18 M 01-NOV-2016		ND
I-22	27 M 10-FEB-2016		6.1
I-22	27 M 10-MAY-2016		3.0
I-22	27 M 04-AUG-2016		ND
I-22	27 M 01-NOV-2016		5.4
I-23	2 M 10-FEB-2016	ND	ND
I-23	2 M 10-MAY-2016	ND	3.1
I-23	2 M 04-AUG-2016	ND	ND
I-23	2 M 01-NOV-2016	ND	ND
I-23	12 M 10-FEB-2016		ND
I-23	12 M 10-MAY-2016		ND
I-23	12 M 04-AUG-2016		ND
I-23	12 M 01-NOV-2016		ND
I-23	18 M 10-FEB-2016		5.4
I-23	18 M 10-MAY-2016		ND
I-23	18 M 04-AUG-2016		ND
I-23	18 M 01-NOV-2016		3.3
I-24	2 M 10-FEB-2016	ND	4.1

ND=not detected

South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-24	2 M 10-MAY-2016	ND	6.2
I-24	2 M 04-AUG-2016	ND	<2.5
I-24	2 M 01-NOV-2016	ND	<2.5
I-24	6 M 10-FEB-2016		3.5
I-24	6 M 10-MAY-2016		6.1
I-24	6 M 04-AUG-2016		3.0
I-24	6 M 01-NOV-2016		2.8
I-24	11 M 10-FEB-2016		13.0
I-24	11 M 10-MAY-2016		8.9
I-24	11 M 04-AUG-2016		3.0
I-24	11 M 01-NOV-2016		3.4
I-25	2 M 10-FEB-2016	ND	4.4
I-25	2 M 10-MAY-2016	ND	ND
I-25	2 M 04-AUG-2016	ND	3.2
I-25	2 M 01-NOV-2016	ND	ND
I-25	6 M 10-FEB-2016		6.2
I-25	6 M 10-MAY-2016		4.1
I-25	6 M 04-AUG-2016		6.0
I-25	6 M 01-NOV-2016		ND
I-25	9 M 10-FEB-2016		24.8
I-25	9 M 10-MAY-2016		4.5
I-25	9 M 04-AUG-2016		7.3
I-25	9 M 01-NOV-2016		3.5
I-26	2 M 10-FEB-2016	ND	7.6
I-26	2 M 10-MAY-2016	ND	ND
I-26	2 M 04-AUG-2016	ND	2.5
I-26	2 M 01-NOV-2016	ND	ND
I-26	6 M 10-FEB-2016		5.7
I-26	6 M 10-MAY-2016		3.6
I-26	6 M 04-AUG-2016		ND
I-26	6 M 01-NOV-2016		ND
I-26	9 M 10-FEB-2016		7.2
I-26	9 M 10-MAY-2016		3.6
I-26	9 M 04-AUG-2016		3.2
I-26	9 M 01-NOV-2016		3.7
I-30	2 M 11-FEB-2016	ND	2.7
I-30	2 M 11-MAY-2016	ND	ND
I-30	2 M 03-AUG-2016		<2.5
I-30	2 M 03-NOV-2016	ND	ND
I-30	18 M 11-FEB-2016		2.9
I-30	18 M 11-MAY-2016		4.5

ND=not detected

South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-30	18 M 03-AUG-2016		ND
I-30	18 M 03-NOV-2016		ND
I-30	27 M 11-FEB-2016		5.3
I-30	27 M 11-MAY-2016		ND
I-30	27 M 03-AUG-2016		ND
I-30	27 M 03-NOV-2016		2.6
I-32	2 M 11-FEB-2016	ND	3.5
I-32	2 M 11-MAY-2016	ND	3.2
I-32	2 M 03-AUG-2016		ND
I-32	2 M 03-NOV-2016	ND	3.2
I-32	6 M 11-FEB-2016		5.9
I-32	6 M 11-MAY-2016		4.9
I-32	6 M 03-AUG-2016		ND
I-32	6 M 03-NOV-2016		2.9
I-32	9 M 11-FEB-2016		5.6
I-32	9 M 11-MAY-2016		4.9
I-32	9 M 03-AUG-2016		ND
I-32	9 M 03-NOV-2016		4.6
I-33	2 M 11-FEB-2016	ND	ND
I-33	2 M 11-MAY-2016	ND	ND
I-33	2 M 03-AUG-2016		ND
I-33	2 M 03-NOV-2016	ND	ND
I-33	18 M 11-FEB-2016		2.6
I-33	18 M 11-MAY-2016		ND
I-33	18 M 03-AUG-2016		2.6
I-33	18 M 03-NOV-2016		ND
I-33	27 M 11-FEB-2016		3.3
I-33	27 M 11-MAY-2016		ND
I-33	27 M 03-AUG-2016		2.6
I-33	27 M 03-NOV-2016		ND
I-36	2 M 11-FEB-2016	ND	2.9
I-36	2 M 11-MAY-2016	ND	3.3
I-36	2 M 03-AUG-2016		ND
I-36	2 M 03-NOV-2016	ND	ND
I-36	6 M 11-FEB-2016		6.8
I-36	6 M 11-MAY-2016		2.7
I-36	6 M 03-AUG-2016		ND
I-36	6 M 03-NOV-2016		ND
I-36	11 M 11-FEB-2016		3.4
I-36	11 M 11-MAY-2016		7.1
I-36	11 M 03-AUG-2016		2.8

ND=not detected

South Bay Ocean Outfall Monitoring
Seawater Analysis for Total Suspended Solids and Hexane Extractable Material

Annual 2016

Analyte:		HEM	TSS
MDL:		1.4	2.5
SOURCE	SAMPLE DATE	mg/L	mg/L
I-36	11 M 03-NOV-2016		3.0
I-37	2 M 11-FEB-2016	ND	3.4
I-37	2 M 11-MAY-2016	ND	ND
I-37	2 M 03-AUG-2016		ND
I-37	2 M 03-NOV-2016	ND	ND
I-37	6 M 11-FEB-2016		ND
I-37	6 M 11-MAY-2016		4.0
I-37	6 M 03-AUG-2016		ND
I-37	6 M 03-NOV-2016		ND
I-37	11 M 11-FEB-2016		4.1
I-37	11 M 11-MAY-2016		8.7
I-37	11 M 03-AUG-2016		2.7
I-37	11 M 03-NOV-2016		ND
I-38	2 M 11-FEB-2016	ND	ND
I-38	2 M 11-MAY-2016	ND	3.3
I-38	2 M 03-AUG-2016		ND
I-38	2 M 03-NOV-2016	ND	ND
I-38	6 M 11-FEB-2016		2.9
I-38	6 M 11-MAY-2016		ND
I-38	6 M 03-AUG-2016		ND
I-38	6 M 03-NOV-2016		ND
I-38	11 M 11-FEB-2016		2.8
I-38	11 M 03-AUG-2016		3.4
I-38	11 M 03-NOV-2016		ND
I-39	2 M 10-FEB-2016	ND	4.4
I-39	2 M 10-MAY-2016	ND	3.4
I-39	2 M 04-AUG-2016		ND
I-39	2 M 01-NOV-2016	ND	ND
I-39	12 M 10-FEB-2016		6.6
I-39	12 M 10-MAY-2016		2.8
I-39	12 M 04-AUG-2016		2.5
I-39	12 M 01-NOV-2016		ND
I-39	18 M 10-FEB-2016		8.3
I-39	18 M 10-MAY-2016		3.7
I-39	18 M 04-AUG-2016		3.2
I-39	18 M 01-NOV-2016		4.0
I-40	2 M 10-FEB-2016	ND	4.7
I-40	2 M 10-MAY-2016	ND	4.4
I-40	2 M 04-AUG-2016		ND
I-40	2 M 01-NOV-2016	ND	6.3
I-40	6 M 10-FEB-2016		4.0
I-40	6 M 10-MAY-2016		5.3
I-40	6 M 04-AUG-2016		2.6
I-40	6 M 01-NOV-2016		7.0
I-40	9 M 10-FEB-2016		5.9
I-40	9 M 10-MAY-2016		11.3
I-40	9 M 04-AUG-2016		4.3
I-40	9 M 01-NOV-2016		8.1

ND=not detected

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VI. Annual Pretreatment Program Data

2016 Annual Pretreatment Program Sludge Analysis (QUARTERLY SLUDGE PROJECT)

SOUTH BAY WATER RECLAMATION PLANT
Order No. R9-2013-0006
NPDES Permit No.CA0109045

The Quarterly Sludge Project is part of the South Bay WRP NPDES (Permit No. CA0109045/ Order No. R9-2013-0006) monitoring requirements for the Metropolitan Sewerage System. The sampling plan is designed so as to provide a “snapshot” of all of the physical and chemical characteristics monitored of the wastewater treatment waste streams for a short interval of time (1-2 days). This is conducted quarterly.

The Quarterly Sludge Project was conducted four times during 2016. Sampling occurred on February 2, May 3, August 2, and October 4. Monthly composite samples of MBC dewatered sludge (belt-press dewatered) during the respective calendar months were taken and analyzed for a similar suite of parameters. The tables showing the results of these analyses follow in this section. Results relative to the Pt. Loma WWTP or North City Water Reclamation Plant are in the respective annual reports for those facilities.

* pH, Grease & Oils, temperature, and conductivity are determined from grab samples.

Abbreviations:

SB_INF_02	SBWRP influent
SB_OUTFALL_01	SBWRP effluent
SB_REC_WATER_34	SBWRP reclaim water
SB_PRIEFF_10	Primary Effluent
SB_SEC_EFF_20	Secondary effluent
SB_RSL_10	Primary Sed Tank to Sludge Line

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SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

ANNUAL 2016

Source:		INFLUENT	INFLUENT	INFLUENT	INFLUENT	EFFLUENT
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	02-FEB-2016
Analyte	MDL Units					
Aluminum	23.8 UG/L	580	501	516	611	ND
Antimony	2.44 UG/L	ND	ND	ND	ND	ND
Arsenic	4.12 UG/L	0.7	0.9	1.5	ND	0.4
Barium	.7 UG/L	79.5	113	117	160	54.1
Beryllium	.05 UG/L	ND	ND	ND	ND	ND
Boron	1.4 UG/L	397	382	327	314	384
Cadmium	.52 UG/L	0.41	0.35	0.15	ND	ND
Chromium	.54 UG/L	3.8	3.9	5.0	6.6	2.7
Cobalt	.24 UG/L	0.61	0.83	1.07	1.14	0.44
Copper	2.16 UG/L	78	83	99	123	9
Iron	15.6 UG/L	548	630	6040	3860	50
Lead	1.68 UG/L	ND	ND	5	4	ND
Manganese	.78 UG/L	82.1	73.8	95.2	94.5	34.2
Mercury	.625 UG/L	0.051	0.090	0.146	0.156	0.007
Molybdenum	.34 UG/L	9.14	7.44	6.79	7.89	5.86
Nickel	.53 UG/L	5.17	6.88	5.29	5.72	3.89
Selenium	.17 UG/L	1.33	1.65	1.73	1.25	0.35
Silver	.73 UG/L	ND	0.8	ND	26.0	ND
Thallium	3.12 UG/L	ND	ND	ND	ND	ND
Vanadium	.45 UG/L	1.85	2.59	NR	2.44	0.80
Vanadium	4.4 UG/L	NR	NR	9.85*	NR	NR
Zinc	4.19 UG/L	161	178	204	217.0	45.2
Calcium Hardness	.1 MG/L	156	203	190	177	161
Magnesium Hardness	.412 MG/L	115	130	115	111	114
Total Hardness	.512 MG/L	271	333	305	288	275
Total Alkalinity (bicarbonate)	20 MG/L	352^	368	345	358	155^
Calcium	.04 MG/L	62.4	81.4	76.1	70.9	64.5
Lithium	.012 MG/L	0.034	0.054**	0.038	0.044	0.029
Magnesium	.1 MG/L	27.9	31.5	27.9	27.1	27.6
Potassium	.3 MG/L	19.7	23.8	20.7	19.3	17.5
Sodium	1 MG/L	196	219	196	204	194
Bromide	.1 MG/L	0.3	0.4	0.3	0.3	0.4
Chloride	7 MG/L	229	224	221	234	238
Fluoride	.05 MG/L	0.26	0.50	0.37	0.30	0.51
Nitrate	.04 MG/L	2.57	0.74	0.12	ND	56.7
Ortho Phosphate (as P04)	.2 MG/L	11.6	11.5	8.8	9.8	0.8
Sulfate	9 MG/L	124	148	165	154	154
Cyanide, Total	.002 MG/L	ND	ND	ND	ND	ND
BOD	2 MG/L	306	375	264	363	8
pH (Grab)	PH	7.59	7.29	7.53	7.51	7.30
Settleable Solids (Grab)	.1 ML/L	15.5	11.0	24.7	27.0	ND
Turbidity	.13 NTU	185#	226	228	256	2.32#
Total Kjeldahl Nitrogen	1.6 MG/L	58.0	58.8	58.3	58.8	2.0
Ammonia-N	.3 MG/L	37.8^	33.6	37.6	30.5	ND^
Sulfides-Total	.4 MG/L	1.43	6.02	4.73	10.7	ND
Total Suspended Solids	2.5 MG/L	230	352	286	298	4.6
Volatile Suspended Solids	2.5 MG/L	216	326	266	272	4.4
Total Dissolved Solids	100 MG/L	1010	1050	1080	1040	920
MBAS (Surfactants)	.03 MG/L	11.3	8.72	8.65	9.86	0.16

*= Internal standard did not meet QC criteria for this analyte. Result is not used in average calculations.

^= Samples analyzed with expired buffer solution.

#= Samples analyzed with expired initial calibration.

**= Blank did not meet QC criteria for this analyte due to contamination. The result value of the blank in this batch was 0.028 MG/L, result above the MDL. Result is not used in computations.

ND= Not Detected; NR= Not required
Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

ANNUAL 2016

Source:		EFFLUENT 03-MAY-2016	EFFLUENT 02-AUG-2016	EFFLUENT 04-OCT-2016
Analyte	MDL Units			
Aluminum	23.8 UG/L	ND	ND	ND
Antimony	2.44 UG/L	ND	ND	ND
Arsenic	4.12 UG/L	0.6	1.2	0.1
Barium	.7 UG/L	85.1	32.1	51.5
Beryllium	.05 UG/L	ND	ND	ND
Boron	1.4 UG/L	352	331	323
Cadmium	.52 UG/L	0.32	ND	ND
Chromium	.54 UG/L	2.0	2.2	1.3
Cobalt	.24 UG/L	0.60	0.82	0.75
Copper	2.16 UG/L	9	13	9
Iron	15.6 UG/L	51	283	189
Lead	1.68 UG/L	ND	ND	ND
Manganese	.78 UG/L	25.2	75.4	56.2
Mercury	.625 UG/L	0.006	ND	ND
Molybdenum	.34 UG/L	4.25	5.34	4.23
Nickel	.53 UG/L	6.76	3.48	3.82
Selenium	.17 UG/L	0.88	0.85	0.54
Silver	.73 UG/L	ND	ND	ND
Thallium	3.12 UG/L	ND	ND	ND
Vanadium	.45 UG/L	1.30	3.47*	2.03
Zinc	4.19 UG/L	57.0	9.2	12.0
Calcium Hardness	.1 MG/L	220	182	186
Magnesium Hardness	.412 MG/L	127	113	116
Total Hardness	.512 MG/L	347	295	302
Total Alkalinity (bicarbonate)	20 MG/L	177	190	152
Calcium	.04 MG/L	88.3	73.1	74.3
Lithium	.012 MG/L	0.055**	0.037	0.045
Magnesium	.1 MG/L	31.0	27.4	28.2
Potassium	.3 MG/L	21.3	18.8	17.9
Sodium	1 MG/L	220	198	187
Bromide	.1 MG/L	ND	0.3	0.3
Chloride	7 MG/L	238	225	226
Fluoride	.05 MG/L	0.49	0.45	0.42
Nitrate	.04 MG/L	36.9	15.8	42.7
Ortho Phosphate (as P04)	.2 MG/L	7.5	1.7	5.8
Sulfate	9 MG/L	225	208	210
Cyanide, Total	.002 MG/L	ND	0.002	ND
BOD	2 MG/L	11	15	5
pH (Grab)	PH	7.32	7.31	7.30
Settleable Solids (Grab)	.1 ML/L	ND	ND	ND
Turbidity	.13 NTU	2.87	2.82	2.35
Total Kjeldahl Nitrogen	1.6 MG/L	2.5	7.6	4.1
Chlorine Residual, Total (Grab)	.03 MG/L	0.09	0.04	0.07
Ammonia-N	.3 MG/L	ND	7.4	ND
Sulfides-Total	.4 MG/L	ND	ND	0.40
Total Suspended Solids	2.5 MG/L	4.9	6.7	3.6
Volatile Suspended Solids	2.5 MG/L	4.5	5.7	3.6
Total Dissolved Solids	100 MG/L	1020	1000	912
MBAS (Surfactants)	.03 MG/L	0.13	0.11	0.09

*= Internal standard did not meet QC criteria for this analyte. Result is not used in average calculations.

**= Blank did not meet QC criteria for this analyte due to contamination. The result value of the blank in this batch was 0.028 MG/L, result above the MDL. Result is not used in computations.

ND= Not Detected; NR= Not required
Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

ANNUAL 2016

Source:		PRI_EFF 02-FEB-2016	PRI_EFF 03-MAY-2016	PRI_EFF 02-AUG-2016	PRI_EFF 04-OCT-2016	SEC_EFF 02-FEB-2016
Date:						
Analyte	MDL Units					
Aluminum	23.8 UG/L	347	230	261	307	ND
Antimony	2.44 UG/L	2.9	ND	ND	ND	ND
Arsenic	4.12 UG/L	0.6	0.7	1.5	1.1	0.4
Barium	.7 UG/L	70.6	96.7	91.8	107	55.9
Beryllium	.05 UG/L	ND	ND	ND	ND	ND
Boron	1.4 UG/L	415	370	335	321	400
Cadmium	.52 UG/L	0.34	0.41	<0.10	ND	ND
Chromium	.54 UG/L	2.9	3.7	3.1	4.1	2.9
Cobalt	.24 UG/L	0.66	0.47	0.97	0.86	0.34
Copper	2.16 UG/L	60	59	65	73	8
Iron	15.6 UG/L	358	343	3650	2720	61
Lead	1.68 UG/L	ND	ND	4	3	ND
Manganese	.78 UG/L	79.2	79.7	85.3	94.7	35.8
Mercury	.625 UG/L	0.038	0.057	0.052	0.066	0.005
Molybdenum	.34 UG/L	8.18	6.23	6.03	7.59	5.61
Nickel	.53 UG/L	4.88	6.62	4.17	4.51	3.47
Selenium	.17 UG/L	0.91	1.44	1.09	1.44	0.43
Silver	.73 UG/L	ND	ND	ND	ND	ND
Thallium	3.12 UG/L	ND	ND	ND	ND	ND
Vanadium	.45 UG/L	1.24	1.26	8.21*	0.76	0.51
Zinc	4.19 UG/L	127	113	125	126	37.8
=====	=====	=====	=====	=====	=====	=====
Calcium Hardness	.1 MG/L	154	204	183	179	167
Magnesium Hardness	.412 MG/L	115	128	113	111	116
Total Hardness	.512 MG/L	269	332	296	290	283
Total Alkalinity (bicarbonate)	20 MG/L	353^	361	333	353	157^
Total Alkalinity (10-FEB-2016)	20 MG/L	316^	NR	NR	NR	170^
Total Alkalinity (17-FEB-2016)	20 MG/L	338	NR	NR	NR	183
Total Alkalinity (24-FEB-2016)	20 MG/L	376	NR	NR	NR	186
=====	=====	=====	=====	=====	=====	=====
Calcium	.04 MG/L	61.6	81.7	73.4	71.8	66.9
Lithium	.012 MG/L	0.034	0.052**	0.037	0.045	0.033
Magnesium	.1 MG/L	27.8	31.1	27.5	27.0	28.3
Potassium	.3 MG/L	21.4	22.3	20.0	18.4	17.8
Sodium	1 MG/L	195	226	198	188	200
=====	=====	=====	=====	=====	=====	=====
Bromide	.1 MG/L	0.4	0.4	0.3	0.3	0.4
Chloride	7 MG/L	233	246	233	224	238
Fluoride	.05 MG/L	0.27	0.52	0.38	0.33	0.51
Nitrate	.04 MG/L	0.16	0.09	0.07	ND	59.7
Ortho Phosphate (as P04)	.2 MG/L	10.2	10.7	7.2	8.7	0.8
Sulfate	9 MG/L	120	171	162	170	154
Cyanide, Total	.002 MG/L	ND	ND	ND	ND	ND
BOD	2 MG/L	202	271	163	225	9
pH (Grab)	PH	7.63	7.80	7.77	7.74	7.34
Settleable Solids (Grab)	.1 ML/L	0.2	0.5	1.2	0.9	ND
Turbidity	.13 NTU	123#	132	152	235	NR
Total Kjeldahl Nitrogen	1.6 MG/L	54.1	57.9	57.1	52.9	2.1
Ammonia-N	.3 MG/L	36.4^	34.8	33.6	32.5	ND^
Sulfides-Total	.4 MG/L	0.74	1.74	2.49	2.29	0.41
Total Suspended Solids	2.5 MG/L	87.5	138	108	193	6.2
Volatile Suspended Solids	2.5 MG/L	82.5	128	103	135	5.5
Total Dissolved Solids	100 MG/L	976	1060	1000	960	920
MBAS (Surfactants)	.03 MG/L	4.52	5.29	3.55	4.73	0.14

*= Internal standard did not meet QC criteria for this analyte. Result is not used in average calculations.

^= Samples analyzed with expired buffer solution.

**= Blank did not meet QC criteria for this analyte due to contamination. The result value of the blank in this batch was 0.028 MG/L, result above the MDL. Result is not used in computations.

#= Samples analyzed with expired initial calibration.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

ANNUAL 2016

Source:		SEC_EFF	SEC_EFF	SEC_EFF	RAW SLUDGE	RAW SLUDGE
Date:		03-MAY-2016	02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016
Analyte	MDL Units					
Aluminum	23.8 UG/L	26	ND	ND	28000	20700
Antimony	2.44 UG/L	ND	ND	ND	49.2	9.0
Arsenic	4.12 UG/L	0.6	1.4	0.2	9.9	4.2
Barium	.7 UG/L	82.1	31.8	49.5	1240	1360
Beryllium	.05 UG/L	ND	ND	ND	ND	ND
Boron	1.4 UG/L	347	349	319	457	439
Cadmium	.52 UG/L	ND	ND	ND	7.78	5.88
Chromium	.54 UG/L	1.9	1.6	2.3	103	106
Cobalt	.24 UG/L	0.51	0.84	0.52	11.6	11.8
Copper	2.16 UG/L	13	10	12	1840	2440
Iron	15.6 UG/L	50	283	206	34200	27300
Lead	1.68 UG/L	ND	2	3	80	80
Manganese	.78 UG/L	36.0	71.3	53.4	761	751
Mercury	.625 UG/L	0.005	0.007	ND	2.41	7.35
Molybdenum	.34 UG/L	4.32	4.57	4.04	68.6	94.6
Nickel	.53 UG/L	6.36	4.22	3.51	93.6	103
Selenium	.17 UG/L	0.85	0.76	0.54	4.08	3.84
Silver	.73 UG/L	ND	ND	0.9	5.6	11.9
Thallium	3.12 UG/L	ND	ND	ND	ND	ND
Vanadium	.45 UG/L	1.17	NR	1.62	68.3	72.7
Vanadium	1.1 UG/L	NR	3.71*	NR	NR	NR
Zinc	4.19 UG/L	79.6	9.6	12.6	5200	5000
Calcium Hardness	.1 MG/L	213	182	181	247	280
Magnesium Hardness	.412 MG/L	125	113	113	147	168
Total Hardness	.512 MG/L	338	295	294	394	448
Total Alkalinity (bicarbonate)	20 MG/L	176	174	150	508^	812
Calcium	.04 MG/L	85.2	73.1	72.6	98.9	112
Lithium	.012 MG/L	0.052**	0.036	0.045	0.040	0.056**
Magnesium	.1 MG/L	30.4	27.4	27.5	35.7	40.7
Potassium	.3 MG/L	20.5	18.8	17.9	31.4	37.8
Sodium	1 MG/L	215	193	186	191	226
Bromide	.1 MG/L	ND	0.3	0.3	ND	1.3
Chloride	7 MG/L	240	229	223	233	238
Fluoride	.05 MG/L	0.49	0.43	0.42	ND	0.18
Nitrate	.04 MG/L	90.4	22.2	40.2	ND	0.1
Ortho Phosphate (as PO4)	.2 MG/L	7.5	2.6	5.9	48.2	50.9
Sulfate	9 MG/L	223	201	210	59	34
Cyanide, Total	.002 MG/L	ND	ND	ND	0.013	0.007
BOD	2 MG/L	9	13	9	NR	NR
pH	PH	7.37	7.67	7.45	NR	NR
Settleable Solids	.1 ML/L	ND	ND	ND	NR	NR
Total Kjeldahl Nitrogen	1.6 MG/L	ND	7.5	4.0	456	576
Ammonia-N	.3 MG/L	ND	4.8	1.1	NR	NR
Sulfides-Total	.4 MG/L	ND	ND	0.71	31.8	50.7
Total Suspended Solids	2.5 MG/L	7.3	8.5	5.6	NR	NR
Volatile Suspended Solids	2.5 MG/L	6.5	7.9	5.1	NR	NR
Total Dissolved Solids	100 MG/L	1020	984	940	NR	NR
MBAS (Surfactants)	.03 MG/L	0.16	0.1	0.1	NR	NR

*= Internal standard did not meet QC criteria for this analyte. Result is not used in average calculations.

^= Samples analyzed with expired buffer solution.

**= Blank did not meet QC criteria for this analyte due to contamination. The result value of the blank in this batch was 0.028 MG/L, result above the MDL. Result is not used in computations.

ND= Not Detected; NR= Not Required
Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

ANNUAL 2016

Source:		RAW SLUDGE 02-AUG-2016	RAW SLUDGE 04-OCT-2016	REC_WATER 02-FEB-2016	REC_WATER 03-MAY-2016	REC_WATER 02-AUG-2016
Analyte	MDL Units					
Aluminum	23.8 UG/L	25500	11800	ND	ND	38
Antimony	2.44 UG/L	17.1	2.7	<2.4	ND	ND
Arsenic	4.12 UG/L	26.6	0.5	0.4	0.5	1.3
Barium	.7 UG/L	2130	1460	56.3	85.4	32.1
Beryllium	.05 UG/L	ND	ND	ND	ND	ND
Boron	1.4 UG/L	401	361	394	353	345
Cadmium	.52 UG/L	6.05	4.82	ND	ND	ND
Chromium	.54 UG/L	214	154	2.4	1.7	2.3
Cobalt	.24 UG/L	22.70	7.96	0.49	ND	1.02
Copper	2.16 UG/L	3960	2110	8	7	12
Iron	15.6 UG/L	156000	65600	46	41	126
Lead	1.68 UG/L	154	63	ND	ND	ND
Manganese	.78 UG/L	1090	591	24.9	20.9	58.2
Mercury	.625 UG/L	15.7	2.9	0.005	ND	ND
Molybdenum	.34 UG/L	187	105	5.79	4.42	4.70
Nickel	.53 UG/L	183	68.5	3.65	6.14	4.82
Selenium	.17 UG/L	19.6	1.17	0.37	0.85	0.59
Silver	.73 UG/L	33.9	6.1	ND	ND	ND
Thallium	3.12 UG/L	<1.6	ND	ND	ND	ND
Vanadium	.45 UG/L	NR	40.5	<0.45	0.51	NR
Vanadium	22.0 UG/L	234*	NR	NR	NR	NR
Vanadium	1.1 UG/L	NR	NR	NR	NR	6.26*
Zinc	4.19 UG/L	6560	4270	34.8	34.3	15.1
Calcium Hardness	.1 MG/L	284	205	162	220	179
Magnesium Hardness	.412 MG/L	145	128	118	126	111
Total Hardness	.512 MG/L	429	333	280	346	290
Total Alkalinity (bicarbonate)	20 MG/L	527	501	157^	178	180
Calcium	.04 MG/L	114	82.1	65.0	88.3	71.5
Lithium	.012 MG/L	0.081	0.043	0.029	0.042**	0.036
Magnesium	.1 MG/L	35.2	31.0	28.5	30.7	26.9
Potassium	.3 MG/L	26.0	24.1	17.6	20.9	17.8
Sodium	1 MG/L	179	177	198	226	192
Bromide	.1 MG/L	0.8	0.4	0.4	0.2	0.3
Chloride	7 MG/L	221	217	241	251	229
Fluoride	.05 MG/L	0.20	0.14	0.50	0.47	0.42
Nitrate	.04 MG/L	0.05	ND	56.8	32.3	21.9
Ortho Phosphate (as P04)	.2 MG/L	41.5	22.6	1.1	7.2	2.3
Sulfate	9 MG/L	10	39	154	229	201
Cyanide, Total	.002 MG/L	0.010	0.007	0.002	0.004	0.002
BOD	2 MG/L	NR	NR	2	5	3
pH	PH	NR	NR	7.13	7.20	7.18
Turbidity	.13 NTU	NR	NR	0.59#	0.99	2.07
Total Kjeldahl Nitrogen	1.6 MG/L	567	318	ND	ND	7.4
Ammonia-N	.3 MG/L	NR	NR	ND^	ND	4.5
Sulfides-Total	.4 MG/L	104	61.2	ND	ND	ND
Total Suspended Solids	2.5 MG/L	NR	NR	ND	ND	ND
Volatile Suspended Solids	2.5 MG/L	NR	NR	ND	ND	ND
Total Dissolved Solids	100 MG/L	NR	NR	920	1060	1010
MBAS (Surfactants)	.03 MG/L	NR	NR	0.14	0.11	0.11

*= Internal standard did not meet QC criteria for this analyte. Result is not used in average calculations.

^= Samples analyzed with expired buffer solution.

**= Blank did not meet QC criteria for this analyte due to contamination. The result value of the blank in this batch was 0.028 MG/L, result above the MDL. Result is not used in computations.

#= Samples analyzed with expired initial calibration.

ND= Not Detected; NR= Not Required

Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Daily Parameters and Metals

ANNUAL 2016

Source:	REC_WATER	
Date:	04-OCT-2016	
Analyte	MDL	Units
Aluminum	23.8	UG/L
Antimony	2.44	UG/L
Arsenic	4.12	UG/L
Barium	.7	UG/L
Beryllium	.05	UG/L
Boron	1.4	UG/L
Cadmium	.52	UG/L
Chromium	.54	UG/L
Cobalt	.24	UG/L
Copper	2.16	UG/L
Iron	15.6	UG/L
Lead	1.68	UG/L
Manganese	.78	UG/L
Mercury	.625	UG/L
Molybdenum	.34	UG/L
Nickel	.53	UG/L
Selenium	.17	UG/L
Silver	.73	UG/L
Thallium	3.12	UG/L
Vanadium	.45	UG/L
Zinc	4.19	UG/L
Calcium Hardness	.1	MG/L
Magnesium Hardness	.412	MG/L
Total Hardness	.512	MG/L
Total Alkalinity (bicarbonate)	20	MG/L
Calcium	.04	MG/L
Lithium	.012	MG/L
Magnesium	.1	MG/L
Potassium	.3	MG/L
Sodium	1	MG/L
Bromide	.1	MG/L
Chloride	7	MG/L
Fluoride	.05	MG/L
Nitrate	.04	MG/L
Ortho Phosphate (as P04)	.2	MG/L
Sulfate	9	MG/L
Cyanide, Total	.002	MG/L
BOD	2	MG/L
pH		PH
Turbidity	.13	NTU
Total Kjeldahl Nitrogen	1.6	MG/L
Ammonia-N	.3	MG/L
Sulfides-Total	.4	MG/L
Total Suspended Solids	2.5	MG/L
Volatile Suspended Solids	2.5	MG/L
Total Dissolved Solids	100	MG/L
MBAS (Surfactants)	.03	MG/L

ND= Not Detected; NR= Not Required
Chromium results are for Total Chromium.

SOUTH BAY WATER RECLAMATION PLANT
Ammonia-Nitrogen and Total Cyanides

Annual 2016

Total Cyanide, MDL=0.002 mg/L

	INFLUENT	EFFLUENT	PRI EFF	SEC EFF	RSL
02-FEB-2016	ND	ND	ND	ND	0.013
03-MAY-2016	ND	ND	ND	ND	0.007
02-AUG-2016	ND	0.002	ND	ND	0.010
04-OCT-2016	ND	ND	ND	ND	0.007
AVERAGE	ND	0.001	ND	ND	0.009

Ammonia as Nitrogen, MDL=0.3 mg/L

	INFLUENT	EFFLUENT	PRI EFF	SEC EFF
02-FEB-2016	37.8*	ND*	36.4*	ND*
03-MAY-2016	33.6	ND	34.8	ND
02-AUG-2016	37.6	7.4	33.6	4.8
04-OCT-2016	30.5	ND	32.5	1.1
AVERAGE	33.9	2.5	33.6	2.0

ND= Not Detected

*= these samples were analyzed with an expired buffer solution.

SOUTH BAY WATER RECLAMATION PLANT
Radioactivity

Annual 2016

Source	Sample Date	Sample ID	Gross Alpha Radiation	Gross Beta Radiation
INFLUENT	02-FEB-2016	P831481	6.4 ± 5.6	22.1 ± 5.2
INFLUENT	03-MAY-2016	P857791	5.5 ± 2.2	6.8 ± 1.6
INFLUENT	02-AUG-2016	P878460	1.0 ± 1.6	9.1 ± 1.5
INFLUENT	04-OCT-2016	P895201	6.2 ± 3.5	13.8 ± 2.7
AVERAGE			4.8 ± 3.2	13.0 ± 2.8

Source	Sample Date	Sample ID	Gross Alpha Radiation	Gross Beta Radiation
EFFLUENT	02-FEB-2016	P831486	-0.7 ± 3.6	20.1 ± 4.2
EFFLUENT	03-MAY-2016	P857796	8.6 ± 2.1	10.1 ± 1.6
EFFLUENT	02-AUG-2016	P878465	4.3 ± 2.3	6.6 ± 1.6
EFFLUENT	04-OCT-2016	P895206	4.8 ± 3.1	5.1 ± 2.1
AVERAGE			4.3 ± 2.8	10.4 ± 2.4

Source	Sample Date	Sample ID	Gross Alpha Radiation	Gross Beta Radiation
PRI EFF	02-FEB-2016	P831496	2.0 ± 4.2	22.1 ± 4.9
PRI EFF	03-MAY-2016	P857806	6.8 ± 1.7	7.5 ± 1.5
PRI EFF	02-AUG-2016	P878475	2.3 ± 1.6	5.4 ± 1.6
PRI EFF	04-OCT-2016	P895216	8.0 ± 2.2	15.4 ± 1.9
AVERAGE			4.8 ± 2.4	12.6 ± 2.5

Source	Sample Date	Sample ID	Gross Alpha Radiation	Gross Beta Radiation
SEC EFF	02-FEB-2016	P831501	4.6 ± 4.0	15.7 ± 3.6
SEC EFF	03-MAY-2016	P857811	3.0 ± 1.8	6.7 ± 1.5
SEC EFF	02-AUG-2016	P878480	2.5 ± 1.7	5.8 ± 1.7
SEC EFF	04-OCT-2016	P895221	4.7 ± 3.1	9.7 ± 2.4
AVERAGE			3.7 ± 2.7	9.5 ± 2.3

Source	Sample Date	Sample ID	Gross Alpha Radiation	Gross Beta Radiation
REC WATER	02-FEB-2016	P831517	1.5 ± 3.4	16.7 ± 4.1
REC WATER	03-MAY-2016	P857825	5.4 ± 1.8	9.5 ± 1.6
REC WATER	02-AUG-2016	P878496	3.5 ± 2.0	2.3 ± 1.0
REC WATER	04-OCT-2016	P895235	6.5 ± 1.9	14.5 ± 1.8
AVERAGE			4.2 ± 2.3	10.8 ± 2.1

Units in picocuries/liter (pCi/L)

SOUTH BAY WATER RECLAMATION PLANT
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2016

Source:		INFLUENT	INFLUENT	INFLUENT	INFLUENT	EFFLUENT	EFFLUENT
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016
Analyte	MDL Units	P831481	P857791	P878460	P895201	P831486	P857796
Aldrin	4 NG/L	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	2.15 NG/L	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	2 NG/L	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	2 NG/L	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	1.71 NG/L	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	1.4 NG/L	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	1.83 NG/L	ND	ND	ND	ND	ND	ND
Alpha Chlordene	NG/L	NA	NA	NA	NA	NA	NA
Gamma Chlordene	NG/L	NA	NA	NA	NA	NA	NA
Cis Nonachlor	4 NG/L	ND	ND	ND	ND	ND	ND
Dieldrin	4.3 NG/L	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	7 NG/L	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	1.5 NG/L	ND	ND	ND	ND	ND	ND
Beta Endosulfan	3.1 NG/L	ND	ND	ND	ND	ND	ND
Endrin	6 NG/L	ND	ND	ND	ND	ND	ND
Endrin aldehyde	5.4 NG/L	ND	ND	ND	ND	ND	ND
Heptachlor	.89 NG/L	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	9.4 NG/L	ND	ND	ND	ND	ND	ND
Methoxychlor	20 NG/L	ND	ND	ND	ND	ND	ND
Mirex	2.3 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDD	4 NG/L	ND	ND	340	ND	ND	ND
o,p-DDE	2 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDT	2.4 NG/L	ND	ND	ND	ND	ND	ND
Oxychlordane	2 NG/L	ND	ND	ND	ND	ND	ND
PCB 1016	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1221	2000 NG/L	ND	ND	ND	ND	ND	ND
PCB 1232	750 NG/L	ND	ND	ND	ND	ND	ND
PCB 1242	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1248	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1254	500 NG/L	ND	ND	ND	ND	ND	ND
PCB 1260	500 NG/L	ND	ND	ND	ND	ND	ND
PCB 1262	500 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDD	4 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDE	1.4 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDT	3 NG/L	ND	ND	ND	ND	ND	ND
Toxaphene	250 NG/L	ND	ND	ND	ND	ND	ND
Trans Nonachlor	1.1 NG/L	ND	ND	ND	ND	ND	ND
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Aldrin + Dieldrin	4.3 NG/L	0	0	0	0	0	0
Hexachlorocyclohexanes	2.15 NG/L	0	0	0	0	0	0
DDT and derivatives	4 NG/L	0	0	340	0	0	0
Chlordane + related cmpds.	4 NG/L	0	0	0	0	0	0
Polychlorinated biphenyls	2000 NG/L	0	0	0	0	0	0
Endosulfans	7 NG/L	0	0	0	0	0	0
Heptachlors	9.4 NG/L	0	0	0	0	0	0
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Chlorinated Hydrocarbons	2000 NG/L	0	0	340	0	0	0

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
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2016

Source:		EFFLUENT	EFFLUENT	PRI EFF	PRI EFF	PRI EFF	PRI EFF
Date:		02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P878465	P895206	P831496	P857806	P878475	P895216
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Aldrin	4 NG/L	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	2.15 NG/L	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	2 NG/L	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	2 NG/L	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	1.71 NG/L	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	1.4 NG/L	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	1.83 NG/L	ND	ND	ND	ND	ND	ND
Alpha Chlordene	NG/L	NA	NA	NA	NA	NA	NA
Gamma Chlordene	NG/L	NA	NA	NA	NA	NA	NA
Cis Nonachlor	4 NG/L	ND	ND	ND	ND	ND	ND
Dieldrin	4.3 NG/L	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	7 NG/L	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	1.5 NG/L	ND	ND	ND	ND	ND	ND
Beta Endosulfan	3.1 NG/L	ND	ND	ND	ND	ND	ND
Endrin	6 NG/L	ND	ND	ND	ND	ND	ND
Endrin aldehyde	5.4 NG/L	ND	ND	ND	ND	ND	ND
Heptachlor	.89 NG/L	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	9.4 NG/L	ND	ND	ND	ND	ND	ND
Methoxychlor	20 NG/L	ND	ND	ND	ND	ND	ND
Mirex	2.3 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDD	4 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDE	2 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDT	2.4 NG/L	ND	ND	ND	ND	ND	ND
Oxychlordane	2 NG/L	ND	ND	ND	ND	ND	ND
PCB 1016	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1221	2000 NG/L	ND	ND	ND	ND	ND	ND
PCB 1232	750 NG/L	ND	ND	ND	ND	ND	ND
PCB 1242	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1248	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1254	500 NG/L	ND	ND	ND	ND	ND	ND
PCB 1260	500 NG/L	ND	ND	ND	ND	ND	ND
PCB 1262	500 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDD	4 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDE	1.4 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDT	3 NG/L	ND	ND	ND	ND	ND	ND
Toxaphene	250 NG/L	ND	ND	ND	ND	ND	ND
Trans Nonachlor	1.1 NG/L	ND	ND	ND	ND	ND	ND
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Aldrin + Dieldrin	4.3 NG/L	0	0	0	0	0	0
Hexachlorocyclohexanes	2.15 NG/L	0	0	0	0	0	0
DDT and derivatives	4 NG/L	0	0	0	0	0	0
Chlordane + related cmpds.	4 NG/L	0	0	0	0	0	0
Polychlorinated biphenyls	2000 NG/L	0	0	0	0	0	0
Endosulfans	7 NG/L	0	0	0	0	0	0
Heptachlors	9.4 NG/L	0	0	0	0	0	0
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Chlorinated Hydrocarbons	2000 NG/L	0	0	0	0	0	0

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
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2016

Source:		SEC EFF	SEC EFF	SEC EFF	SEC EFF	RSL	RSL
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016
Analyte	MDL Units	P831501	P857811	P878480	P895221	P831515	P857823
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Aldrin	4 NG/L	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	2.15 NG/L	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	2 NG/L	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	2 NG/L	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	1.71 NG/L	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	1.4 NG/L	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	1.83 NG/L	ND	ND	ND	ND	ND	ND
Alpha Chlordene	NG/L	NA	NA	NA	NA	NA	NA
Gamma Chlordene	NG/L	NA	NA	NA	NA	NA	NA
Cis Nonachlor	4 NG/L	ND	ND	ND	ND	ND	ND
Dieldrin	4.3 NG/L	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	7 NG/L	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	1.5 NG/L	ND	ND	ND	ND	ND	ND
Beta Endosulfan	3.1 NG/L	ND	ND	ND	ND	ND	ND
Endrin	6 NG/L	ND	ND	ND	ND	ND	ND
Endrin aldehyde	5.4 NG/L	ND	ND	ND	ND	ND	ND
Heptachlor	.89 NG/L	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	9.4 NG/L	ND	ND	ND	ND	ND	ND
Methoxychlor	20 NG/L	ND	ND	ND	ND	ND	ND
Mirex	2.3 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDD	4 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDE	2 NG/L	ND	ND	ND	ND	ND	ND
o,p-DDT	2.4 NG/L	ND	ND	ND	ND	ND	ND
Oxychlordane	2 NG/L	ND	ND	ND	ND	ND	ND
PCB 1016	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1221	2000 NG/L	ND	ND	ND	ND	ND	ND
PCB 1232	750 NG/L	ND	ND	ND	ND	ND	ND
PCB 1242	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1248	250 NG/L	ND	ND	ND	ND	ND	ND
PCB 1254	500 NG/L	ND	ND	ND	ND	ND	ND
PCB 1260	500 NG/L	ND	ND	ND	ND	ND	ND
PCB 1262	500 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDD	4 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDE	1.4 NG/L	ND	ND	ND	ND	ND	ND
p,p-DDT	3 NG/L	ND	ND	ND	ND	ND	ND
Toxaphene	250 NG/L	ND	ND	ND	ND	ND	ND
Trans Nonachlor	1.1 NG/L	ND	ND	ND	ND	ND	ND
<hr/>							
Aldrin + Dieldrin	4.3 NG/L	0	0	0	0	0	0
Hexachlorocyclohexanes	2.15 NG/L	0	0	0	0	0	0
DDT and derivatives	4 NG/L	0	0	0	0	0	0
Chlordane + related cmpds.	4 NG/L	0	0	0	0	0	0
Polychlorinated biphenyls	2000 NG/L	0	0	0	0	0	0
Endosulfans	7 NG/L	0	0	0	0	0	0
Heptachlors	9.4 NG/L	0	0	0	0	0	0
<hr/>							
Chlorinated Hydrocarbons	2000 NG/L	0	0	0	0	0	0

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
Chlorinated Pesticide Analysis, EPA Method 608 (with additions)

Annual 2016

Source:		RSL	RSL	REC_WATER	REC_WATER	REC_WATER	REC_WATER	
Date:		02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	
Analyte	MDL	Units	P878494	P895233	P831517	P857825	P878496	P895235
<hr/>								
Aldrin	4	NG/L	ND	ND	ND	ND	ND	ND
BHC, Alpha isomer	2.15	NG/L	ND	ND	ND	ND	ND	ND
BHC, Beta isomer	2	NG/L	ND	ND	ND	ND	ND	ND
BHC, Delta isomer	2	NG/L	ND	ND	ND	ND	ND	ND
BHC, Gamma isomer	1.71	NG/L	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	1.4	NG/L	ND	ND	ND	ND	ND	ND
Gamma (trans) Chlordane	1.83	NG/L	ND	ND	ND	ND	ND	ND
Alpha Chlordene		NG/L	NA	NA	NA	NA	NA	NA
Gamma Chlordene		NG/L	NA	NA	NA	NA	NA	NA
Cis Nonachlor	4	NG/L	ND	ND	ND	ND	ND	ND
Dieldrin	4.3	NG/L	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	7	NG/L	ND	ND	ND	ND	ND	ND
Alpha Endosulfan	1.5	NG/L	ND	ND	ND	ND	ND	ND
Beta Endosulfan	3.1	NG/L	ND	ND	ND	ND	ND	ND
Endrin	6	NG/L	ND	ND	ND	ND	ND	ND
Endrin aldehyde	5.4	NG/L	ND	ND	ND	ND	ND	ND
Heptachlor	.89	NG/L	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	9.4	NG/L	ND	ND	ND	ND	ND	ND
Methoxychlor	20	NG/L	ND	ND	ND	ND	ND	ND
Mirex	2.3	NG/L	ND	ND	ND	ND	ND	ND
o,p-DDD	4	NG/L	ND	ND	ND	ND	ND	ND
o,p-DDE	2	NG/L	ND	ND	ND	ND	ND	ND
o,p-DDT	2.4	NG/L	ND	ND	ND	ND	ND	ND
Oxychlordane	2	NG/L	ND	ND	ND	ND	ND	ND
PCB 1016	250	NG/L	ND	ND	ND	ND	ND	ND
PCB 1221	2000	NG/L	ND	ND	ND	ND	ND	ND
PCB 1232	750	NG/L	ND	ND	ND	ND	ND	ND
PCB 1242	250	NG/L	ND	ND	ND	ND	ND	ND
PCB 1248	250	NG/L	ND	ND	ND	ND	ND	ND
PCB 1254	500	NG/L	ND	ND	ND	ND	ND	ND
PCB 1260	500	NG/L	ND	ND	ND	ND	ND	ND
PCB 1262	500	NG/L	ND	ND	ND	ND	ND	ND
p,p-DDD	4	NG/L	ND	ND	ND	ND	ND	ND
p,p-DDE	1.4	NG/L	ND	ND	ND	ND	ND	ND
p,p-DDT	3	NG/L	ND	ND	ND	ND	ND	ND
Toxaphene	250	NG/L	ND	ND	ND	ND	ND	ND
Trans Nonachlor	1.1	NG/L	ND	ND	ND	ND	ND	ND
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Aldrin + Dieldrin	4.3	NG/L	0	0	0	0	0	0
Hexachlorocyclohexanes	2.15	NG/L	0	0	0	0	0	0
DDT and derivatives	4	NG/L	0	0	0	0	0	0
Chlordane + related cmpds.	4	NG/L	0	0	0	0	0	0
Polychlorinated biphenyls	2000	NG/L	0	0	0	0	0	0
Endosulfans	7	NG/L	0	0	0	0	0	0
Heptachlors	9.4	NG/L	0	0	0	0	0	0
<hr/>								
Chlorinated Hydrocarbons	2000	NG/L	0	0	0	0	0	0

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 Pesticides by EPA Method 614/622 (with additions)

Annual 2016

Source:		INF	INF	EFF	EFF	PRI EFF	PRI EFF
Date:		03-MAY-2016	04-OCT-2016	03-MAY-2016	04-OCT-2016	03-MAY-2016	04-OCT-2016
Analyte	MDL Units	P857791	P895201	P857796	P895206	P857806	P895216
Demeton O	.02 UG/L	ND	ND	ND	ND	ND	ND
Demeton S	.08 UG/L	ND	ND	ND	ND	ND	ND
Diazinon	.04 UG/L	ND	ND	ND	ND	ND	ND
Guthion	.09 UG/L	ND	ND	ND	ND	ND	ND
Malathion	.06 UG/L	ND	ND	ND	ND	ND	ND
Parathion	.07 UG/L	ND	ND	ND	ND	ND	ND
Dichlorvos	.04 UG/L	ND	ND	ND	ND	ND	ND
Disulfoton	.04 UG/L	ND	ND	ND	ND	ND	ND
Stirophos	.05 UG/L	ND	ND	ND	ND	ND	ND
Coumaphos	.07 UG/L	ND	ND	ND	ND	ND	ND
Chlorpyrifos	.04 UG/L	ND	ND	ND	ND	ND	ND
Thiophosphorus Pesticides	.09 UG/L	0.0	0.0	0.0	0.0	0.0	0.0
Demeton -O, -S	.08 UG/L	0.0	0.0	0.0	0.0	0.0	0.0
Total Organophosphorus Pesticides	.12 UG/L	0.0	0.0	0.0	0.0	0.0	0.0

Source:		SEC EFF	SEC EFF	RSL	RSL	RECLAIM	RECLAIM
Date:		03-MAY-2016	04-OCT-2016	03-MAY-2016	04-OCT-2016	03-MAY-2016	04-OCT-2016
Analyte	MDL Units	P857811	P895221	P857823	P895233	P857825	P895235
Demeton O	.02 UG/L	ND	ND	ND	ND	ND	ND
Demeton S	.08 UG/L	ND	ND	ND	ND	ND	ND
Diazinon	.04 UG/L	ND	ND	ND	ND	ND	ND
Guthion	.09 UG/L	ND	ND	ND	ND	ND	ND
Malathion	.06 UG/L	ND	ND	ND	ND	ND	ND
Parathion	.07 UG/L	ND	ND	ND	ND	ND	ND
Dichlorvos	.04 UG/L	ND	ND	ND	ND	ND	ND
Disulfoton	.04 UG/L	ND	ND	ND	ND	ND	ND
Stirophos	.05 UG/L	ND	ND	ND	ND	ND	ND
Coumaphos	.07 UG/L	ND	ND	ND	ND	ND	ND
Chlorpyrifos	.04 UG/L	ND	ND	DNQ0.9	ND	ND	ND
Thiophosphorus Pesticides	.09 UG/L	0.0	0.0	0.0	0.0	0.0	0.0
Demeton -O, -S	.08 UG/L	0.0	0.0	0.0	0.0	0.0	0.0
Total Organophosphorus Pesticides	.12 UG/L	0.0	0.0	0.0	0.0	0.0	0.0

ND=not detected

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

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2016

Source:		SB_INF_02	SB_INF_02	SB_INF_02	SB_INF_02
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831481	P857791	P878460	P895201
Acenaphthene	1.8 UG/L	ND	ND	ND	ND
Acenaphthylene	1.77 UG/L	ND	ND	ND	ND
Anthracene	1.29 UG/L	ND	ND	ND	ND
Benzidine	1.52 UG/L	ND*	ND	ND*	ND*
Benzo[a]anthracene	1.1 UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35 UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49 UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25 UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09 UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4 UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01 UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38 UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16 UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57 UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87 UG/L	ND	ND	ND	ND
Chrysene	1.16 UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01 UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84 UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96 UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96 UG/L	16.3	ND	29.2	34.0
Diethyl phthalate	3.05 UG/L	5.6	3.9	5.2	4.9
Dimethyl phthalate	1.44 UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1 UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44 UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36 UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53 UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37 UG/L	ND	ND	ND	ND
Fluoranthene	1.33 UG/L	ND	ND	ND	ND
Fluorene	1.61 UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48 UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64 UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25 UG/L	ND	ND	ND	ND
Hexachloroethane	1.32 UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14 UG/L	ND	ND	ND	ND
Isophorone	1.53 UG/L	ND*	ND	ND	ND
Naphthalene	1.65 UG/L	ND	ND	ND	ND
Nitrobenzene	1.6 UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27 UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16 UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48 UG/L	ND	ND	ND	ND
Phenanthrene	1.34 UG/L	ND	ND	ND	ND
Pyrene	1.43 UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52 UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77 UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96 UG/L	21.9	3.9	34.4	38.9

Additional analytes determined

Benzo[e]pyrene	1.44 UG/L	ND	ND	ND	ND
Biphenyl	2.29 UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16 UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18 UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46 UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14 UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18 UG/L	ND	ND	ND	ND
Perylene	1.41 UG/L	ND	ND	ND	ND
Pyridine	3.33 UG/L	ND	ND	ND	ND

*= The % recoveries for benzidine and isophorone are outside the low acceptable range in both check and spike samples.
ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2017

Source:		SB_OUTFALL_01 02-FEB-2016	SB_OUTFALL_01 03-MAY-2016	SB_OUTFALL_01 02-AUG-2016	SB_OUTFALL_01 04-OCT-2016
Analyte	MDL Units	P831486	P857796	P878465	P895206
Acenaphthene	1.8 UG/L	ND	ND	ND	ND
Acenaphthylene	1.77 UG/L	ND	ND	ND	ND
Anthracene	1.29 UG/L	ND	ND	ND	ND
Benzidine	1.52 UG/L	ND*	ND	ND*	ND*
Benzo[a]anthracene	1.1 UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35 UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49 UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25 UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09 UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4 UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01 UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38 UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16 UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57 UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87 UG/L	ND	ND	ND	ND
Chrysene	1.16 UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01 UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84 UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96 UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96 UG/L	ND	ND	<9.0	ND
Diethyl phthalate	3.05 UG/L	ND	ND	ND	25.7
Dimethyl phthalate	1.44 UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1 UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44 UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36 UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53 UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37 UG/L	ND	ND	ND	ND
Fluoranthene	1.33 UG/L	ND	ND	ND	ND
Fluorene	1.61 UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48 UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64 UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25 UG/L	ND	ND	ND	ND
Hexachloroethane	1.32 UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14 UG/L	ND	ND	ND	ND
Isophorone	1.53 UG/L	ND*	ND	ND	ND
Naphthalene	1.65 UG/L	ND	ND	ND	ND
Nitrobenzene	1.6 UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27 UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16 UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48 UG/L	ND	ND	ND	ND
Phenanthrene	1.34 UG/L	ND	ND	ND	ND
Pyrene	1.43 UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52 UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77 UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96 UG/L	0.0	0.0	0.0	25.7

Additional analytes determined

Benzo[e]pyrene	1.44 UG/L	ND	ND	ND	ND
Biphenyl	2.29 UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16 UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18 UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46 UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14 UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18 UG/L	ND	ND	ND	ND
Perylene	1.41 UG/L	ND	ND	ND	ND
Pyridine	3.33 UG/L	ND	ND	ND	ND

*= The % recoveries for benzidine and isophorone are outside the low acceptable range in both check and spike samples.
ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2016

Source:		SB_PRIEFF_10	SB_PRIEFF_10	SB_PRIEFF_10	SB_PRIEFF_10
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831496	P857806	P878475	P895216
Acenaphthene	1.8 UG/L	ND	ND	ND	ND
Acenaphthylene	1.77 UG/L	ND	ND	ND	ND
Anthracene	1.29 UG/L	ND	ND	ND	ND
Benzidine	1.52 UG/L	ND*	ND	ND*	ND*
Benzo[a]anthracene	1.1 UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35 UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49 UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25 UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09 UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4 UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01 UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38 UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16 UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57 UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87 UG/L	ND	ND	ND	ND
Chrysene	1.16 UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01 UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84 UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96 UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96 UG/L	13.7	ND	10.5	17.6
Diethyl phthalate	3.05 UG/L	9.2	ND	ND	3.4
Dimethyl phthalate	1.44 UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1 UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44 UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36 UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53 UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37 UG/L	ND	ND	ND	ND
Fluoranthene	1.33 UG/L	ND	ND	ND	ND
Fluorene	1.61 UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48 UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64 UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25 UG/L	ND	ND	ND	ND
Hexachloroethane	1.32 UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14 UG/L	ND	ND	ND	ND
Isophorone	1.53 UG/L	ND*	ND	ND	ND
Naphthalene	1.65 UG/L	ND	ND	ND	ND
Nitrobenzene	1.6 UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27 UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16 UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48 UG/L	ND	ND	ND	ND
Phenanthrene	1.34 UG/L	ND	ND	ND	ND
Pyrene	1.43 UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52 UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77 UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96 UG/L	22.9	0.0	10.5	21.0

Additional analytes determined

Benzo[e]pyrene	1.44 UG/L	ND	ND	ND	ND
Biphenyl	2.29 UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16 UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18 UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46 UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14 UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18 UG/L	ND	ND	ND	ND
Perylene	1.41 UG/L	ND	ND	ND	ND
Pyridine	3.33 UG/L	ND	ND	ND	ND

*= The % recoveries for benzidine and isophorone are outside the low acceptable range in both check and spike samples.
ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2016

Source:		SB_SEC_EFF_20	SB_SEC_EFF_20	SB_SEC_EFF_20	SB_SEC_EFF_20
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831501	P857811	P878480	P895221
Acenaphthene	1.8 UG/L	ND	ND	ND	ND
Acenaphthylene	1.77 UG/L	ND	ND	ND	ND
Anthracene	1.29 UG/L	ND	ND	ND	ND
Benzidine	1.52 UG/L	ND*	ND	ND*	ND*
Benzo[a]anthracene	1.1 UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35 UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49 UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25 UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09 UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4 UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01 UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38 UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16 UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57 UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87 UG/L	ND	ND	ND	ND
Chrysene	1.16 UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01 UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84 UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96 UG/L	ND	ND	6.2	ND
Bis-(2-ethylhexyl) phthalate	8.96 UG/L	14.1	ND	ND	ND
Diethyl phthalate	3.05 UG/L	ND	ND	16.1	ND
Dimethyl phthalate	1.44 UG/L	ND	ND	DNQ1.5	ND
Di-n-octyl phthalate	1 UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44 UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36 UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53 UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37 UG/L	ND	ND	ND	ND
Fluoranthene	1.33 UG/L	ND	ND	ND	ND
Fluorene	1.61 UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48 UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64 UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25 UG/L	ND	ND	ND	ND
Hexachloroethane	1.32 UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14 UG/L	ND	ND	ND	ND
Isophorone	1.53 UG/L	ND*	ND	ND	ND
Naphthalene	1.65 UG/L	ND	ND	ND	ND
Nitrobenzene	1.6 UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27 UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16 UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48 UG/L	ND	ND	ND	ND
Phenanthrene	1.34 UG/L	ND	ND	ND	ND
Pyrene	1.43 UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52 UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77 UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96 UG/L	14.1	0.0	22.3	0.0

Additional analytes determined

Benzo[e]pyrene	1.44 UG/L	ND	ND	ND	ND
Biphenyl	2.29 UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16 UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18 UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46 UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14 UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18 UG/L	ND	ND	ND	ND
Perylene	1.41 UG/L	ND	ND	ND	ND
Pyridine	3.33 UG/L	ND	ND	ND	ND

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

*= The % recoveries for benzidine and isophorone are outside the low acceptable range in both check and spike samples.

ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Base/Neutral Compounds, EPA Method 625

Annual 2016

Source:		SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831517	P857825	P878496	P895235
Acenaphthene	1.8 UG/L	ND	ND	ND	ND
Acenaphthylene	1.77 UG/L	ND	ND	ND	ND
Anthracene	1.29 UG/L	ND	ND	ND	ND
Benzidine	1.52 UG/L	ND*	ND	ND*	ND*
Benzo[a]anthracene	1.1 UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene	1.35 UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene	1.49 UG/L	ND	ND	ND	ND
Benzo[a]pyrene	1.25 UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene	1.09 UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether	1.4 UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane	1.01 UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether	1.38 UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether	1.16 UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	1.57 UG/L	ND	ND	ND	ND
2-Chloronaphthalene	1.87 UG/L	ND	ND	ND	ND
Chrysene	1.16 UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene	1.01 UG/L	ND	ND	ND	ND
Butyl benzyl phthalate	2.84 UG/L	ND	ND	ND	ND
Di-n-butyl phthalate	3.96 UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate	8.96 UG/L	ND	ND	ND	ND
Diethyl phthalate	3.05 UG/L	ND	ND	ND	5.4
Dimethyl phthalate	1.44 UG/L	ND	ND	ND	ND
Di-n-octyl phthalate	1 UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine	2.44 UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene	1.36 UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene	1.53 UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine	1.37 UG/L	ND	ND	ND	ND
Fluoranthene	1.33 UG/L	ND	ND	ND	ND
Fluorene	1.61 UG/L	ND	ND	ND	ND
Hexachlorobenzene	1.48 UG/L	ND	ND	ND	ND
Hexachlorobutadiene	1.64 UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene	1.25 UG/L	ND	ND	ND	ND
Hexachloroethane	1.32 UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene	1.14 UG/L	ND	ND	ND	ND
Isophorone	1.53 UG/L	ND*	ND	ND	ND
Naphthalene	1.65 UG/L	ND	ND	ND	ND
Nitrobenzene	1.6 UG/L	ND	ND	ND	ND
N-nitrosodimethylamine	1.27 UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine	1.16 UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine	3.48 UG/L	ND	ND	ND	ND
Phenanthrene	1.34 UG/L	ND	ND	ND	ND
Pyrene	1.43 UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.52 UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons	1.77 UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds	8.96 UG/L	0.0	0.0	0.0	5.4

Additional analytes determined

Benzo[e]pyrene	1.44 UG/L	ND	ND	ND	ND
Biphenyl	2.29 UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene	2.16 UG/L	ND	ND	ND	ND
1-Methylnaphthalene	2.18 UG/L	ND	ND	ND	ND
1-Methylphenanthrene	1.46 UG/L	ND	ND	ND	ND
2-Methylnaphthalene	2.14 UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene	2.18 UG/L	ND	ND	ND	ND
Perylene	1.41 UG/L	ND	ND	ND	ND
Pyridine	3.33 UG/L	ND	ND	ND	ND

*= The % recoveries for benzidine and isophorone are outside the low acceptable range in both check and spike samples.
ND= not detected

SOUTH BAY WATER RECLAMATION PLANT
ACID EXTRACTABLE COMPOUNDS, EPA Method 625

Annual 2016

Source: Date: Analyte	MDL	Units	INFLUENT	INFLUENT	INFLUENT	INFLUENT
			02-FEB-2016 P831481	03-MAY-2016 P857791	02-AUG-2016 P878460	04-OCT-2016 P895201
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	30.4	40.5	53.8	54.4
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	30.4	40.5	53.8	54.4
Total Phenols	2.16	UG/L	30.4	40.5	53.8	54.4

Additional analytes determined

Source: Date: Analyte	MDL	Units	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT
			02-FEB-2016 P831486	17-MAY-2016 P862630	02-AUG-2016 P878465	04-OCT-2016 P895206
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0

Additional analytes determined

Source: Date: Analyte	MDL	Units	EFFLUENT	EFFLUENT	EFFLUENT	EFFLUENT
			02-FEB-2016 P831486	17-MAY-2016 P862630	02-AUG-2016 P878465	04-OCT-2016 P895206
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0

ND= not detected

NA= not analyzed

SOUTH BAY WATER RECLAMATION PLANT
ACID EXTRACTABLE COMPOUNDS, EPA Method 625

Annual 2016

Source:		PRI EFF	PRI EFF	PRI EFF	PRI EFF
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831496	P857806	P878475	P895216
2-Chlorophenol	1.32 UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01 UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67 UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65 UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12 UG/L	ND	ND	ND	ND
Phenol	1.76 UG/L	19.8	13.1	11.0	18.3
2-Nitrophenol	1.55 UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01 UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16 UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14 UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52 UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67 UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16 UG/L	19.8	13.1	11.0	18.3
Total Phenols	2.16 UG/L	19.8	13.1	11.0	18.3

Additional analytes determined

		SEC EFF	SEC EFF	SEC EFF	SEC EFF
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831501	P857811	P878480	P895221
2-Methylphenol	2.15 UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)	UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11 UG/L	48.4	28.3	16.3	30.8
2,4,5-Trichlorophenol	1.66 UG/L	ND	ND	ND	ND

		SEC EFF	SEC EFF	SEC EFF	SEC EFF
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831501	P857811	P878480	P895221
2-Chlorophenol	1.32 UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01 UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67 UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65 UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12 UG/L	ND	ND	ND	ND
Phenol	1.76 UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55 UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01 UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16 UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14 UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52 UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67 UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16 UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16 UG/L	0.0	0.0	0.0	0.0

Additional analytes determined

		SEC EFF	SEC EFF	SEC EFF	SEC EFF
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831501	P857811	P878480	P895221
2-Methylphenol	2.15 UG/L	ND	ND	ND	ND
3-Methylphenol(4-MP is unresolved)	UG/L	NA	NA	NA	NA
4-Methylphenol(3-MP is unresolved)	2.11 UG/L	ND	ND	ND	ND
2,4,5-Trichlorophenol	1.66 UG/L	ND	ND	ND	ND

ND= not detected

NA= not analyzed

SOUTH BAY WATER RECLAMATION PLANT
ACID EXTRACTABLE COMPOUNDS, EPA Method 625

Annual 2016

Source:		RSL	RSL	RSL	RSL	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	
Analyte	MDL	Units	P831515	P857823	P878494	P895233
2-Chlorophenol	1.32	UG/L	ND	DNQ11.8	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	DNQ14.6	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	71.7	340	101	80.6
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	71.7	340	101	80.6
Total Phenols	2.16	UG/L	71.7	340	101	80.6

Additional analytes determined

Source:		REC WATER	REC WATER	REC WATER	REC WATER	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	
Analyte	MDL	Units	P831517	P857825	P878496	P895235
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0

Additional analytes determined

Source:		REC WATER	REC WATER	REC WATER	REC WATER	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	
Analyte	MDL	Units	P831517	P857825	P878496	P895235
2-Chlorophenol	1.32	UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01	UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67	UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65	UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12	UG/L	ND	ND	ND	ND
Phenol	1.76	UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55	UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01	UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16	UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14	UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52	UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67	UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16	UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16	UG/L	0.0	0.0	0.0	0.0

ND= not detected

NA= not analyzed

DNQ= Detected not quantifiable, result value less than minimum level (ML) but greater or equal MDL.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2016

Source:		SB_INF_02	SB_INF_02	SB_INF_02	SB_INF_02	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016^	
Analyte	MDL	Units	P831206	P857794	P878463	P895204
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Acrolein	1.3	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	ND	ND	ND	ND
Bromoform	.5	UG/L	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	DNQ0.53*	DNQ0.6	
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ1.3	2.3	2.4	2.7
Chloromethane	.5	UG/L	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	DNQ0.4	DNQ1.3	ND	DNQ0.7
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.5	DNQ0.9	DNQ0.9	DNQ1.0
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	DNQ1.0	DNQ0.9	DNQ0.5	DNQ0.8
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.7	UG/L	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.6
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.5	UG/L	0.0	2.3	2.4	2.7
Purgeable Compounds	2.39	UG/L	0.0	2.3	2.4	2.7

Additional Analytes Determined

Acetone	6.74	UG/L	143	189	135	361
Allyl chloride	.6	UG/L	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	6.3	UG/L	DNQ6.6	DNQ6.5	ND	DNQ7.3
Carbon disulfide	.6	UG/L	4.0	6.8	3.8	5.7
Chloroprene	.4	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.6	UG/L	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	DNQ0.6	ND	ND	DNQ0.5
2-Nitropropane	12	UG/L	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; result not used in average calculations.

ND= not detected

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

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2016

Source:		SB_OUTFALL_01	SB_OUTFALL_01	SB_OUTFALL_01	SB_OUTFALL_01	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016^	
Analyte	MDL	Units	P831211	P857799	P878468	P895209
<hr/>						
Acrolein	1.3	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	ND	11.2	ND	ND
Bromoform	.5	UG/L	ND	DNQ0.5	ND	ND
Bromomethane	.7	UG/L	ND	ND	DNQ0.57*	DNQ0.7
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ0.7	13.5	DNQ0.3	DNQ1.6
Chloromethane	.5	UG/L	ND	DNQ0.8	ND	ND
Dibromochloromethane	.6	UG/L	ND	5.2	ND	ND
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	DNQ0.9	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	ND	DNQ0.7	DNQ0.38*	DNQ0.6
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	ND	ND	ND	ND
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.7	UG/L	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
<hr/>						
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.0
<hr/>						
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
<hr/>						
Total Chloromethanes	.5	UG/L	0.0	13.5	0.0	0.0
<hr/>						
Purgeable Compounds	2.39	UG/L	0.0	29.9	0.0	0.0

Additional Analytes Determined

Acetone	6.74	UG/L	ND	ND	ND	ND
Allyl chloride	.6	UG/L	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	6.3	UG/L	ND	ND	ND	ND
Carbon disulfide	.6	UG/L	ND	ND	ND	ND
Chloroprene	.4	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.6	UG/L	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	ND	ND	ND
2-Nitropropane	12	UG/L	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Method blank value above the MDL; result not used in average calculations.

ND= not detected

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

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2016

Source:		SB_PRIEFF_10	SB_PRIEFF_10	SB_PRIEFF_10	SB_PRIEFF_10	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016^	
Analyte	MDL	Units	P831221	P857809	P878478	P895219
<hr/>						
Acrolein	1.3	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	ND	ND	ND	ND
Bromoform	.5	UG/L	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	DNQ0.59*	DNQ0.7	DNQ0.7
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ0.6	DNQ0.9	DNQ0.7	DNQ0.8
Chloromethane	.5	UG/L	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	DNQ1.3	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ0.4	NQ0.48*	DNQ0.8	DNQ0.6
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	ND	DNQ0.5	ND	DNQ0.5
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.7	UG/L	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.5	UG/L	0.0	0.0	0.0	0.0
Purgeable Compounds	2.39	UG/L	0.0	0.0	0.0	0.0

Additional Analytes Determined

Acetone	6.74	UG/L	199	159	238	261
Allyl chloride	.6	UG/L	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	6.3	UG/L	ND	ND	ND	DNQ7.5
Carbon disulfide	.6	UG/L	1.5	1.5	2.6	3.3
Chloroprene	.4	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.6	UG/L	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	DNQ0.5	ND	DNQ0.6
2-Nitropropane	12	UG/L	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Blank did not meet QC criteria for this analyte due to contamination, result above the MDL. Result is not used in computations.

ND= not detected

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

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2016

Source:		SB_SEC_EFF_20	SB_SEC_EFF_20	SB_SEC_EFF_20	SB_SEC_EFF_20	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016^	
Analyte	MDL	Units	P831226	P857814	P878483	P895224
<hr/>						
Acrolein	1.3	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	ND	DNQ0.7	ND	DNQ0.4
Bromoform	.5	UG/L	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	ND	DNQ0.6*	DNQ0.7
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	DNQ0.5	DNQ1.3	ND	DNQ1.1
Chloromethane	.5	UG/L	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	DNQ1.0	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	ND	ND*	DNQ0.4	ND
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	ND	ND	ND	ND
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.7	UG/L	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
<hr/>						
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.0
<hr/>						
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
<hr/>						
Total Chloromethanes	.5	UG/L	0.0	0.0	0.0	0.0
<hr/>						
Purgeable Compounds	2.39	UG/L	0.0	0.0	0.0	0.0

Additional analytes determined

Acetone	6.74	UG/L	ND	ND	ND	ND
Allyl chloride	.6	UG/L	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	6.3	UG/L	ND	ND	ND	ND
Carbon disulfide	.6	UG/L	ND	ND	ND	ND
Chloroprene	.4	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.6	UG/L	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	ND	ND	ND
2-Nitropropane	12	UG/L	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Blank did not meet QC criteria for this analyte due to contamination, result above the MDL. Result is not used in computations.

ND= not detected

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

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2016

Source:		SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016^	
Analyte	MDL	Units	P831242	P857828	P878499	P895238
<hr/>						
Acrolein	1.3	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	19.1	35.2	DNQ0.8	48.7
Bromoform	.5	UG/L	2.3	DNQ1.7	ND	4.0
Bromomethane	.7	UG/L	ND	ND	NQ0.54*	DNQ1.1
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	DNQ0.5
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	15.2	37.7	3.2	43.1
Chloromethane	.5	UG/L	DNQ0.8	2.3	DNQ0.3	3.0
Dibromochloromethane	.6	UG/L	12.9	15.8	ND	28.9
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	0.91*	ND	ND
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	ND	DNQ1.5	DNQ0.5*	DNQ1.1
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	ND	ND	ND	ND
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.7	UG/L	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
<hr/>						
Halomethane Purgeable Cmpnds	.7	UG/L	2.3	2.3	0.0	7.0
<hr/>						
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
<hr/>						
Total Chloromethanes	.5	UG/L	15.2	40.0	3.2	46.1
<hr/>						
Purgeable Compounds	2.39	UG/L	49.5	91.0	3.2	127.7

Additional analytes determined

Acetone	6.74	UG/L	ND	DNQ7.5	ND	DNQ7.5
Allyl chloride	.6	UG/L	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	6.3	UG/L	ND	ND	ND	ND
Carbon disulfide	.6	UG/L	ND	ND	ND	ND
Chloroprene	.4	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.6	UG/L	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	ND	1.7
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	ND	ND	ND
2-Nitropropane	12	UG/L	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND	ND

*= Blank did not meet QC criteria for this analyte due to contamination, result above the MDL. Result is not used in computations.

ND= not detected

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

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

SOUTH BAY WATER RECLAMATION PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

Annual 2016

Source:		SB_RSL_10_B	SB_RSL_10_B	SB_RSL_10_B	SB_RSL_10_B	
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016^	
Analyte	MDL	Units	P831515	P857823	P878494	P895233
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Acrolein	1.3	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	ND	ND	ND	ND
Bromoform	.5	UG/L	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Chloroethane	.9	UG/L	ND	ND	ND	ND
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	2.6	3.6	DNQ1.9	2.2
Chloromethane	.5	UG/L	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	ND	ND	ND	ND
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	DNQ1.1	3.3*	DNQ0.5	DNQ0.6
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	DNQ1.3	DNQ1.7	DNQ1.2	DNQ1.7
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	DNQ1.3	2.4	2.6	DNQ1.5
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.7	UG/L	ND	ND	ND	ND
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.7	UG/L	0.0	0.0	0.0	0.0
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.5	UG/L	2.6	3.6	0.0	2.2
Purgeable Compounds	2.39	UG/L	2.6	6.0	2.6	2.2

Additional analytes determined

Acetone	6.74	UG/L	65.0	105	79.4	378
Allyl chloride	.6	UG/L	ND	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND	ND
2-Butanone	6.3	UG/L	ND	DNQ7.5	ND	10.1
Carbon disulfide	.6	UG/L	2.3	7.1	6.5	11.2
Chloroprene	.4	UG/L	ND	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND	ND
Methyl Iodide	.6	UG/L	ND	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	ND	ND
meta,para xylenes	.85	UG/L	ND	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	ND	ND	DNQ0.4
2-Nitropropane	12	UG/L	ND	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND	ND
Styrene	.38	UG/L	1.2	1.4	1.9	ND

*= Blank did not meet QC criteria for this analyte due to contamination, result above the MDL. Result is not used in computations.

ND= not detected

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

^= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

SOUTH BAY WATER RECLAMATION PLANT
Tributyl Tin Analysis

Annual 2016

Source:	INFLUENT	INFLUENT	INFLUENT	INFLUENT*	EFFLUENT	EFFLUENT	EFFLUENT
Sample ID:	P831481	P857791	P878460	P895201	P831486	P857796	P878465

Analyte	MDL	Units	02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016	02-AUG-2016
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====	====	====	====	====	====	====	====	====	====
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Dibutyltin	7	UG/L	ND						
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Monobutyltin	16	UG/L	ND	ND	ND	NA	ND	ND	ND
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Tributyltin	2	UG/L	ND						
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Source:	EFFLUENT*	PRI EFF	PRI EFF	PRI EFF	PRI EFF*	SEC EFF	SEC EFF
SampleID	P895206	P831496	P857806	P878475	P895216	P831501	P857811

Analyte	MDL	Units	04-OCT-2016	02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016
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Dibutyltin	7	UG/L	ND						
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Monobutyltin	16	UG/L	NA	ND	ND	NA	ND	ND	ND
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Tributyltin	2	UG/L	ND						
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Source:	SEC EFF	SEC EFF*	REC WATER	REC WATER	REC WATER	REC WATER*
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Sample ID:	P878480	P895221	P831517	P857825	P878496	P895235
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Analyte	MDL	Units	02-AUG-2016	04-OCT-2016	02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
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====	====	====	====	====	====	====	====	====
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Dibutyltin	7	UG/L	ND	ND	ND	ND	ND	ND
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Monobutyltin	16	UG/L	ND	NA	ND	ND	ND	NA
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Tributyltin	2	UG/L	ND	ND	ND	ND	ND	ND
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ND=not detected

NA=not analyzed

*= these samples were analyzed using a Shimadzu GC 2010 Plus; therefore new method detection limits were established:

Dibutyltin= 0.0052 ug/L

Tributyltin= 0.012 ug/L

SOUTH BAY WATER RECLAMATION PLANT
Dioxin and Furan Analysis

Annual 2016

Source:	Date:	Analytes	MDL	Units	Equiv.	INFLUENT	INFLUENT	EFFLUENT	EFFLUENT
						TCDD	02-FEB-2016	P831481	02-FEB-2016
		2,3,7,8-tetra CDD	.177	PG/L	1.000	ND	ND	ND	ND
		1,2,3,7,8-penta CDD	.366	PG/L	0.500	ND	ND	ND	ND
		1,2,3,4,7,8_hexa_CDD	.35	PG/L	0.100	ND	ND	ND	ND
		1,2,3,6,7,8-hexa CDD	.38	PG/L	0.100	ND	ND	ND	ND
		1,2,3,7,8,9-hexa CDD	.332	PG/L	0.100	ND	ND	ND	ND
		1,2,3,4,6,7,8-hepta CDD	.407	PG/L	0.010	DNQ13.7	DNQ0.137	ND	ND
		octa CDD	.712	PG/L	0.001	150	0.15	DNQ5.03	DNQ0.005
		2,3,7,8-tetra CDF	.195	PG/L	0.100	ND	ND	ND	ND
		1,2,3,7,8-penta CDF	.32	PG/L	0.050	ND	ND	ND	ND
		2,3,4,7,8-penta CDF	.313	PG/L	0.050	ND	ND	ND	ND
		1,2,3,4,7,8-hexa CDF	.28	PG/L	0.100	ND	ND	ND	ND
		1,2,3,6,7,8-hexa CDF	.311	PG/L	0.100	ND	ND	ND	ND
		1,2,3,7,8,9-hexa CDF	.303	PG/L	0.100	ND	ND	ND	ND
		2,3,4,6,7,8-hexa CDF	.376	PG/L	0.100	ND	ND	ND	ND
		1,2,3,4,6,7,8-hepta CDF	.326	PG/L	0.010	DNQ4.26	DNQ0.043	ND	ND
		1,2,3,4,7,8,9-hepta CDF	.474	PG/L	0.010	ND	ND	ND	ND
		octa CDF	.656	PG/L	0.001	DNQ9.68	DNQ0.01	ND	ND

Source:	Date:	Analytes	MDL	Units	Equiv.	INFLUENT	INFLUENT	EFFLUENT	EFFLUENT
						TCDD	03-MAY-2016	P857791	03-MAY-2016
		2,3,7,8-tetra CDD	.177	PG/L	1.000	ND	ND	ND	ND
		1,2,3,7,8-penta CDD	.366	PG/L	0.500	ND	ND	ND	ND
		1,2,3,4,7,8_hexa_CDD	.35	PG/L	0.100	ND	ND	ND	ND
		1,2,3,6,7,8-hexa CDD	.38	PG/L	0.100	ND	ND	ND	ND
		1,2,3,7,8,9-hexa CDD	.332	PG/L	0.100	ND	ND	ND	ND
		1,2,3,4,6,7,8-hepta CDD	.407	PG/L	0.010	DNQ16.6	DNQ0.166	ND	ND
		octa CDD	.712	PG/L	0.001	160	0.16	ND	ND
		2,3,7,8-tetra CDF	.195	PG/L	0.100	ND	ND	ND	ND
		1,2,3,7,8-penta CDF	.32	PG/L	0.050	ND	ND	ND	ND
		2,3,4,7,8-penta CDF	.313	PG/L	0.050	ND	ND	ND	ND
		1,2,3,4,7,8-hexa CDF	.28	PG/L	0.100	ND	ND	ND	ND
		1,2,3,6,7,8-hexa CDF	.311	PG/L	0.100	ND	ND	ND	ND
		1,2,3,7,8,9-hexa CDF	.303	PG/L	0.100	ND	ND	ND	ND
		2,3,4,6,7,8-hexa CDF	.376	PG/L	0.100	ND	ND	ND	ND
		1,2,3,4,6,7,8-hepta CDF	.326	PG/L	0.010	ND	ND	ND	ND
		1,2,3,4,7,8,9-hepta CDF	.474	PG/L	0.010	ND	ND	ND	ND
		octa CDF	.656	PG/L	0.001	ND	ND	ND	ND

ND= not detected

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

Above are permit required CDD/CDF isomers.

SOUTH BAY WATER RECLAMATION PLANT
Dioxin and Furan Analysis

Annual 2016

Source:	Analytes	MDL	Units	Equiv.	INFLUENT	INFLUENT	EFFLUENT	EFFLUENT	
					TCDD	02-AUG-2016	P878460	02-AUG-2016	P878465
	2,3,7,8-tetra CDD	.177	PG/L	1.000	ND	ND	ND	ND	ND
	1,2,3,7,8-penta CDD	.366	PG/L	0.500	ND	ND	ND	ND	ND
	1,2,3,4,7,8_hexa_CDD	.35	PG/L	0.100	ND	ND	ND	ND	ND
	1,2,3,6,7,8-hexa CDD	.38	PG/L	0.100	DNQ7.11	DNQ0.711	ND	ND	ND
	1,2,3,7,8,9-hexa CDD	.332	PG/L	0.100	ND	ND	ND	ND	ND
	1,2,3,4,6,7,8-hepta CDD	.407	PG/L	0.010	42.7	0.427	ND	ND	ND
	octa CDD	.712	PG/L	0.001	170	0.17	DNQ5.46	DNQ0.005	
	2,3,7,8-tetra CDF	.195	PG/L	0.100	DNQ3.08	DNQ0.308	ND	ND	
	1,2,3,7,8-penta CDF	.32	PG/L	0.050	ND	ND	ND	ND	
	2,3,4,7,8-penta CDF	.313	PG/L	0.050	ND	ND	ND	ND	
	1,2,3,4,7,8-hexa CDF	.28	PG/L	0.100	ND	ND	ND	ND	
	1,2,3,6,7,8-hexa CDF	.311	PG/L	0.100	DNQ2.87	DNQ0.287	ND	ND	
	1,2,3,7,8,9-hexa CDF	.303	PG/L	0.100	ND	ND	ND	ND	
	2,3,4,6,7,8-hexa CDF	.376	PG/L	0.100	ND	ND	ND	ND	
	1,2,3,4,6,7,8-hepta CDF	.326	PG/L	0.010	DNQ3.85	DNQ0.039	ND	ND	
	1,2,3,4,7,8,9-hepta CDF	.474	PG/L	0.010	ND	ND	ND	ND	
	octa CDF	.656	PG/L	0.001	DNQ8.06	DNQ0.008	ND	ND	

Source:	Analytes	MDL	Units	Equiv.	INFLUENT	INFLUENT	EFFLUENT	EFFLUENT	
					TCDD	04-OCT-2016	P895201	04-OCT-2016	P895206
	2,3,7,8-tetra CDD	.177	PG/L	1.000	ND	ND	ND	ND	ND
	1,2,3,7,8-penta CDD	.366	PG/L	0.500	ND	ND	ND	ND	ND
	1,2,3,4,7,8_hexa_CDD	.35	PG/L	0.100	DNQ8.18	DNQ0.818	ND	ND	ND
	1,2,3,6,7,8-hexa CDD	.38	PG/L	0.100	48.7	4.87	ND	ND	ND
	1,2,3,7,8,9-hexa CDD	.332	PG/L	0.100	DNQ13.8	DNQ1.38	ND	ND	ND
	1,2,3,4,6,7,8-hepta CDD	.407	PG/L	0.010	282	2.82	DNQ1.92	DNQ0.019	
	octa CDD	.712	PG/L	0.001	240	0.24	DNQ7.09	DNQ0.007	
	2,3,7,8-tetra CDF	.195	PG/L	0.100	DNQ1.82	DNQ0.182	ND	ND	
	1,2,3,7,8-penta CDF	.32	PG/L	0.050	DNQ5.08	DNQ0.254	ND	ND	
	2,3,4,7,8-penta CDF	.313	PG/L	0.050	DNQ0.948	DNQ0.474	ND	ND	
	1,2,3,4,7,8-hexa CDF	.028	PG/L	0.100	DNQ1.52	DNQ0.152	ND	ND	
	1,2,3,6,7,8-hexa CDF	.311	PG/L	0.100	DNQ1.99	DNQ0.199	ND	ND	
	1,2,3,7,8,9-hexa CDF	.303	PG/L	0.100	DNQ2.36	DNQ0.236	ND	ND	
	2,3,4,6,7,8-hexa CDF	.376	PG/L	0.100	ND	ND	ND	ND	
	1,2,3,4,6,7,8-hepta CDF	.326	PG/L	0.010	DNQ6.13	DNQ0.061	ND	ND	
	1,2,3,4,7,8,9-hepta CDF	.474	PG/L	0.010	DNQ1.59	DNQ0.016	ND	ND	
	octa CDF	.656	PG/L	0.001	DNQ9.37	DNQ0.009	ND	ND	

ND= not detected

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

Above are permit required CDD/CDF isomers.

VII. Reclaimed Water Data Summary.

The results of all analyses performed on Reclaimed water are summarized in tables with monthly and annual averages (and in some cases annual totals) calculated. Graphs of monthly averages are presented.

- A. Reclaimed Water Data Summaries
- B. Reclaimed Water Graphs
- C. Daily Values of Selected Parameters
- D. Total Coliforms Data Summaries
- E. UV Performance Report

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A. Reclaimed Water Data Summaries

The results of all analyses performed on the SBWRP Reclaimed are summarized in tables with monthly and annual averages (and in some cases annual totals) calculated.

South Bay Water Reclamation Plant
Annual Recycled Water Turbidity Report - 2016
Data from in-plant meter

Month	1651 FLE AVG TURBIDITY NTU	1657 FLE MIN TURBIDITY NTU	1654 FLE MAX TURBIDITY NTU	1687 PCT. ABOVE 5 NTU (DURING RW DEL.) pct
Jan 2016	0.66	0.55	0.85	0.00
Feb 2016	0.76	0.71	0.93	0.00
Mar 2016	0.91	0.85	1.38	0.00
Apr 2016	0.98	0.90	1.31	0.00
May 2016	0.90	0.81	1.41	0.00
Jun 2016	0.74	0.71	1.10	0.00
Jul 2016	0.65	0.60	1.56	0.00
Aug 2016	0.88	0.80	1.63	0.00
Sep 2016	1.04	1.00	1.40	0.00
Oct 2016	1.04	0.96	1.32	0.00
Nov 2016	0.83	0.73	1.41	0.00
Dec 2016	0.77	0.71	1.03	0.00
Average	0.85	0.78	1.28	0.00

1657- Minimum Daily value is the average recorded value for the month.

1654- Maximum Daily value is the average recorded value for the month.

1687- Total Time for the month

Compliance monitoring point,values taken from DCS Point(S29A10203),located at the UV Vault in Area 29 (Tertiary UV Disinfection System)

SOUTH BAY WATER RECLAMATION PLANT

ANNUAL 2016

Reclaim Water
(SB_REC_WATER_34)

Analyte:	Flow	pH	Biochemical Oxygen Demand	Total Suspended Solids	Volatile Suspended Solids	Total Dissolved Solids	Turbidity*
Units:	(mgd)		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(NTU)
JANUARY -2016	0.19	7.21	4	<2.5	ND	986	NR
FEBRUARY -2016	2.24	7.28	5	<4.2	<4.2	982	1.10
MARCH -2016	2.01	7.37	6	<2.5	<2.5	1000	NR
APRIL -2016	2.40	7.25	10	<2.5	<2.5	1010	NR
MAY -2016	2.96	7.27	4	<2.5	<2.5	1020	0.99
JUNE -2016	4.06	7.26	2	<2.5	<2.5	999	NR
JULY -2016	5.00	7.23	3	<2.5	<2.5	1040	NR
AUGUST -2016	4.91	7.38	3	<2.5	<2.5	981	2.07
SEPTEMBER-2016	3.84	7.26	3	<2.5	<2.5	959	NR
OCTOBER -2016	4.68	7.28	<2	ND	ND	1010	0.89
NOVEMBER -2016	3.18	7.25	<2	ND	ND	993	NR
DECEMBER -2016	1.12	7.24	<2	ND	ND	1070	NR
Average	3.05	7.27	3	0.0	0.0	1004	1.26

*= Not for compliance monitoring

ND=not detected; NR=not required

SOUTH BAY WATER RECLAMATION PLANT
SB_REC_WATER_34 Reclaimed Water- Annual Averages

ANNUAL 2016

Source:	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron
MDL:	23.8	2.44	.824	.7	.072	5.32
Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
JANUARY -2016	ND	4.0	NR	70.6	ND	342
FEBRUARY -2016	ND	<2.4	0.4	56.3	ND	394
MARCH -2016	24	ND	NR	62.3	ND	367
APRIL -2016	ND	ND	NR	81.8	ND	337
MAY -2016	ND	ND	0.5	85.4	ND	353
JUNE -2016	ND	ND	NR	86.2	ND	371
JULY -2016	ND	ND	2.4	86.4	ND	462
AUGUST -2016	38	ND	1.3	32.1	ND	345
SEPTEMBER-2016	ND	ND	0.7	64.8	ND	311
OCTOBER -2016	ND	ND	0.8	48.8	ND	329
NOVEMBER -2016	ND	3.4	0.9	83.9	ND	316
DECEMBER -2016	ND	ND	ND	82.1	ND	381
Annual Average:	5	0.6	0.9	70.1	ND	359

Source:	Cadmium	Chromium	Copper	Iron	Manganese	Mercury
MDL:	.26	.54	2.16	15.6	.78	.005
Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
JANUARY -2016	0.40	2.10	19.0	36	10.1	NR
FEBRUARY -2016	ND	2.36	7.8	46	24.9	0.005
MARCH -2016	ND	0.69	3.8	53	42.7	NR
APRIL -2016	ND	2.29	7.5	34	18.6	NR
MAY -2016	ND	1.65	6.7	41	20.9	ND
JUNE -2016	ND	1.85	7.1	35	22.9	NR
JULY -2016	ND	1.32	12.9	48	20.0	NR
AUGUST -2016	ND	2.29	11.9	126	58.2	ND
SEPTEMBER-2016	ND	1.00	15.0	56	26.2	NR
OCTOBER -2016	ND	1.31	3.3	90	30.1	ND
NOVEMBER -2016	ND	1.14	14.3	46	17.8	NR
DECEMBER -2016	ND	0.82	12.8	59	5.5	NR
Annual Average:	0.03	1.57	10.2	56	24.8	0.001

Source:	Nickel	Selenium	Thallium	Chloride	Fluoride	Sulfate
MDL:	.53	.216	3.12	7	.05	9
Units:	UG/L	UG/L	UG/L	MG/L	MG/L	MG/L
JANUARY -2016	4.00	NR	ND	244	0.43	207
FEBRUARY -2016	3.65	0.37	ND	250	0.47	168
MARCH -2016	8.21	NR	ND	254	0.45	192
APRIL -2016	4.15	NR	ND	236	0.44	243
MAY -2016	6.14	0.85	ND	244	0.48	220
JUNE -2016	4.71	NR	ND	229	0.51	214
JULY -2016	3.65	2.12	ND	248	0.44	217
AUGUST -2016	4.82	0.59	ND	228	0.41	205
SEPTEMBER-2016	3.49	0.42	ND	217	0.41	207
OCTOBER -2016	3.72	0.45	ND	231	0.43	224
NOVEMBER -2016	3.18	0.71	ND	234	0.46	236
DECEMBER -2016	2.73	0.38	ND	240	0.41	246
Annual Average:	4.37	0.74	ND	238	0.45	215

ND= Not Detected; Not Required

SOUTH BAY WATER RECLAMATION PLANT
SB_REC_WATER_34 Reclaimed Water- Annual Averages

ANNUAL 2016

Source:	Total	MBAS	Percent	Sodium	Calcium	Magnesium	Potassium
	Cyanides	(surfactants)			MG/L	MG/L	MG/L
MDL:	.002	.03			.134	.132	.84
Units:	MG/L	MG/L	Calculated %		MG/L	MG/L	MG/L
JANUARY -2016	NR	0.10	56.6	79.6	31.6	19.0	
FEBRUARY -2016	0.002	0.14	58.8	65.0	28.5	17.6	
MARCH -2016	NR	0.12	58.7	71.1	32.4	19.1	
APRIL -2016	NR	0.12	56.5	78.1	28.0	18.5	
MAY -2016	0.004	0.11	56.8	88.3	30.7	20.9	
JUNE -2016	NR	0.10	55.7	77.8	26.0	17.8	
JULY -2016	NR	0.11	56.8	74.1	26.1	17.9	
AUGUST -2016	0.002	0.11	57.2	71.5	26.9	17.8	
SEPTEMBER-2016	NR	0.10	56.6	61.8	22.0	16.0	
OCTOBER -2016	0.003	0.09	56.1	73.0	27.5	17.6	
NOVEMBER -2016	NR	0.10	58.8	86.3	30.8	19.3	
DECEMBER -2016	NR	0.05	56.6	80.2	28.0	17.3	
Annual Average:	0.003	0.10	57.1	75.6	28.2	18.2	

Source:	Sodium	Calcium	Magnesium	Total	Total	Lithium
	Hardness	Hardness	Hardness	Hardness	Dissolved Solids	MG/L
MDL:	1	.134	.132	.134	100	.015
Units:	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
JANUARY -2016	214	199	130	329	986	0.04
FEBRUARY -2016	198	163	117	280	982	0.03
MARCH -2016	219	178	133	311	1000	0.04
APRIL -2016	200	195	115	310	1010	0.04
MAY -2016	226	221	126	347	1020	0.04**
JUNE -2016	187	195	107	302	999	0.05
JULY -2016	193	185	107	292	1040	0.03
AUGUST -2016	192	179	110	289	981	0.04
SEPTEMBER-2016	159	155	90	245	959	0.05
OCTOBER -2016	187	183	113	296	1010	0.04
NOVEMBER -2016	242	216	126	342	993	0.05
DECEMBER -2016	202	201	115	316	1070	0.04
Annual Average:	202	189.2	116	305	1004	0.04

Source:	Cobalt	Molybdenum	Vanadium	Nitrate	O-Phosphate	Tot Alkalinity
	UG/L	UG/L	UG/L	MG/L	MG/L	(bicarbonate) MG/L
MDL:	.24	.32	4.4	.04	.2	20
Units:	UG/L	UG/L	UG/L	MG/L	MG/L	MG/L
JANUARY -2016	0.30	5.90	0.70	49.9	1.0	166
FEBRUARY -2016	0.49	5.79	<0.45	40.2	1.4	157^
MARCH -2016	0.57	4.32	0.86	24.4	4.4	197
APRIL -2016	0.58	3.75	0.98	38.9	5.9	176
MAY -2016	ND	4.42	0.51	30.5	7.8	178
JUNE -2016	0.59	5.11	0.61	35.0	6.4	154
JULY -2016	0.25	3.97	ND	37.6	7.3	161
AUGUST -2016	1.02	4.70	6.26*	24.8	3.7	180
SEPTEMBER-2016	0.56	5.91	1.26	34.3	5.9	155
OCTOBER -2016	0.78	4.33	2.27	39.2	6.2	151
NOVEMBER -2016	0.88	3.64	ND	45.8	6.5	154
DECEMBER -2016	0.41	3.52	1.30	45.2	1.1	163
Annual Average:	0.536	4.61	0.772	37.2	4.8	167

*= Internal standard did not meet QC criteria for this analyte. Result is not used in average calculations.

^= Samples analyzed with expired buffer solution.

**= Blank did not meet QC criteria for this analyte due to contamination. The result value of the blank in this batch was 0.028 MG/L, result above the MDL. Result is not used in computations.

ND= Not Detected; NR= Not Required

SOUTH BAY WATER RECLAMATION PLANT
Reclaimed Water

ANNUAL 2016

Source:		SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34
Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Sample ID:	MDL Units	P831517	P857825	P878496	P895235
Aluminum	23.8 UG/L	ND	ND	38	ND
Antimony	2.44 UG/L	<2.4	ND	ND	ND
Arsenic	.206 UG/L	0.4	0.5	1.3	0.8
Barium	.7 UG/L	56.3	85.4	32.1	48.8
Beryllium	.05 UG/L	ND	ND	ND	ND
Boron	1.4 UG/L	394	353	345	329
Cadmium	.26 UG/L	ND	ND	ND	ND
Chromium	.54 UG/L	2.4	1.7	2.3	1.3
Cobalt	.24 UG/L	0.49	ND	1.02	0.78
Copper	2.16 UG/L	8	7	12	3
Iron	15.6 UG/L	46	41	126	90
Lead	1.68 UG/L	ND	ND	ND	3
Manganese	.78 UG/L	24.9	20.9	58.2	30.1
Mercury	.005 UG/L	0.005	ND	ND	ND
Molybdenum	.32 UG/L	5.8	4.4	4.7	4.3
Nickel	.53 UG/L	3.65	6.14	4.82	3.72
Selenium	.17 UG/L	0.37	0.85	0.59	0.45
Silver	.73 UG/L	ND	ND	ND	13.3
Thallium	3.12 UG/L	ND	ND	ND	ND
Vanadium	.45 UG/L	<0.45	0.51	NA	2.27
Zinc	4.19 UG/L	34.8	34.3	15.1	11.9
Bromide	.1 MG/L	0.4	0.2	0.3	0.3
Chloride	7 MG/L	241	251	229	224
Fluoride	.05 MG/L	0.50	0.47	0.42	0.41
Nitrate	.04 MG/L	56.8	32.3	21.9	35.8
Nitrate (as N)	MG/L	12.8	7.30	4.95	8.09
Ortho Phosphate (as P04)	.2 MG/L	1.1	7.2	2.3	6.0
Sulfate	9 MG/L	154	229	201	210
Calcium	.04 MG/L	65	88	72	73
Lithium	.012 MG/L	0.029	0.042*	0.036	0.044
Magnesium	.1 MG/L	29	31	27	28
Potassium	.3 MG/L	18	21	18	18
Sodium	1 MG/L	198	226	192	187
Calcium Hardness	.1 MG/L	162	220	179	182
Magnesium Hardness	.412 MG/L	118	126	111	113
Total Hardness	.512 MG/L	280	346	290	295
Cyanide, Total	.002 MG/L	0.002	0.004	0.002	0.003
Sulfides-Total	.4 MG/L	ND	ND	ND	0.4
Total Kjeldahl Nitrogen	1.6 MG/L	ND	ND	7.4	3.2
Ammonia-N	.3 MG/L	NA	ND	4.5	ND
Adjusted Sodium Adsorption	MG/L	5.5	6.1	5.4	5.2
Percent Sodium	PERCENT	58.8	56.8	57.2	56.1
Total Organic Carbon	.3 MG/L	10.1	10.2	8.4	9.0

*= Blank did not meet QC criteria for this analyte due to contamination. The result of the blank in this batch was 0.028 MG/L; this value is above the MDL.

ND= Not Detected; NR= Not Required

SOUTH BAY WATER RECLAMATION PLANT
Radioactivity

Annual 2016

Source	Sample Date	Sample ID	Gross Alpha Radiation	Gross Beta Radiation
SB_REC_WATER_34	02-FEB-2016	P831517	1.5 ± 3 .4	16.7 ± 4.1
SB_REC_WATER_34	03-MAY-2016	P857825	5.4 ± 1.8	9.5 ± 1.6
SB_REC_WATER_34	02-AUG-2016	P878496	3.5 ± 2.0	2.3 ± 1.0
SB_REC_WATER_34	04-OCT-2016	P895235	6.5 ± 1.9	14.5 ± 1.8

Units in picocuries per Liter (pCi/L)

South Bay Water Reclamation Plant
Chlorinated Pesticides

Annual 2016

Date:		MDL	Units	02-FEB-2016 P831517	03-MAY-2016 P857825	02-AUG-2016 P878496	04-OCT-2016 P895235
Aldrin		4	NG/L	ND	ND	ND	ND
BHC, Alpha isomer		2.15	NG/L	ND	ND	ND	ND
BHC, Beta isomer		2	NG/L	ND	ND	ND	ND
BHC, Delta isomer		2	NG/L	ND	ND	ND	ND
BHC, Gamma isomer		1.71	NG/L	ND	ND	ND	ND
Alpha (cis) Chlordane		1.4	NG/L	ND	ND	ND	ND
Gamma (trans) Chlordane		1.83	NG/L	ND	ND	ND	ND
Alpha Chlordene			NG/L	NA	NA	NA	NA
Gamma Chlordene			NG/L	NA	NA	NA	NA
Cis Nonachlor		4	NG/L	ND	ND	ND	ND
Dieldrin		4.3	NG/L	ND	ND	ND	ND
Endosulfan Sulfate		7	NG/L	ND	ND	ND	ND
Alpha Endosulfan		1.5	NG/L	ND	ND	ND	ND
Beta Endosulfan		3.1	NG/L	ND	ND	ND	ND
Endrin		6	NG/L	ND	ND	ND	ND
Endrin aldehyde		5.4	NG/L	ND	ND	ND	ND
Heptachlor		.89	NG/L	ND	ND	ND	ND
Heptachlor epoxide		9.4	NG/L	ND	ND	ND	ND
Methoxychlor		20	NG/L	ND	ND	ND	ND
Mirex		2.3	NG/L	ND	ND	ND	ND
o,p-DDD		4	NG/L	ND	ND	ND	ND
o,p-DDE		2	NG/L	ND	ND	ND	ND
o,p-DDT		2.4	NG/L	ND	ND	ND	ND
Oxychlordane		2	NG/L	ND	ND	ND	ND
PCB 1016		250	NG/L	ND	ND	ND	ND
PCB 1221		2000	NG/L	ND	ND	ND	ND
PCB 1232		750	NG/L	ND	ND	ND	ND
PCB 1242		250	NG/L	ND	ND	ND	ND
PCB 1248		250	NG/L	ND	ND	ND	ND
PCB 1254		500	NG/L	ND	ND	ND	ND
PCB 1260		500	NG/L	ND	ND	ND	ND
PCB 1262		500	NG/L	ND	ND	ND	ND
p,p-DDD		4	NG/L	ND	ND	ND	ND
p,p-DDE		1.4	NG/L	ND	ND	ND	ND
p,p-DDT		3	NG/L	ND	ND	ND	ND
Toxaphene		250	NG/L	ND	ND	ND	ND
Trans Nonachlor		1.1	NG/L	ND	ND	ND	ND
Heptachlors		9.4	NG/L	0	0	0	0
Endosulfans		7	NG/L	0	0	0	0
Polychlorinated biphenyls		2000	NG/L	0	0	0	0
Chlordane + related cmpds.		4	NG/L	0	0	0	0
DDT and derivatives		4	NG/L	0	0	0	0
Hexachlorocyclohexanes		2.15	NG/L	0	0	0	0
Aldrin + Dieldrin		4.3	NG/L	0	0	0	0
Chlorinated Hydrocarbons		2000	NG/L	0	0	0	0

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
Reclaimed Water

OrganoPhosphorous Analysis

Annual 2016

Analyte	MDL	Units	03-MAY-2016	04-OCT-2016
			P857825	P895235
Demeton O	.02	UG/L	ND	ND
Demeton S	.08	UG/L	ND	ND
Diazinon	.04	UG/L	ND	ND
Guthion	.09	UG/L	ND	ND
Malathion	.06	UG/L	ND	ND
Parathion	.07	UG/L	ND	ND
Dichlorvos	.04	UG/L	ND	ND
Disulfoton	.04	UG/L	ND	ND
Dimethoate	.12	UG/L	ND	NA
Stirophos	.05	UG/L	ND	ND
Coumaphos	.07	UG/L	ND	ND
Chlorpyrifos	.04	UG/L	ND	ND
Thiophosphorus Pesticides	.09	UG/L	0.0	0.0
Demeton -O, -S	.08	UG/L	0.0	0.0
Total Organophosphorus Pesticides	.12	UG/L	0.0	0.0

ND= Not Detected

NA= Not Analyzed

South Bay Water Reclamation Plant
Reclaimed Water

Organotins

Annual 2016

Source:	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34		
Date:	02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016*		
Analyte	MDL	Units	P831517	P857825	P878496	P895235
Tributyltin	2	UG/L	ND	ND	ND	ND
Dibutyltin	7	UG/L	ND	ND	ND	ND
Monobutyltin	16	UG/L	ND	ND	ND	NA

ND=not detected

NA=not analyzed

*= this sample was analyzed using a Shimadzu GC 2010 Plus; therefore new method detection limits were established:

Dibutyltin= 0.0052 ug/L

Tributyltin= 0.012 ug/L

South Bay Water Reclamation Plant
Reclaimed Water

Phenols

Annual 2016

Date:		02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	MDL Units	P831517	P857825	P878496	P895235
2-Chlorophenol	1.32 UG/L	ND	ND	ND	ND
4-Chloro-3-methylphenol	1.67 UG/L	ND	ND	ND	ND
2,4-Dichlorophenol	1.01 UG/L	ND	ND	ND	ND
2,4-Dimethylphenol	2.01 UG/L	ND	ND	ND	ND
2,4-Dinitrophenol	2.16 UG/L	ND	ND	ND	ND
2-Methyl-4,6-dinitrophenol	1.52 UG/L	ND	ND	ND	ND
2-Nitrophenol	1.55 UG/L	ND	ND	ND	ND
4-Nitrophenol	1.14 UG/L	ND	ND	ND	ND
Pentachlorophenol	1.12 UG/L	ND	ND	ND	ND
Phenol	1.76 UG/L	ND	ND	ND	ND
2,4,6-Trichlorophenol	1.65 UG/L	ND	ND	ND	ND
Total Chlorinated Phenols	1.67 UG/L	0.0	0.0	0.0	0.0
Total Non-Chlorinated Phenols	2.16 UG/L	0.0	0.0	0.0	0.0
Total Phenols	2.16 UG/L	0.0	0.0	0.0	0.0

Additional analytes determined

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

ND= not detected

NA= not analyzed

South Bay Water Reclamation Plant
Reclaimed water

Base/Neutrals

Annual 2016

Date:		MDL	Units	02-FEB-2016 P831517	03-MAY-2016 P857825	02-AUG-2016 P878496	04-OCT-2016 P895235
Acenaphthene		1.8	UG/L	ND	ND	ND	ND
Acenaphthylene		1.77	UG/L	ND	ND	ND	ND
Anthracene		1.29	UG/L	ND	ND	ND	ND
Benzidine		1.52	UG/L	ND*	ND	ND*	ND*
Benzo[a]anthracene		1.1	UG/L	ND	ND	ND	ND
3,4-Benzo(b)fluoranthene		1.35	UG/L	ND	ND	ND	ND
Benzo[k]fluoranthene		1.49	UG/L	ND	ND	ND	ND
Benzo[a]pyrene		1.25	UG/L	ND	ND	ND	ND
Benzo[g,h,i]perylene		1.09	UG/L	ND	ND	ND	ND
4-Bromophenyl phenyl ether		1.4	UG/L	ND	ND	ND	ND
Bis-(2-chloroethoxy) methane		1.01	UG/L	ND	ND	ND	ND
Bis-(2-chloroethyl) ether		1.38	UG/L	ND	ND	ND	ND
Bis-(2-chloroisopropyl) ether		1.16	UG/L	ND	ND	ND	ND
4-Chlorophenyl phenyl ether		1.57	UG/L	ND	ND	ND	ND
2-Chloronaphthalene		1.87	UG/L	ND	ND	ND	ND
Chrysene		1.16	UG/L	ND	ND	ND	ND
Dibenzo(a,h)anthracene		1.01	UG/L	ND	ND	ND	ND
Butyl benzyl phthalate		2.84	UG/L	ND	ND	ND	ND
Di-n-butyl phthalate		3.96	UG/L	ND	ND	ND	ND
Bis-(2-ethylhexyl) phthalate		8.96	UG/L	ND	ND	ND	ND
Diethyl phthalate		3.05	UG/L	ND	ND	ND	5.4
Dimethyl phthalate		1.44	UG/L	ND	ND	ND	ND
Di-n-octyl phthalate		1	UG/L	ND	ND	ND	ND
3,3-Dichlorobenzidine		2.44	UG/L	ND	ND	ND	ND
2,4-Dinitrotoluene		1.36	UG/L	ND	ND	ND	ND
2,6-Dinitrotoluene		1.53	UG/L	ND	ND	ND	ND
1,2-Diphenylhydrazine		1.37	UG/L	ND	ND	ND	ND
Fluoranthene		1.33	UG/L	ND	ND	ND	ND
Fluorene		1.61	UG/L	ND	ND	ND	ND
Hexachlorobenzene		1.48	UG/L	ND	ND	ND	ND
Hexachlorobutadiene		1.64	UG/L	ND	ND	ND	ND
Hexachlorocyclopentadiene		1.25	UG/L	ND	ND	ND	ND
Hexachloroethane		1.32	UG/L	ND	ND	ND	ND
Indeno(1,2,3-CD)pyrene		1.14	UG/L	ND	ND	ND	ND
Isophorone		1.53	UG/L	ND*	ND	ND	ND
Naphthalene		1.65	UG/L	ND	ND	ND	ND
Nitrobenzene		1.6	UG/L	ND	ND	ND	ND
N-nitrosodimethylamine		1.27	UG/L	ND	ND	ND	ND
N-nitrosodi-n-propylamine		1.16	UG/L	ND	ND	ND	ND
N-nitrosodiphenylamine		3.48	UG/L	ND	ND	ND	ND
Phenanthrone		1.34	UG/L	ND	ND	ND	ND
Pyrene		1.43	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene		1.52	UG/L	ND	ND	ND	ND
Polynuc. Aromatic Hydrocarbons		1.77	UG/L	0.0	0.0	0.0	0.0
Base/Neutral Compounds		8.96	UG/L	0.0	0.0	0.0	5.4

Additional analytes determined

Benzo[e]pyrene		1.44	UG/L	ND	ND	ND	ND
Biphenyl		2.29	UG/L	ND	ND	ND	ND
2,6-Dimethylnaphthalene		2.16	UG/L	ND	ND	ND	ND
1-Methylnaphthalene		2.18	UG/L	ND	ND	ND	ND
1-Methylphenanthrene		1.46	UG/L	ND	ND	ND	ND
2-Methylnaphthalene		2.14	UG/L	ND	ND	ND	ND
2,3,5-Trimethylnaphthalene		2.18	UG/L	ND	ND	ND	ND
Perylene		1.41	UG/L	ND	ND	ND	ND

* = Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

ND= Not Detected

SOUTH BAY WASTEWATER TREATMENT PLANT
Priority Pollutants Purgeable Compounds, EPA Method 624 & 8260B

ANNUAL 2016

Source:	MDL	Units	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34!
			02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016
Analyte	P831242		P857828	P878499	P895238	
Dichlorodifluoromethane	2.39	UG/L	ND	ND	ND	ND
Chloromethane	.5	UG/L	DNQ0.8	2.3	DNQ0.3	3.0
Vinyl chloride	.4	UG/L	ND	ND	ND	ND
Bromomethane	.7	UG/L	ND	ND	DNQ0.54^	DNQ1.1
Chloroethane	.9	UG/L	ND	ND	ND	DNQ0.5
Trichlorofluoromethane	.3	UG/L	ND	ND	ND	ND
Acrolein	1.3	UG/L	ND	ND	ND	ND
1,1-Dichloroethane	.4	UG/L	ND	ND	ND	ND
Methylene chloride	.37	UG/L	ND	DNQ1.5	DNQ0.5#	DNQ1.1
trans-1,2-dichloroethene	.6	UG/L	ND	ND	ND	ND
1,1-Dichloroethene	.4	UG/L	ND	ND	ND	ND
Acrylonitrile	.7	UG/L	ND	ND	ND	ND
Chloroform	.3	UG/L	15.2	37.7	3.2	43.1
1,1,1-Trichloroethane	.4	UG/L	ND	ND	ND	ND
Carbon tetrachloride	.4	UG/L	ND	ND	ND	ND
Benzene	.4	UG/L	ND	ND	ND	ND
1,2-Dichloroethane	.5	UG/L	ND	ND	ND	ND
Trichloroethene	.7	UG/L	ND	ND	ND	ND
1,2-Dichloropropane	.43	UG/L	ND	ND	ND	ND
Bromodichloromethane	.5	UG/L	19.1	35.2	DNQ0.8	48.7
2-Chloroethylvinyl ether	1.1	UG/L	ND	ND	ND	ND
cis-1,3-dichloropropene	.38	UG/L	ND	ND	ND	ND
Toluene	.4	UG/L	ND	ND	ND	ND
trans-1,3-dichloropropene	.5	UG/L	ND	ND	ND	ND
1,1,2-Trichloroethane	.5	UG/L	ND	ND	ND	ND
Tetrachloroethene	1.1	UG/L	ND	ND	ND	ND
Dibromochloromethane	.6	UG/L	12.9	15.8	ND	28.9
Chlorobenzene	.4	UG/L	ND	ND	ND	ND
Ethylbenzene	.41	UG/L	ND	ND	ND	ND
Bromoform	.5	UG/L	2.3	DNQ1.7	ND	4.0
1,1,2,2-Tetrachloroethane	.5	UG/L	ND	ND	ND	ND
1,3-Dichlorobenzene	.5	UG/L	ND	ND	ND	ND
1,4-Dichlorobenzene	.46	UG/L	ND	0.91*	ND	ND
1,2-Dichlorobenzene	.4	UG/L	ND	ND	ND	ND
1,2,4-Trichlorobenzene	.7	UG/L	ND	ND	ND	ND
Halomethane Purgeable Cmpnds	.7	UG/L	2.3	2.3	0.0	7.0
Total Dichlorobenzenes	.5	UG/L	0.0	0.0	0.0	0.0
Total Chloromethanes	.5	UG/L	15.2	40.0	3.2	46.1
Purgeable Compounds	1.3	UG/L	49.5	91.0	3.2	127.7

Additional analytes determined

Methyl Iodide	.6	UG/L	ND	ND	ND
Carbon disulfide	.6	UG/L	ND	ND	ND
Acetone	6.74	UG/L	ND	DNQ7.5	DNQ7.5
Allyl chloride	.6	UG/L	ND	ND	ND
Methyl tert-butyl ether	.4	UG/L	ND	ND	ND
Chloroprene	.4	UG/L	ND	ND	ND
1,2-Dibromoethane	.41	UG/L	ND	ND	ND
2-Butanone	6.3	UG/L	ND	ND	ND
Methyl methacrylate	.8	UG/L	ND	ND	ND
2-Nitropropane	12	UG/L	ND	ND	ND
4-Methyl-2-pentanone	1.3	UG/L	ND	ND	1.7
meta,para xylenes	.85	UG/L	ND	ND	ND
ortho-xylene	.4	UG/L	ND	ND	ND
Isopropylbenzene	.41	UG/L	ND	ND	ND
Styrene	.38	UG/L	ND	ND	ND
Benzyl chloride	1.1	UG/L	ND	ND	ND

*= Blank did not meet QC criteria for this analyte due to contamination, result above the MDL. Result is not used in computations.

[^] =Analyte present in method blank with a value of 0.6ug/L. Data is not reportable.

=Analyte present in method blank with a value of 0.44ug/L. Data is not reportable.

!= Sample analyzed outside the 12-hour period for BFB instrument tuning per method requirement.

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

ND= not detected

South Bay Water Reclamation Plant
Reclaimed Water

Benzidines

Annual 2016

Source:	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34	SB_REC_WATER_34		
Date:	02-FEB-2016	03-MAY-2016	02-AUG-2016	04-OCT-2016		
Analyte	MDL	Units	P831517	P857825	P878496	P895235
3,3-Dichlorobenzidine	2.44	UG/L	ND	ND	ND	ND
Benzidine	1.52	UG/L	ND*	ND	ND*	ND*

* = Recovery of compound in internal check and matrix spike sample outside method acceptance limits; value is not used in average calculations.

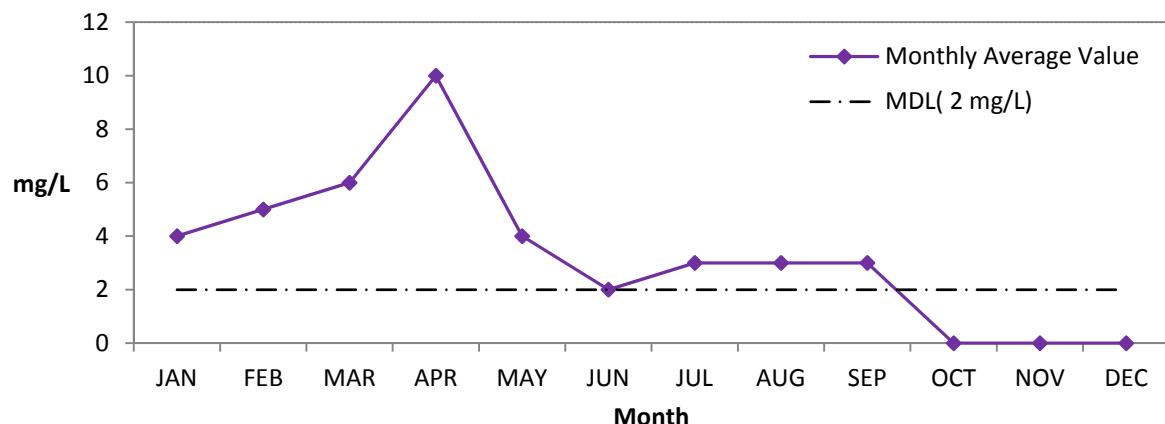
ND= Not Detected

B. Reclaimed Water Graphs

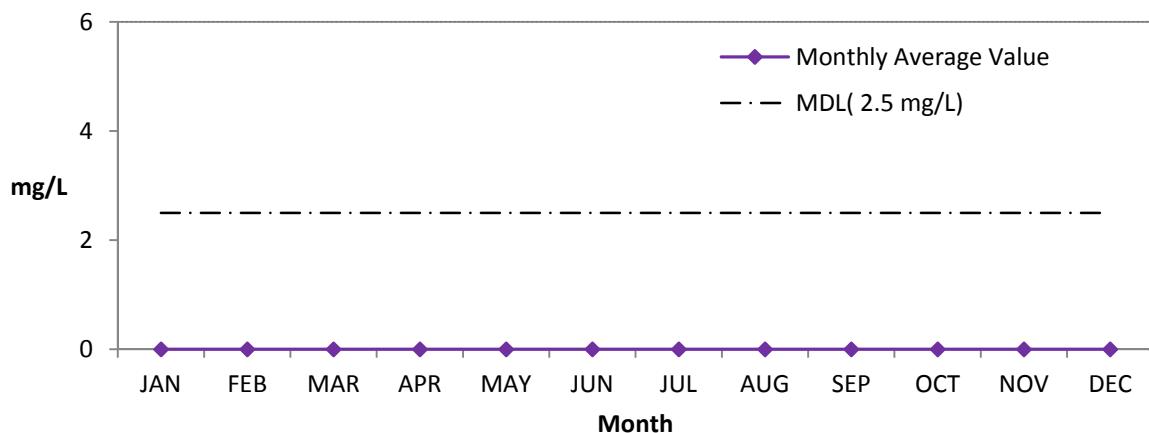
Graphs of monthly averages for permit parameters with measurable concentration averages.

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.

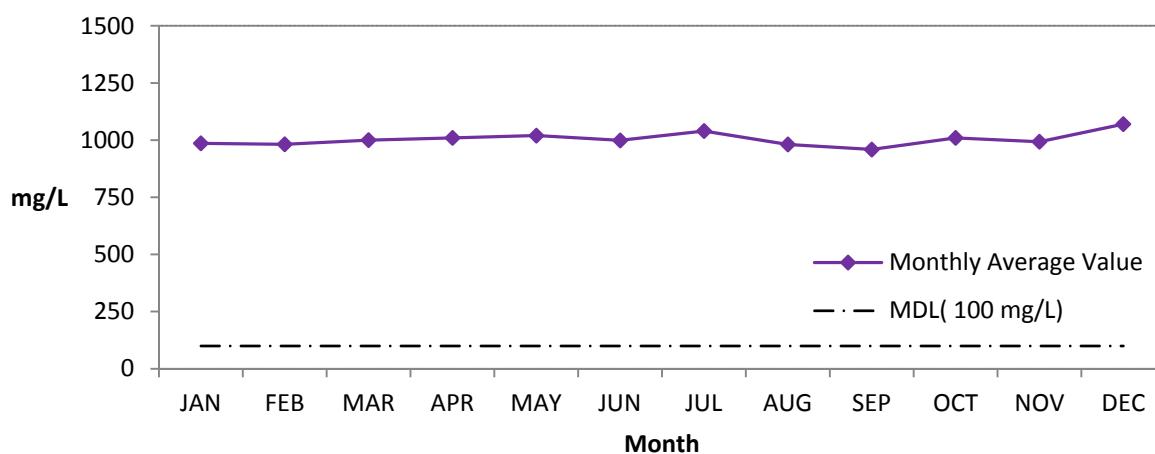
2016 South Bay Reclaimed Water Biological Oxygen Demand



Total Suspended Solids

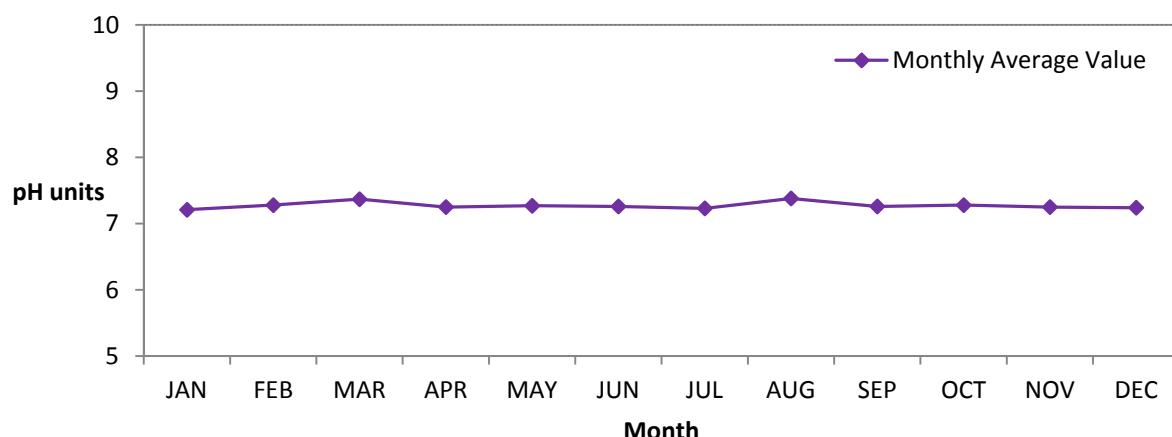


Total Dissolved Solids

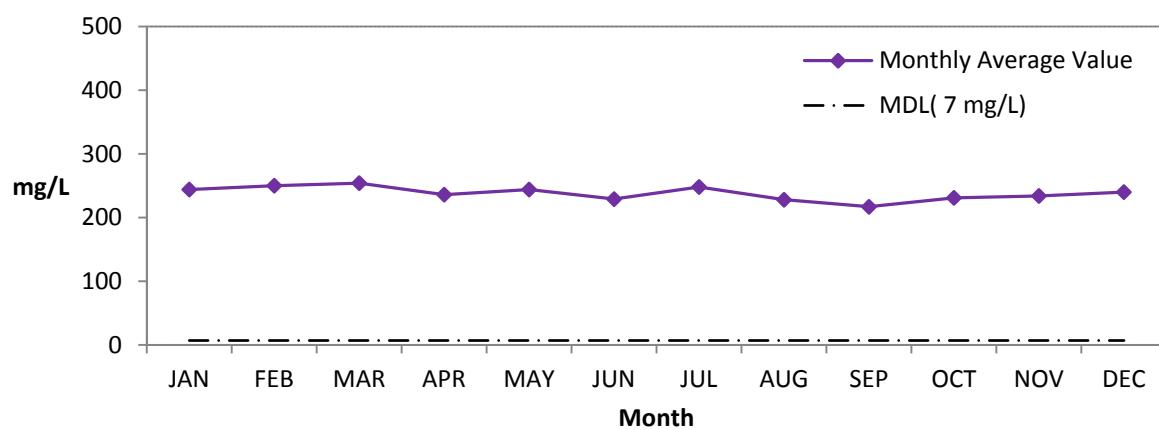


2016 South Bay Reclaimed Water

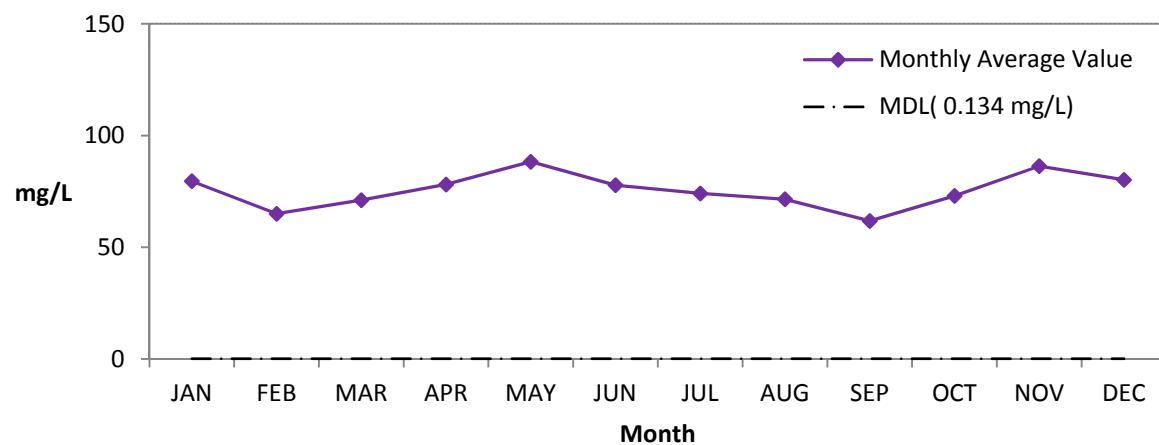
pH



Chloride

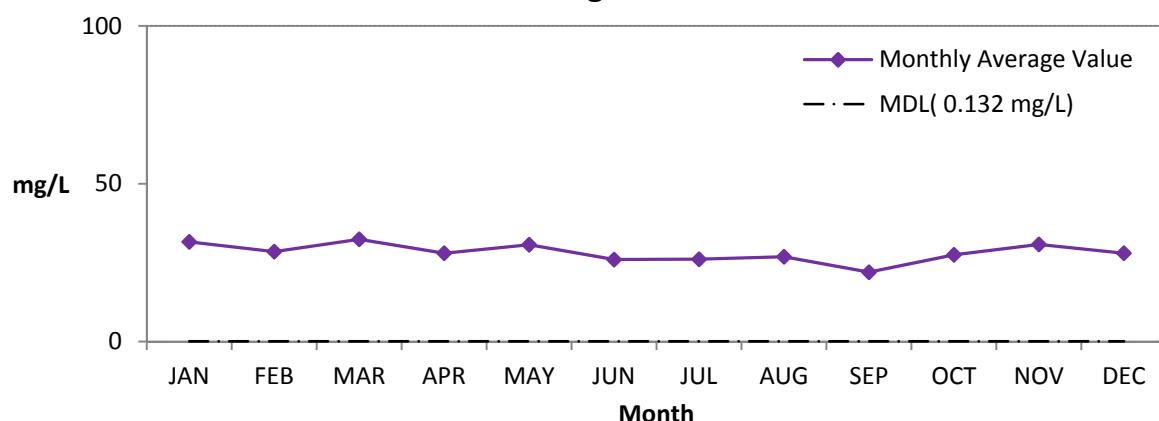


Calcium

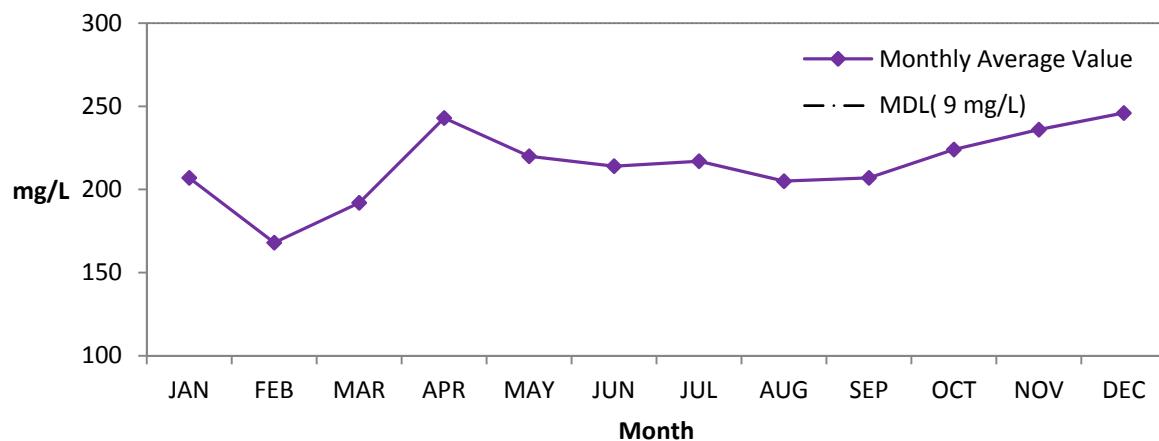


2016 South Bay Reclaimed Water

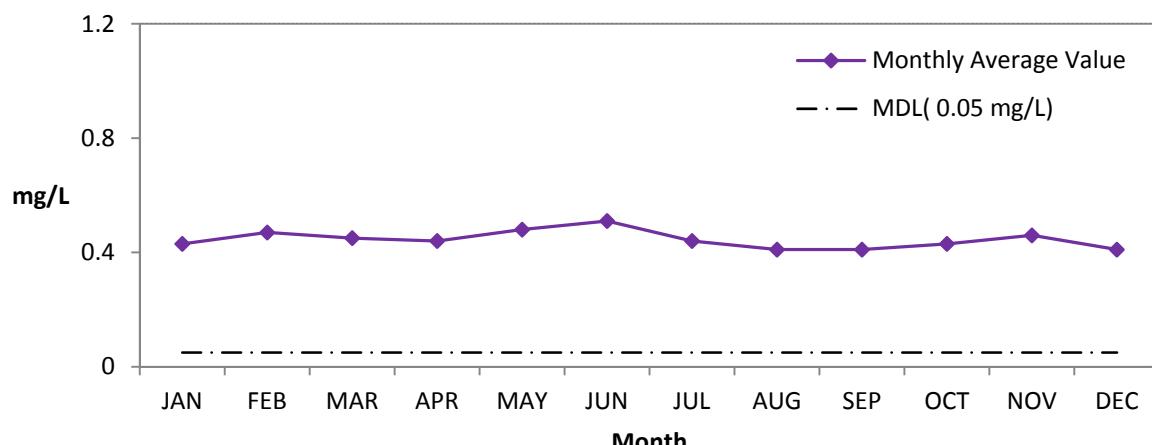
Magnesium



Sulfate

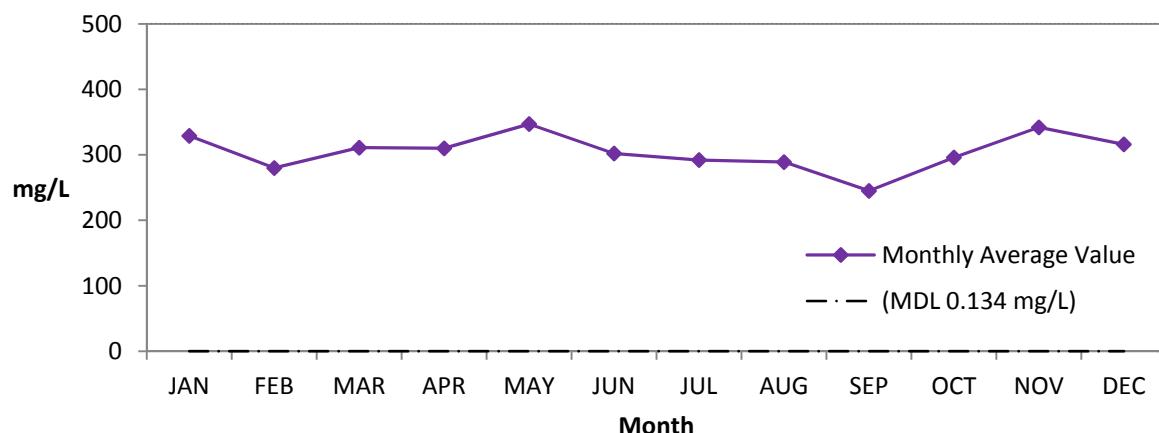


Fluoride

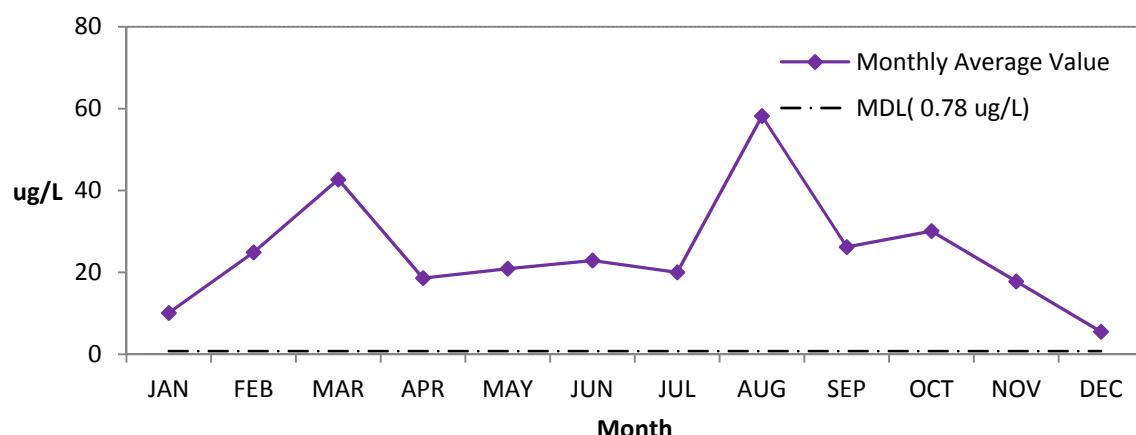


2016 South Bay Reclaimed Water

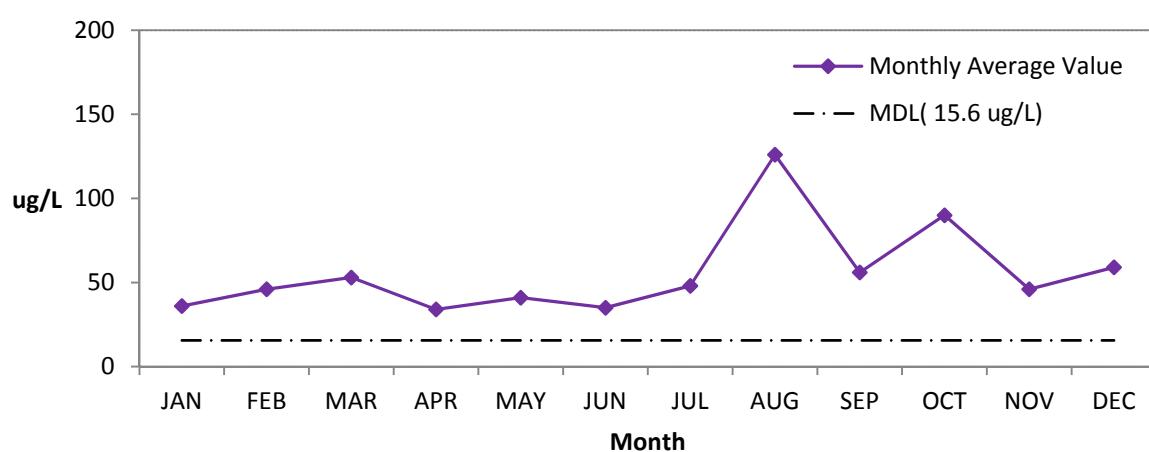
Total Hardness



Manganese

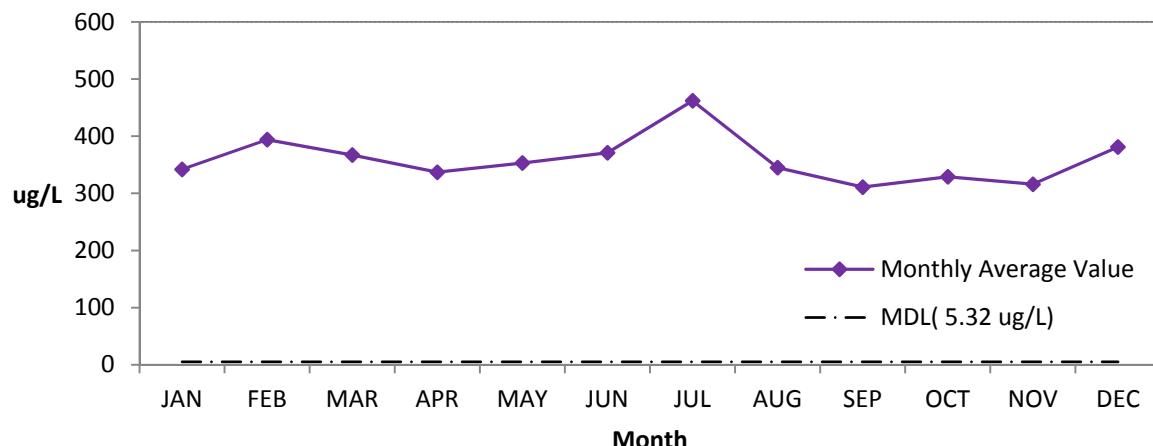


Iron

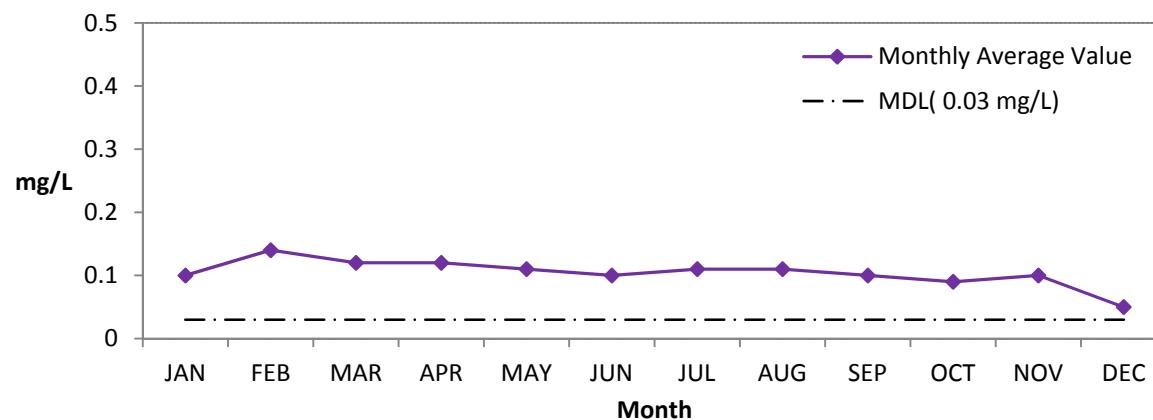


2016 South Bay Reclaimed Water

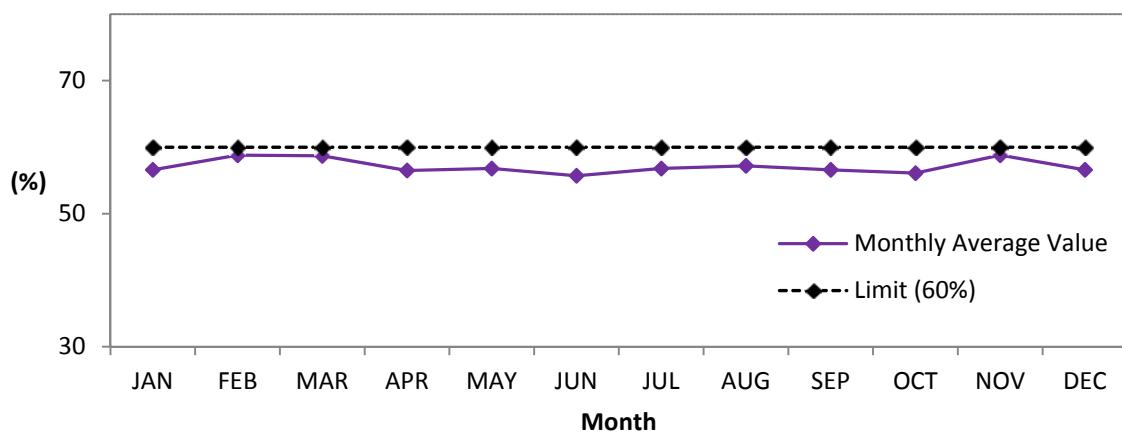
Boron



MBAS



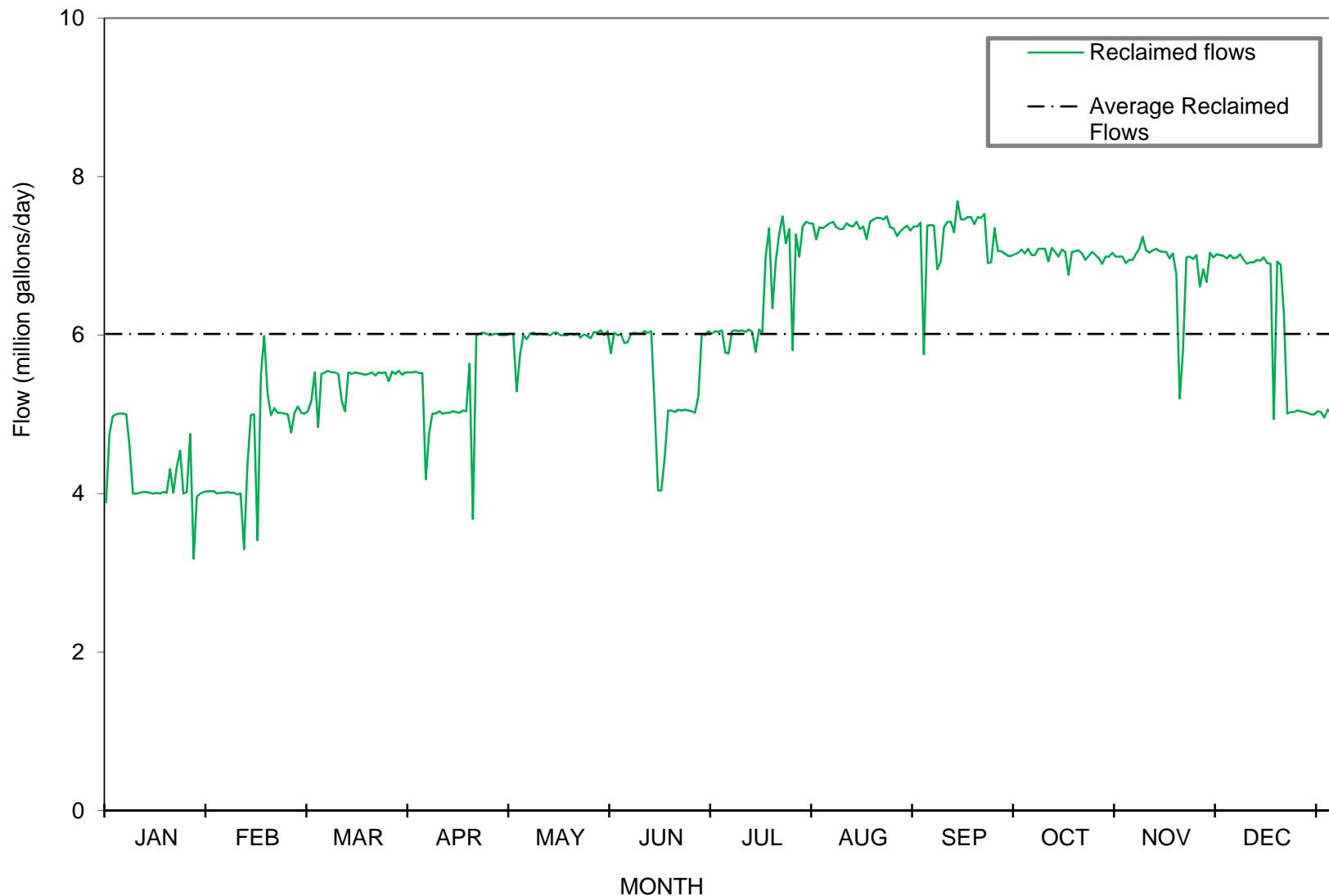
Percent Sodium



C. Daily Values of Selected Parameters.

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

South Bay Wastewater Reclamation Plant 2016 Reclaimed Production Flows



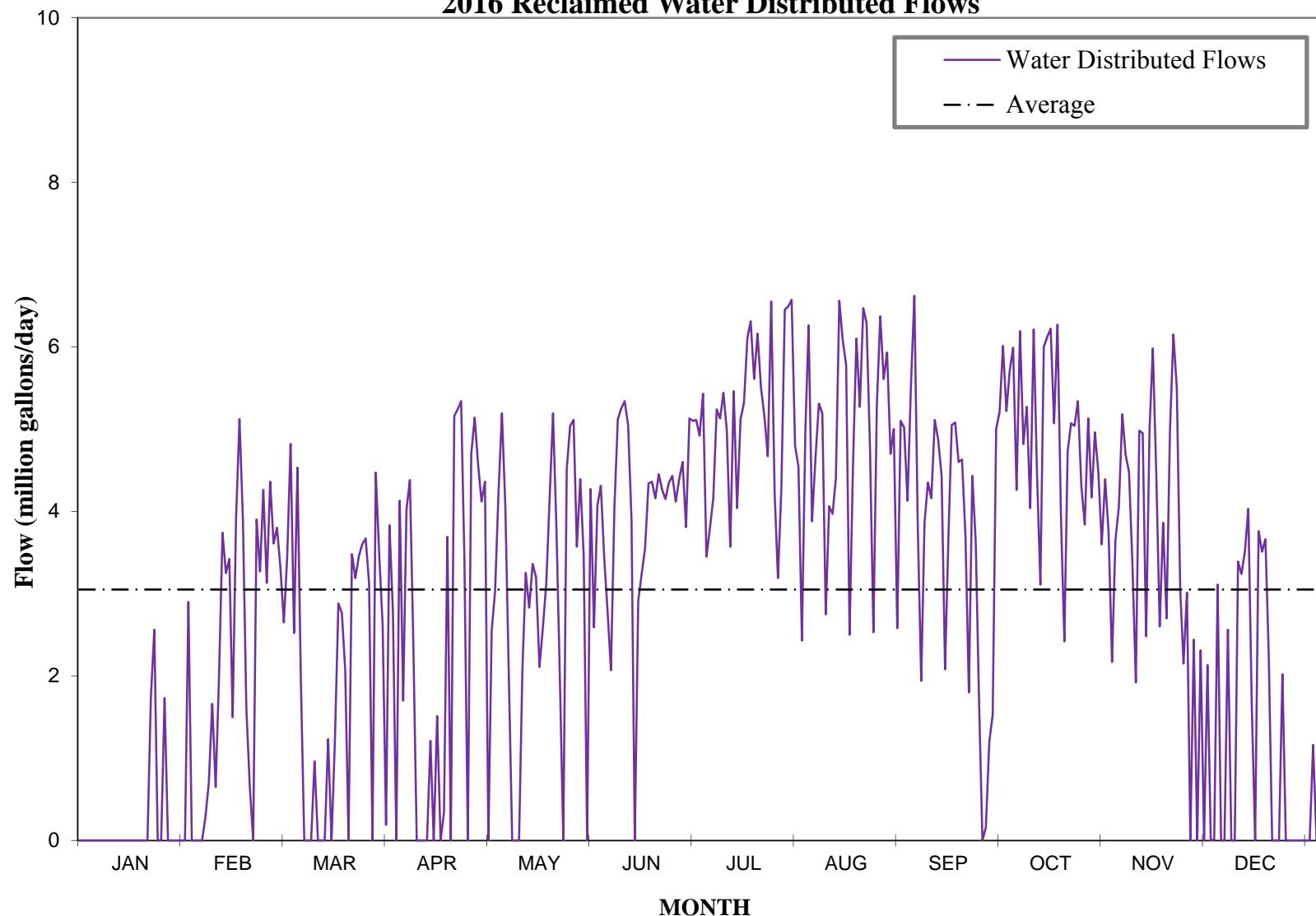
South Bay Water Reclamation Plant
Recycled Produce Flows (mgd) 2016

Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3.89	4.03	5.04	5.53	6.02	6.00	6.04	7.35	7.38	7.09	6.95	6.97
2	4.75	4.03	5.17	5.54	5.29	6.01	6.06	7.38	7.39	7.01	7.02	6.98
3	4.98	4.00	5.53	5.52	5.75	5.90	5.78	7.41	7.38	7.01	7.09	7.02
4	5.00	4.01	4.84	5.52	6.00	5.91	5.77	7.43	6.83	7.09	7.24	6.95
5	5.01	4.01	5.51	4.18	5.95	6.02	6.05	7.36	6.93	7.09	7.07	6.90
6	5.01	4.02	5.53	4.77	6.02	6.03	6.06	7.34	7.36	7.09	7.04	6.92
7	5.00	4.01	5.55	5.01	6.03	6.02	6.05	7.34	7.43	6.93	7.07	6.92
8	4.59	4.01	5.53	5.01	6.01	6.02	6.06	7.41	7.43	7.10	7.09	6.95
9	4.00	3.99	5.53	5.04	6.02	6.05	6.04	7.38	7.30	7.05	7.06	6.94
10	4.00	4.00	5.51	5.01	6.01	6.03	6.07	7.37	7.69	6.99	7.05	6.98
11	4.01	3.30	5.17	5.02	6.01	6.05	6.04	7.43	7.46	7.08	7.05	6.91
12	4.02	4.36	5.04	5.02	6.00	5.09	5.79	7.34	7.46	7.05	6.97	6.90
13	4.02	4.99	5.53	5.04	6.03	4.04	6.07	7.37	7.49	6.76	7.03	4.94
14	4.01	5.00	5.51	5.03	6.03	4.04	6.03	7.21	7.49	7.05	6.77	6.93
15	4.00	3.41	5.53	5.02	6.00	4.46	6.99	7.43	7.40	7.06	5.20	6.89
16	4.01	5.50	5.52	5.05	6.00	5.05	7.35	7.46	7.49	7.07	5.80	6.26
17	4.00	5.99	5.51	5.04	6.00	5.05	6.34	7.48	7.48	7.03	6.98	5.01
18	4.02	5.26	5.50	5.64	6.02	5.03	6.93	7.48	7.53	6.95	6.99	5.03
19	4.01	4.99	5.51	3.68	6.00	5.06	7.28	7.46	6.91	7.00	6.96	5.03
20	4.31	5.08	5.53	6.00	6.02	5.05	7.50	7.50	6.92	7.05	7.01	5.05
21	4.01	5.02	5.49	6.02	5.97	5.06	7.16	7.36	7.35	7.01	6.61	5.04
22	4.33	5.02	5.53	6.03	6.01	5.05	7.34	7.35	7.06	6.97	6.83	5.03
23	4.54	5.01	5.52	6.02	5.99	5.04	5.81	7.25	7.06	6.90	6.67	5.02
24	4.00	5.00	5.53	6.00	5.96	5.02	7.27	7.31	7.03	6.99	7.04	5.00
25	4.02	4.77	5.42	6.01	6.04	5.23	6.99	7.35	7.00	6.99	6.98	5.00
26	4.75	5.02	5.54	6.02	6.03	6.02	7.37	7.38	7.00	7.04	7.02	5.04
27	3.18	5.10	5.51	6.00	6.06	6.00	7.43	7.32	7.02	6.99	7.01	5.03
28	3.96	5.02	5.55	6.00	6.00	6.05	7.41	7.37	7.04	6.99	7.00	4.96
29	4.00	5.01	5.50	6.00	6.05	6.02	7.41	7.37	7.08	6.99	6.97	5.06
30	4.02		5.53	6.02	5.77	6.05	7.21	7.42	7.03	6.91	7.01	5.01
31	4.03		5.53		6.03		7.36	5.76		6.95		5.04
Average	4.24	4.58	5.44	5.39	5.97	5.48	6.61	7.33	7.25	7.01	6.89	5.93
Minimum	3.18	3.30	4.84	3.68	5.29	4.04	5.77	5.76	6.83	6.76	5.20	4.94
Maximum	5.01	5.99	5.55	6.03	6.06	6.05	7.50	7.50	7.69	7.10	7.24	7.69
Total	131	133	169	162	185	164	205	227	217	217	207	184
												Annual Summary

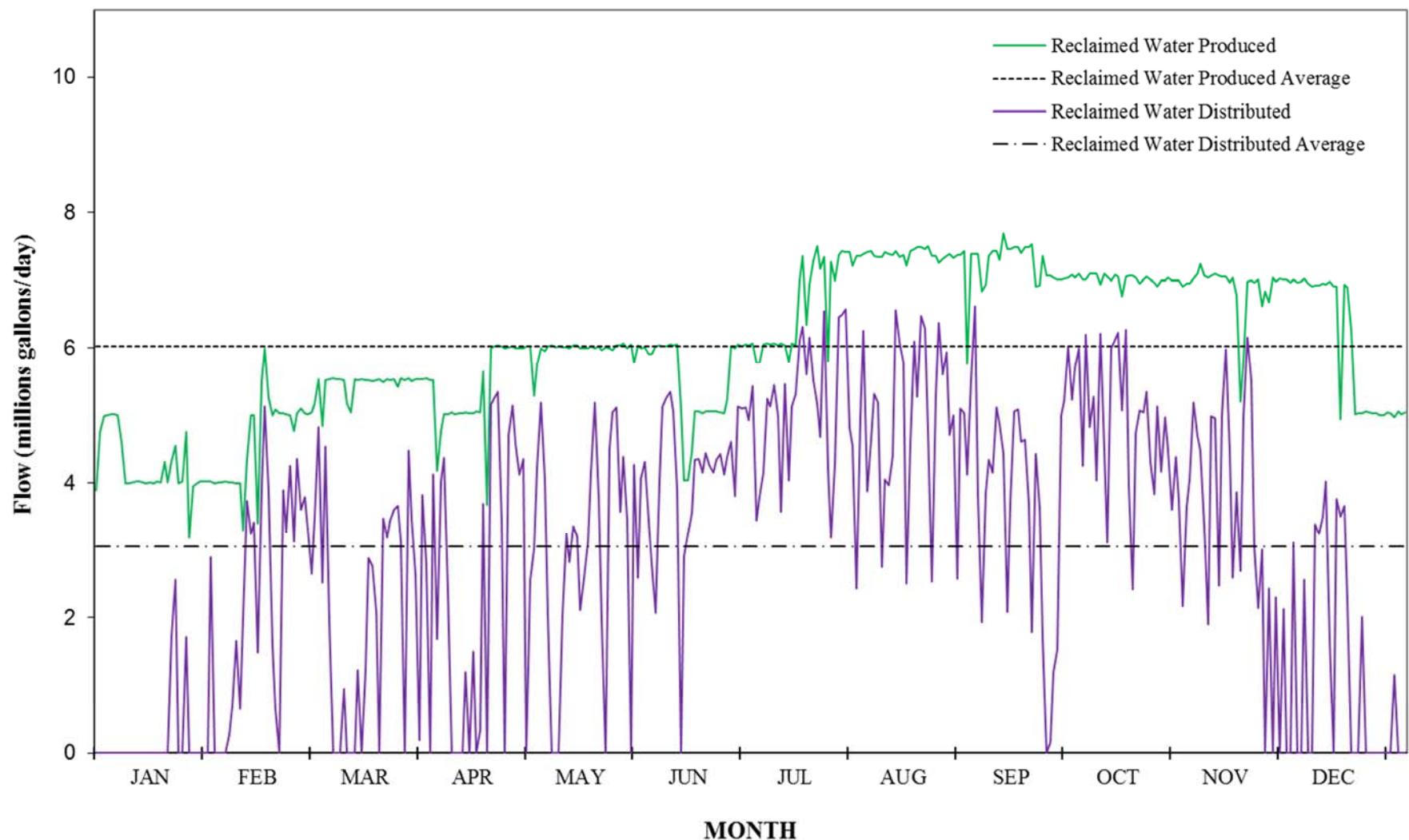
South Bay Water Reclamation Plant
Recycled Distributed Flows (mgd) 2016

Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	0.00	0.00	2.65	3.83	2.55	4.07	4.92	4.97	5.53	5.99	4.06	0.00	
2	0.00	2.90	3.48	2.79	3.03	4.31	5.43	6.26	6.62	4.26	5.18	0.00	
3	0.00	0.00	4.82	0.00	4.23	3.43	3.45	3.88	3.81	6.19	4.69	2.56	
4	0.00	0.00	2.52	4.13	5.19	2.79	3.79	4.65	1.94	4.82	4.48	0.00	
5	0.00	0.00	4.53	1.70	4.05	2.07	4.16	5.31	3.86	5.27	3.36	0.00	
6	0.00	0.00	1.95	4.02	2.04	4.04	5.24	5.19	4.35	4.04	1.92	3.39	
7	0.00	0.28	0.00	4.38	0.00	5.12	5.13	2.75	4.16	6.21	4.98	3.24	
8	0.00	0.70	0.00	2.40	0.00	5.25	5.44	4.06	5.11	4.48	4.95	3.51	
9	0.00	1.66	0.00	0.00	0.00	5.34	4.98	3.97	4.87	3.11	2.48	4.03	
10	0.00	0.65	0.96	0.00	2.05	5.05	3.57	4.40	4.43	6.00	5.00	1.67	
11	0.00	2.02	0.00	0.00	3.25	3.90	5.46	6.56	2.08	6.12	5.98	0.00	
12	0.00	3.74	0.00	0.00	2.83	0.00	4.04	6.08	3.71	6.22	4.46	3.76	
13	0.00	3.25	0.00	1.21	3.36	2.91	5.12	5.78	5.05	5.07	2.60	3.51	
14	0.00	3.42	1.23	0.00	3.20	3.24	5.32	2.50	5.08	6.27	3.86	3.66	
15	0.00	1.50	0.00	1.51	2.11	3.55	6.11	4.57	4.60	3.96	2.70	2.26	
16	0.00	3.92	1.24	0.00	2.59	4.34	6.31	6.10	4.63	2.42	4.98	0.00	
17	0.00	5.12	2.88	0.34	3.13	4.36	5.61	5.27	3.70	4.73	6.15	0.00	
18	0.00	3.90	2.77	3.69	4.15	4.16	6.16	6.47	1.80	5.07	5.50	0.00	
19	0.00	1.61	2.07	0.00	5.19	4.45	5.51	6.29	4.43	5.04	3.05	2.02	
20	0.00	0.66	0.00	5.16	3.78	4.26	5.16	4.78	3.63	5.34	2.15	0.00	
21	0.00	0.00	3.48	5.24	1.97	4.15	4.67	2.53	1.71	4.31	3.01	0.00	
22	1.74	3.90	3.19	5.34	0.00	4.35	6.55	5.29	0.00	3.84	0.00	0.00	
23	2.56	3.27	3.45	3.42	4.51	4.43	4.22	6.37	0.16	5.13	2.44	0.00	
24	0.00	4.26	3.60	0.00	5.04	4.12	3.19	5.61	1.20	4.17	0.00	0.00	
25	0.00	3.13	3.67	4.70	5.11	4.39	4.28	5.93	1.53	4.96	2.31	0.00	
26	1.73	4.36	3.13	5.14	3.57	4.60	6.45	4.70	5.00	4.48	0.00	0.00	
27	0.00	3.61	0.00	4.57	4.39	3.81	6.49	5.00	5.21	3.60	2.13	0.00	
28	0.00	3.80	4.47	4.12	3.46	5.13	6.57	2.58	6.01	4.39	0.00	1.16	
29	0.00	3.31	3.48	4.36	0.00	5.10	4.80	5.10	5.22	3.74	0.01	0.00	
30	0.00		2.62	0.00	4.27	5.11	4.54	5.02	5.71	2.17	3.11	0.00	
31	0.00		0.19	2.59		2.43	4.13		3.65		0.00	Annual Summary	
Average	0.19	2.24	2.01	2.40	2.96	4.06	5.00	4.91	3.84	4.68	3.18	1.12	3.05
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	2.43	2.50	0.00	2.17	0.00	0.00	0.00
Maximum	2.56	5.12	4.82	5.34	5.19	5.34	6.57	6.56	6.62	6.27	6.15	4.03	6.62
Total	6.0	65.0	62.4	72.1	91.6	121.8	155.1	152.1	115.1	145.1	95.5	34.8	1117

South Bay Wastewater Reclamation Plant 2016 Reclaimed Water Distributed Flows

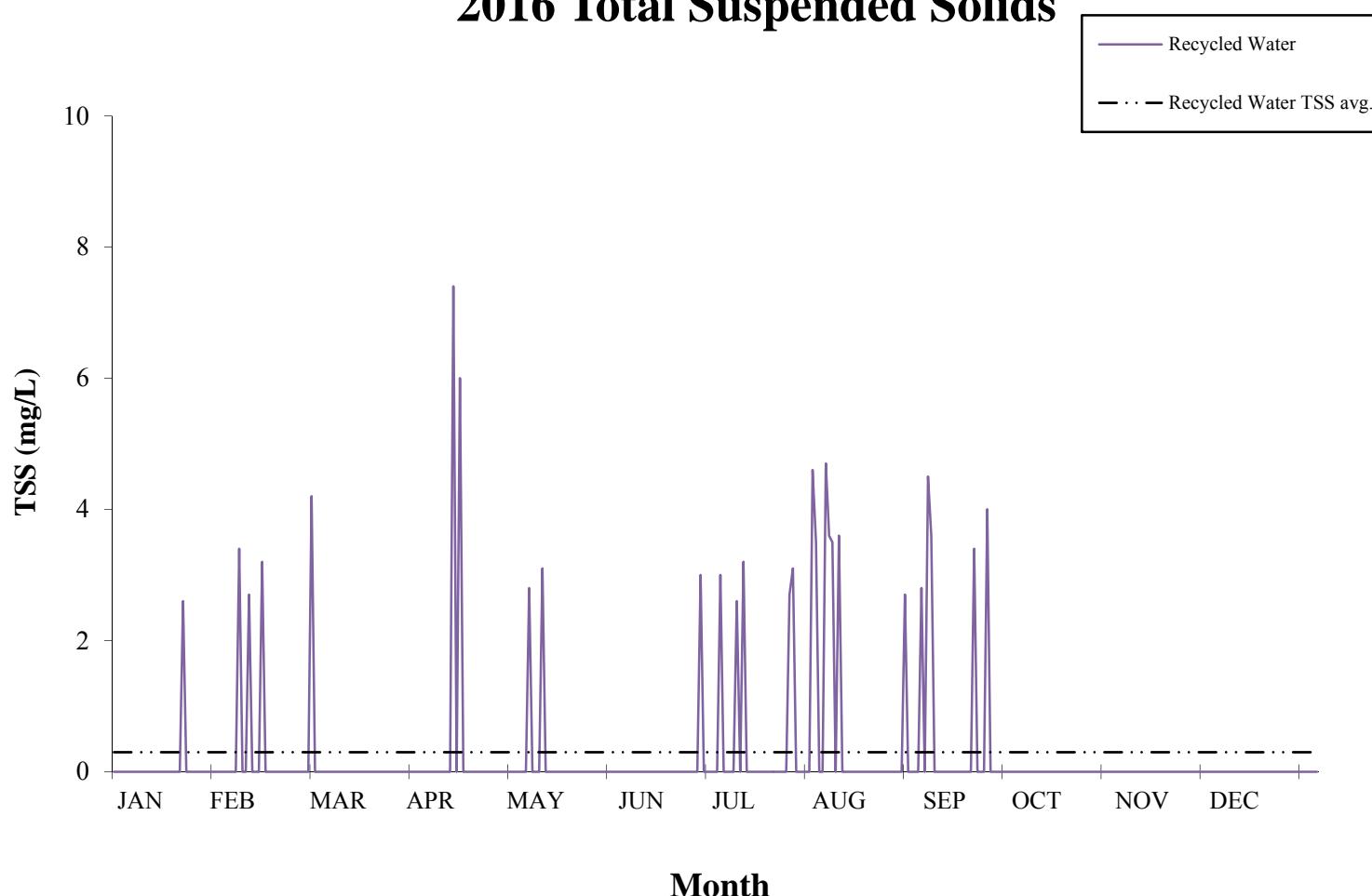


South Bay Wastewater Reclamation Plant
2016 Reclaimed Water Produced and Distributed Flows



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South Bay Wastewater Reclamation Plant 2016 Total Suspended Solids

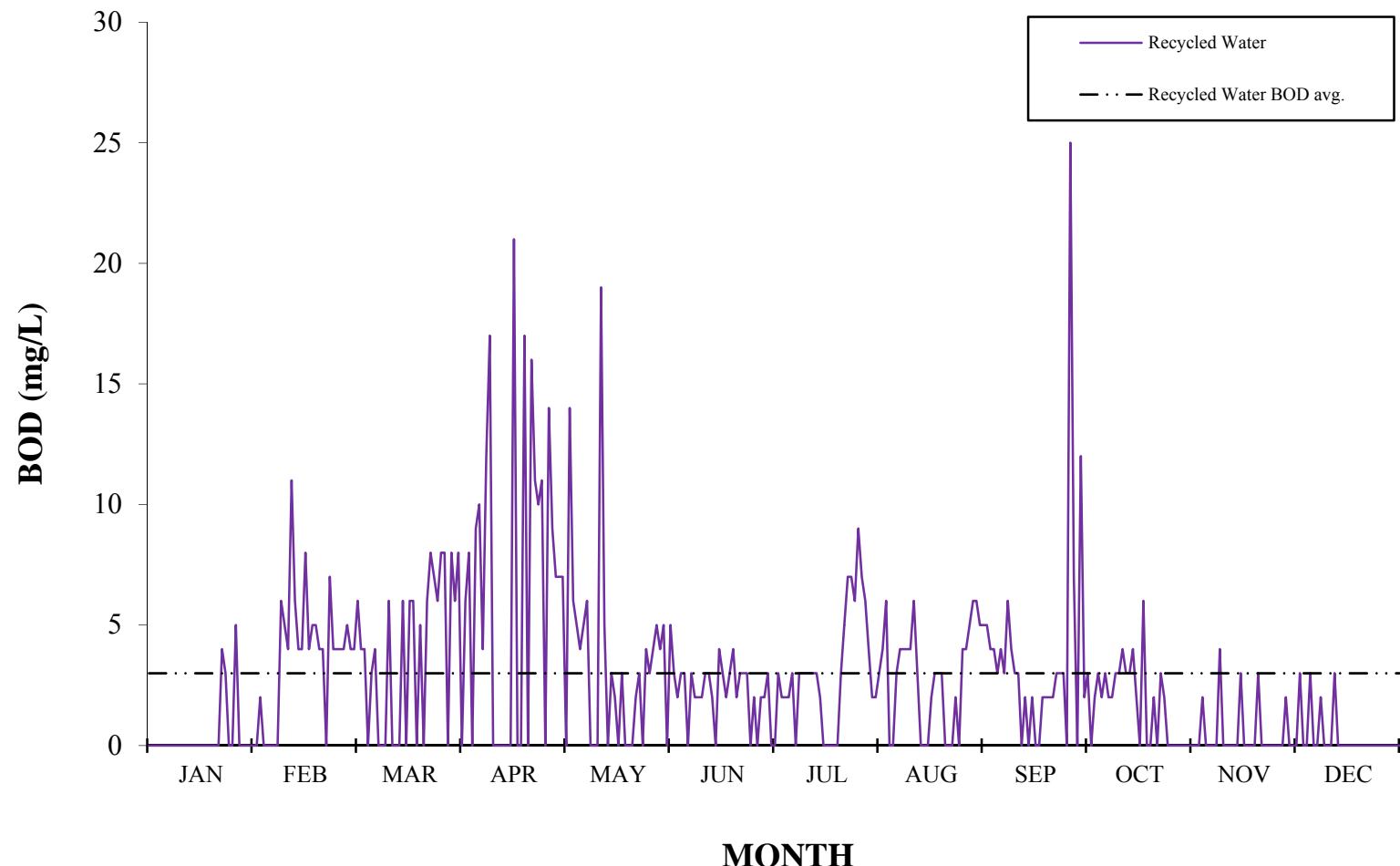


Daily Reclaimed Water TSS Values in 2016

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3.6*	ND*	4.2	ND	ND	ND	ND	3.5	ND	ND	ND	ND*
2	ND*	ND	2.8	ND	ND	ND*						
3	ND*	ND*	ND	ND*	ND	ND	3.0	ND	ND	ND	ND	ND
4	ND*	ND*	ND	ND	ND	ND	ND	4.7	4.5	ND	ND	ND*
5	ND*	ND*	ND	ND	ND	ND	ND	3.6	3.6	ND	ND	ND*
6	ND*	ND*	ND	ND	2.8	ND	ND	3.5	ND	ND	ND	ND
7	ND*	ND*	ND*	ND	ND*	ND						
8	ND*	3.4	ND*	ND	ND*	ND	2.6	3.6	ND	ND	ND	ND
9	ND*	ND	ND*	ND*	ND*	ND						
10	ND*	ND	ND	ND*	3.1	ND	3.2	ND	ND	ND	ND	ND
11	ND*	2.7	ND*	ND*	ND	ND*						
12	ND*	ND	ND*	ND*	ND	ND*	ND	ND	ND	ND	ND	ND
13	ND*	ND	ND*	7.4	ND							
14	ND*	ND	ND	ND*	ND							
15	ND*	3.2	ND*	6.0	ND							
16	ND*	ND	ND*									
17	ND*	ND	ND*									
18	ND*	ND	3.4	ND	ND	ND*						
19	ND*	ND	ND	ND*	ND							
20	ND*	ND	ND*	ND	ND*							
21	ND*	ND*	ND	ND*								
22	2.6	ND	ND	ND	ND*	ND	ND	ND	4.0	ND	ND*	ND*
23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*
24	ND*	ND	ND	ND*	ND	ND	2.7	ND	ND*	ND	ND*	ND*
25	ND*	ND	ND	ND	ND	ND	3.1	ND	ND	ND	ND	ND*
26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	ND*
27	ND*	ND	ND*	ND	ND	3.0	ND	ND	ND	ND	ND	ND*
28	ND*	ND	ND	ND	ND	ND	ND	2.7	ND	ND	ND*	ND
29	ND*	ND	ND	ND	ND*	ND	ND	ND	ND	ND	ND*	ND*
30	ND*		ND	ND*	ND	ND*						
31	ND*		ND*		ND		4.6	ND		ND	ND*	Annual Summary
Ave	0.9	0.4	0.2	0.6	0.2	0.1	0.6	0.7	0.6	0.0	0.0	0.3
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	2.6	3.4	4.2	7.4	3.1	3.0	4.6	4.7	4.5	0.0	0.0	7.4

*= No reclaimed water distributed or the quality control not met, not used in average.

South Bay Wastewater Reclamation Plant 2016 Biochemical Oxygen Demand



Daily Reclaimed Water BOD Values 2016

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	5*	ND*	6	6	14	2	2	5*	3	2	ND	ND
2	ND*	2	4	8	6	3	2	3*	4	3	ND	ND
3	ND*	ND*	4	2*	5	3	2	3	3	2	ND	2
4	ND*	ND*	ND	9	4	ND	3	4	6	2	4	ND*
5	2*	ND*	3	10	5	3	ND	4	4	3	ND	ND*
6	ND*	ND*	4	4	6	2	3	4	3	3	ND	ND
7	ND*	ND*	2*	12	ND*	2	3	4	3	4	ND	3
8	ND*	6	2*	17	3*	2	3	6	ND	3	ND	ND
9	ND*	5	4*	ND*	2*	3	3	3	2	3	ND	ND
10	ND*	4	6	ND*	19	3	3	ND	ND	4	3	ND
11	ND*	11	2*	ND*	5	2	3	ND	2	2	ND	ND*
12	ND*	6	3*	ND*	ND	ND*	2	ND	ND	ND	ND	ND
13	ND*	4	2*	ND	3	4	ND*	2	ND	6	ND	ND
14	ND*	4	6	36*	2	3	ND*	3	2	ND	ND	ND
15	ND*	8	6*	21	ND	2	ND	3	2	ND	3	ND
16	ND*	4	6	ND*	3	3	ND	3	2	2	ND	ND*
17	ND*	5	6	ND*	ND	4	ND	ND	2	ND	ND	ND*
18	ND*	5	8*	17	ND	2	3	ND	3	3	ND	4*
19	ND*	4	5	2*	ND	3	5	ND	3	2	ND	ND
20	ND*	4	5*	16	2	3	7	2	3	ND	ND	ND*
21	ND*	3*	6	11	3	3	7	ND	ND	ND	ND	ND*
22	4	7	8	10	3*	ND	6	4	25	ND	ND*	ND*
23	3	4	7	11	4	2	9	4	7	ND	2	ND*
24	ND*	4	6	ND*	3	ND*	7	5	ND	ND	2*	ND*
25	9*	4	8	14	4	2	6	6	12	ND	ND	ND*
26	5	4	8	9	5	2	4	6	2	ND	ND	ND*
27	ND*	5	2*	7	4	3	2	5	3	ND	3	ND*
28	2*	4	8	7	5	ND	2	5	ND	ND	ND*	2
29	ND*	4	6	7	ND*	ND	3	5	2	ND	ND*	ND*
30	ND*		8	2*	5	3	4	4	3	2	3	7*
31	ND*		ND*		3		6	4		ND	ND*	Annual Summary
Ave	4	5	6	10	4	2	3	3	3	1	1	1
Min	3	2	0	0	0	0	0	0	0	0	0	0
Max	5	11	8	21	19	4	9	6	25	6	4	25

*= No reclaimed water distributed or the quality control not met, not used in average.

E. Total Coliform Data Summaries

2016 Annual South Bay Water Reclamation Plant Total Coliform Report (MPN/100 ml)

2016 Annual South Bay Water Reclamation Plant Total Coliform Report (MPN/100 ml)

E. UV Performance 2016

UV PERFORMANCE REPORT

CY 2016

Monthly Averages

	UV TRANSMIT TANCE	UV DOSE	UV BANK #1 POWER	UV BANK #2 POWER	UV BANK #3 POWER	UV BANK #4 POWER
Month	pct	U	pct	pct	pct	pct
Jan 2016	62.13	178.88	22.45	32.68	35.03	35.03
Feb 2016	58.43	199.97	19.76	34.86	22.24	39.17
Mar 2016	59.06	186.68	37.71	43.29	40.03	44.77
Apr 2016	60.96	184.17	35.63	38.60	37.43	42.13
May 2016	60.22	187.56	40.03	41.68	43.77	46.77
Jun 2016	60.97	187.66	32.00	41.13	31.13	43.50
Jul 2016	60.53	190.79	30.29	43.71	32.45	46.10
Aug 2016	60.75	185.26	29.87	42.42	30.29	47.42
Sep 2016	65.15	188.29	15.63	33.60	18.27	37.03
Oct 2016	62.43	189.20	18.42	36.55	17.87	40.84
Nov 2016	66.50	188.58	29.03	37.00	23.93	34.13
Dec 2016	64.98	187.13	34.03	37.77	23.23	34.39
Average	61.84	187.85	28.74	38.61	29.64	40.94

VIII. Other Required Information.

- A. Notes on Specific Analysis
- B. Report of Operator Certification.

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A. Notes on Specific Analyses:

1. It should be noted that some of the reference methods are equivalent. The organic priority pollutant analyses listed in E.P.A.'s Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846 (ref. c) are equivalent to the methods E.P.A. prescribes for water in Methods for Chemical Analysis for Water and Wastes, (ref.a). Specifically wastewater methods 3510 and 8270 (ref.d) together are the same as the water method 625 (ref.a), and Method 8260B (ref. c) is equivalent to Method 624 (ref.a). Methods 3550 and 8270 together are equivalent to the E.P.A. Contract Laboratory Program's (ref. aa) method for ultrasonication and gas chromatograph-mass spectrographic analysis. The E.P.A.'s metals analyses for water (ref.a) generally just refers to the procedure in Standard Methods (ref. b, bb).

B. Report of Operator Certification.

Operator Certifications:

The following lists all Wastewater Treatment Plant Operators working for the Operating Units of the Public Utilities Department and their California State certification status as of May 2016. Name, Classification, Certification Grade, Certification Number, and expiration date are shown for each operator.

South Bay Wastewater Reclamation Plant

OPERATOR CERTIFICATIONS

NAME	CERTIFICATION GRADE	EXPIRATION
ERNESTO MOLAS	GRADE V 7227	12/31/2017
EILEEN MCNEIL	GRADE V 28965	4/29/2020
EDDY MATA	GRADE III 7027	7/13/2020
TERESA A. GARDNER	GRADE III 10657	12/31/2017
WILLIAM L. MERCADO	GRADE III 41838	9/23/2020
ALBERT J. JOHNSON	GRADE III 9638	6/30/2018
HERBERT A. DECATUR	GRADE III 28880	6/30/2020
NOEMI GONZALEZ-BUENO	GRADE III 41833	7/13/2020
DOUGLAS D. EVANS SR.	GRADE II 9844	6/30/2018
ROMEO C. MILLAN JR.	GRADE II 9846	6/30/2018
GABRIEL DURESSEAU	GRADE II 28294	6/30/2018

IX. Appendices

- A. Terms and Abbreviations used in this Report
- B. Methods of Analysis
- C. Frequency of Analysis and Type of Sample
- D. Laboratories Contributing Results used in this report
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A. Terms and Abbreviations used in this Report

Along with standard abbreviations the following is a list of local/uncommon abbreviations and terms for the readers' reference.

PLANT TERMS

U.S.EPA	- United States Environmental Protection Agency.
NPDES	- National Pollutant Discharge Elimination System.
WWTP	- Wastewater Treatment Plant.
WRP	- Water Reclamation Plant.
PLWTP or PLWWTP	- Pt. Loma Wastewater Treatment Plant
PLR	- Point Loma Raw (influent to the plant).
PLE	- Point Loma Effluent (effluent from the plant).
N-1-P	- North Digester Number 1, Primary, Pt. Loma
N-2-P	- North Digester Number 2, Primary, Pt. Loma
C-1-P	- Central Digester Number 1, Primary, Pt. Loma
C-2-P	- Central Digester Number 2, Primary, Pt. Loma
S-1-P	- South Digester Number 1, Primary, Pt. Loma
S-2-P	- South Digester Number 2, Primary, Pt. Loma
Dig 7	- Digester Number 7, Primary, Pt. Loma
Dig 8	- Digester Number 8, Primary, Pt. Loma
DIG COMP	- Digested Biosolids Composite; a composite of grabs taken from each of the in-service digesters.
RAW COMP	- A Composite of Raw Sludge taken over the preceding 24 hrs.
NCWRP	- North City Water Reclamation Plant
N01-PS_INF	- The plant primary Influent from Pump Station 64
N01-PEN	- The plant primary Influent from the Penasquitos pump station.
N30-DFE	- Disinfected Final Effluent
N34-REC WATER	- Reclaimed Water.
N10-PSP COMB	- raw sludge
N15-WAS LCP	- Waste Activated Sludge – low capacity pumps
SBOO	- South Bay Ocean Outfall or South Bay Outfall
SB_INF_02	- The plant Influent
SB_OUTFALL_01	- The plant discharge to ocean effluent
SB_ITP_COMB_EFF	-The plant discharge to ocean and International Waste Treatment Plant combined effluents
SB_PRI_EFF_01	- The plant primary Influent
SB_SEC_EFF_00	-The plant secondary Influent
SB_REC_WATER_34	- Reclaimed Water
SB_RSL_10	- The plant primary sedimentation tank to raw sludge line
MBC	- Metro Biosolids Center
MBCDEWCN	- Metro Biosolids Center Dewatering Centrifuges; typically the dewatered biosolids from these.
MBC_COMBCN	- MBC Combined Centrate; the centrate from all the dewatering centrifuges. (The return stream from MBC to the sewer system.)
MBC_NC_DSL	- North City to Metropolitan Biosolids Center (MBC) Digested Sludge Line.
Dig 1	- MBC Digester number 1.
Dig 2	- MBC Digester number 2.
Dig 3	- MBC Digester number 3.
Biosolids	- In most cases Biosolids and digested (a processed) Sludge is synonymous.
Field Replicate	- Separate samples collected at approximately the same time from the same sample site.

UNITS

mg/L milligrams per liter
ug/L micrograms per liter = 0.001 mg/L
ng/L nanograms per liter = 0.001 ug/L
mg/Kg..... milligrams per kilogram
ug/Kg..... micrograms per kilogram
ng/Kg..... nanograms per kilogram
pg/L picograms per liter
pg/Kg..... picograms per kilogram
pc/L or pCi/L.... pico curies per liter
TU toxicity units
ntu nephelometric turbidity units
°C degrees Celsius = degrees centigrade
MGD/mgd million gallons per day
umhos/cm. micromhos per centimeter
uS microsiemens = umhos
mils/100 mL millions per 100 milliliters
nd..... not detected
NA..... not analyzed (when in a data column)
NR..... not required
NS not sampled
LA lab accident

CHEMICAL TERMS & ABBREVIATIONS:

AA.....Atomic Absorption Spectroscopy
BOD Biochemical Oxygen Demand
CN⁻ Cyanide
COD Chemical Oxygen Demand
Cr⁶⁺ Hexavalent Chromium
D.O..... Dissolved Oxygen
DDD Dichlorodiphenyl dichloroethane
a.k.a. TDE-tetrachlorodiphenylethane
DDE Dichlorodiphenyl dichloroethylene
DDT Dichlorodiphenyl trichloroethane
FeCl₃ Ferric Chloride
G&O..... Grease and Oil
GC Gas chromatography.
GC-ECD.....-Electron Capture Detector.
GC-FID -Flame Ionization Detector.
GC-FPD -Flame Photometric Detector.
GC-MS -Mass Spectroscopy.
H₂S Hydrogen Sulfide
Hg..... Mercury
IC Ion Chromatography
Induct ICP-AES Inductively Coupled Plasma-
Atomic Emission Spectroscopy
MDL.....Method Detection Limit
MSD Mass Spectroscopy Detector
NH₃ Ammonia
NH₃-N Ammonia Nitrogen
NH₄⁺ Ammonium ion
NO₃⁻ Nitrate
PAD Pulsed Amperometric Detector
PCB Polychlorinated Biphenyls
PO₄³⁻ Phosphate
SO₄²⁻ Sulfate
SS Suspended Solids
TBT Tributyl tin
TCH Total Chlorinated Hydrocarbons
(i.e. chlorinated pesticides & PCB's)
TCLP.. Toxicity Characteristic Leaching Procedure
TDS Total Dissolved Solids
TQ Triple Quad
TS Total Solids
TVS Total Volatile Solids
VSS Volatile Suspended Solids

B. Methods of Analysis

WASTEWATER INFLUENT and EFFLUENT (General)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Alkalinity	Selected Endpoint Titration	Mettler DL-21 & 25 Titrator Orion 950	Mettler DL-21 & 25 Titrator Orion 950 Mettler DL-15	SM 2320 B-1997
Ammonia Nitrogen	Distillation and Titration	Buchi Distillation Unit K-314, B-324, K-350 Orion 950 pH Meter Mettler DL25 titrator	Buchi Distillation Unit K-314, B-324, K-350 Orion 950 pH Meter Mettler DL25 titrator Mettler DL15 titrator Orion 250A	SM 4500-NH3 B,C-1997
Biochemical Oxygen Demand (BOD-5 Day)	Dissolved Oxygen Meter with Dissolved Oxygen Probe	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe)	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe)	SM 5210 B-2001
Biochemical Oxygen Demand (BOD-Soluble)	Dissolved Oxygen Probe	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe)	YSI-5000 DO Meter YSI-5100 DO Meter YSI 59 DO Meter (5905 Probe)	SM 5210 B-2001
Chemical Oxygen Demand (COD)	Closed Reflux / Colorimetric	Hach DR-2010 UV/Vis spectrophotometer	Hach DR-2010 UV/Vis spectrophotometer Hach DR2700	HACH 8000
Conductivity	Conductivity Meter with Wheatstone Bridge probe	YSI-3100, YSI-3200, Orion 115A, Orion 250, Accumet Model 150	YSI-3100, YSI-3200, Orion 115A, Orion 250, Accumet Model 150	SM 2510 B-1997
Cyanide	Acid Digest/Distil./Colorimetric	Hach DR-4000/Vis	Hach DR-4000/Vis	SM 4500-CN E-1999 & SM 4500-CN B or C-1999
Floating Particulates	Flotation Funnel	Mettler AX-105 Mettler AG 204 Balance	Various models of balances.	SM 2530 B
Flow	Continuous Meter	Gould (pressure sensor), ADS (sonic sensor), or Venturi (velocity sensor)	Gould (pressure sensor), ADS (sonic sensor), or Venturi (velocity sensor)	
Hardness; Ca, Mg, Total	ICP-AES / Calculation	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7, Rev. 4.4 (1994) & SM 2340 B-1997
Kjeldahl Nitrogen (TKN)	Macro-Digestion / Titration	Velp scientificA Buchi K-314 distiller & Orion 950 pH meter	Velp scientificA Buchi K-314 distiller & Orion 950 pH meter	SM-4500-Norg B-1997
Oil and Grease	Hexane Extraction / Gravimetric	Mettler AX-105 Balance	Various models of balances.	EPA 1664A
Organic Carbon (TOC)	Catalytic Oxidation / IR Water Production Laboratory)	Shimadzu ASI-5000	Shimadzu ASI-5000	5310 B (Water Production Laboratory)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
pH	Hydrogen+Reference Electrode	Various models of pH meters.	Various models of pH meters.	SM 4500-H+\ B-2000
Radiation (alpha & beta)	Alpha Spectroscopy Gamma Spectroscopy	External Laboratory (TestAmerica)	External Laboratory (FGL)	EPA 900 (External Laboratory)
Solids, Dissolved-Total	Gravimetric @ 180°C using analytical balance	Mettler AG204,AX105,AB204	Various models of balances.	SM 2540 C-1997
Solids, Settleable	Volumetric	Imhoff Cone	Imhoff Cone	SM 2540 F-1997
Solids, Suspended-Total	Gravimetric @ 103-105°C	Mettler AG204,AX105,AB204	Various models of balances.	SM 2540 D-1997
Solids, Suspended-Volatile	Gravimetric @ 500°C	Mettler AG204,AX105,AB204	Various models of balances.	SM 2540 E-1997
Solids, Total	Gravimetric @ 103-105°C	Mettler AG204,AX105,AB204	Various models of balances.	SM 2540 B-1997
Solids, Total-Volatile	Gravimetric @ 500°C	Mettler AG204,AX105,AB204	Various models of balances.	EPA 160.4 (Issued 1971)
Temperature	Direct Reading	Fisher Digital Thermometer	Fisher Digital Thermometer	SM 2550 B-2000
Turbidity	Nephelometer Turbidimeter	Hach 2100-N Meter Hach 2100-AN Meter	Hach 2100-N Meter Hach 2100-AN Meter	SM 2130B-2001
Bromide, Chloride, Fluoride, Nitrate, Phosphate, Sulfate	Ion Chromatography	Dionex ICS-3000	Dionex ICS-3000	EPA 300.0, Rev 2.1 (1993)

WASTEWATER INFLUENT and EFFLUENT (Metals)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Aluminum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Antimony	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Arsenic	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	SM 3114 B-2009 & SM 3114 C-2009
Barium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Beryllium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Boron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Cadmium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Calcium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Chromium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Cobalt	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Copper	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Iron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Lead	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Lithium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Magnesium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Manganese	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Mercury	Cold vapor atomic fluorescence spectroscopy (CVAF)	Leeman Hydra Gold(CVAA) & Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	PSAnalytical PSA 10.035 Millennium Merlin 1631	EPA 1631E
Molybdenum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Nickel	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Potassium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Selenium	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	SM 3114 C-2009 & SM 3114 B-2009
Silver	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Sodium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Thallium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Vanadium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)
Zinc	Acid Digestion / ICP-AES	IRIS INTREPID DUO	ICAP 6000	EPA 200.7 Rev. 4.4 (1994)

WASTEWATER INFLUENT and EFFLUENT (Organics)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Acrolein and Acrylonitrile	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260 B
Base/Neutral Extractables	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	HP-6890GC / 5973MSD Capillary DB-5.625	EPA 625
Benzidines	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	HP-6890GC / 5973MSD Capillary DB-5.625	EPA 625
Chlorinated Compounds	Methylene Chloride extraction, GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 608
Dioxin	Outside Contract (Frontier)	External Laboratory (Frontier & TestAmerica)	External Laboratory (Frontier & TestAmerica)	EPA 1613 (external laboratory)
Organophosphorus Pesticides	Methylene Chloride 15% / Hexane 85% extraction, GC-PFPD	Varian 3800 GC-PFPD RTX-1 RTX-50	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	EPA 614
Phenolic Compounds	Acidic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	HP-6890GC / 5973MSD Capillary DB-5.625	EPA 625
Purgeables (VOCs)	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260 B
Tri, Di, and Monobutyl Tin	Methylene Chloride extraction, derivatization, hexane exchange, GC-PFPD & GC-FPD	Varian 3400 GC-FPD DB-608/30m DB-1/30m	Varian 3400 GC-FPD DB-608/30m DB-1/30m & Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	In house method

LIQUID SLUDGE: Raw, Digested, and Filtrate (General)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Alkalinity	Selected Endpoint Titration	Mettler DL-25 Titrator Orion 950	Mettler 25 Titrator Orion 950	SM 2320 B-1997
Cyanide	Acid Digest-Distil / Colorimetric	Hach DR/4000V	Hach DR/4000V	EPA 9014 & EPA 9010B (Distillation)
pH	Hydrogen+Reference Electrode	Various models of pH meters.	Various models of pH meters.	SM 4500-H\+\ B-2000
Radiation (alpha & beta)	Alpha Spectroscopy Gamma Spectroscopy	External Laboratory (TestAmerica)	External Laboratory (FGL)	External Laboratory
Sulfides	Acid Digest-Distil / Titration	Class A Manual Buret	Class A Manual Buret	EPA 9034 & EPA 9030B (Distillation)
Sulfides, reactive	Distillation / Titration	Class A Manual Buret	Class A Manual Buret	Section 7.3 SW-846 EPA 9034
Solids, Total	Gravimetric @ 103-105°C	Mettler PB 4002-S Mettler PG 5002-S Mettler AB204	Various models of balances.	SM 2540G 1997
Solids, Total-Volatile	Gravimetric @ 500°C	Mettler PB 4002-S Mettler PG 5002-S Mettler AB204	Various models of balances.	SM 2540G 1997

LIQUID SLUDGE: Raw, Digested, and Filtrate (Metals)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Aluminum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Antimony	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Arsenic	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7062
Beryllium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Barium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Boron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Cadmium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Chromium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Cobalt	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Copper	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Iron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Lead	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Manganese	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Mercury	Cold Vapor Atomic Absorption (CVAA) & backup method Thermal decomposition atomic absorption	Leeman Hydra Gold (CVAA) & Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	PSAnalytical PSA 10.045 Millennium Backup: Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	EPA 7471A and Backup: EPA 7473
Molybdenum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Nickel	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Selenium	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7742
Silver	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Thallium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Vanadium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Zinc	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B

LIQUID SLUDGE: Raw, Digested, and Decant (Organics)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Acrolein and Acrylonitrile	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B
Base/Neutral Extractables	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	HP-6890GC / 5973MSD Capillary DB-5.625	EPA 625
Benzidines	Basic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	HP-6890GC / 5973MSD Capillary DB-5.625	EPA 625
Chlorinated Compounds	Methylene Chloride extraction, GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8081A
PCBs	Methylene Chloride extraction, GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8082
Dioxin	Outside Contract (Frontier)	External Laboratory (Frontier & TestAmerica)	External Laboratory (Frontier & TestAmerica)	EPA 8290 (External Laboratory)
Organophosphorus Pesticides	Methylene Chloride 15% / Hexane 85% extraction, GC-PFPD	Varian 3800 GC-PFPD RTX-1 RTX-50	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	EPA 614
Phenolic Compounds	Acidic / Methylene Chloride continuous extraction, GC-MSD	HP-6890GC / 5973MSD Capillary DB-5.625	HP-6890GC / 5973MSD Capillary DB-5.625	EPA 625
Purgeables (VOCs)	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B
Tri, Di, and Monobutyl Tin	Methylene Chloride extraction, derivatization, hexane exchange, GC-PFPD & GC-FPD	Varian 3400 GC-FPD DB-608/30m DB-1/30m	Varian 3400 GC-FPD DB-608/30m DB-1/30m & Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	In house method

LIQUID SLUDGE: Raw, Digested, and Decant (Digester Gases)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Methane	Gas Chromatography	SRI 8610C GC EG&G 100AGC	SRI 8610C GC EG&G 100AGC	In house method (Based on 2720C)
Carbon Dioxide	Gas Chromatography	SRI 8610C GC EG&G 100AGC	SRI 8610C GC EG&G 100AGC	In house method (Based on 2720C)
Hydrogen Sulfide	Colorimetric	Drager H ₂ S	Drager H ₂ S	Commercial Tubes

DRIED SLUDGE: Metro Biosolids Center (General)

Analyte	Description 2016	Instrument 2015	Instrumentation 2016	Method 2016
Cyanide	Acid Digest-Distillation Colorimetric	Hach DR/4000V UV/Vis	Hach DR/4000V UV/Vis	EPA 9014 & EPA 9010B (Distillation)
Cyanide Reactive	Distillation / Colorimetric	Hach DR/4000V UV/Vis	Hach DR/4000V UV/Vis	EPA SW-846 Chapter 7.3 & EPA 9014
pH	Hydrogen+Reference Electrode	Various models of pH meters	Various models of pH meters	EPA 9045C
Radiation (alpha & beta)	Alpha Spectroscopy Gamma Spectroscopy	External Laboratory (TestAmerica)	External Laboratory (FGL)	External Laboratory
Sulfides	Acid Digest-Distil / Titration	Class A Manual Buret	Class A Manual Buret	EPA 9034 & EPA 9030B (Distillation)
Sulfides, reactive	Distillation / Titration	Class A Manual Buret	Class A Manual Buret	Section 7.3 SW-846 EPA 9034
Solids, Total	Gravimetric @ 103-105 C°	Various models balances	Various models balances	SM 2540G 1997
Solids, Total-Volatile	Gravimetric @ 500 C°	Various models balances	Various models balances	SM 2540G 1997

Waste Extraction Test (WET)	Extraction with Sodium Citrate ICP-AES	Burrel wrist action shaker TJA IRIS	(j) Section 66261.100
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DRIED SLUDGE: Metro Biosolids Center (Metals)

DRIED SLUDGE: Metro Biosolids Center (Organics)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Aluminum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Antimony	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Arsenic	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7062
Barium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Beryllium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Boron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Cadmium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Chromium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Cobalt	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Copper	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Iron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Lead	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Manganese	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Mercury	Cold Vapor Atomic Absorption (CVAA) & Thermal decomposition atomic absorption	Leeman PS Hydra Gold & Milestone DMA80	PSAnalytical PSA 10.045 Millennium & Milestone DMA80 (thermal decomposition, amalgamation, and atomic absorption spectrophotometry)	EPA 7471A & EPA 7473 Methods 7471A for California & 7473 for Arizona
Molybdenum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Nickel	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Selenium	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7742
Silver	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Thallium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Vanadium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Zinc	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B

Analyte	Description 2016	Instrumentation 2015	Instrument 2016	Method 2016
Acrolein and Acrylonitrile	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B
Base/Neutral Extractable	Methylene Chloride 50% / Acetone 50% Sonication Extraction GC-MSD	Agilent-7890GC / 5975MSD Capillary DB-5.625	Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C EPA 3550A
Chlorinated Compounds	Methylene Chloride 50% / Acetone 50% Sonication Extraction, Hexane exchange GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8081A
PCBs	Methylene Chloride 50% / Acetone 50% Sonication Extraction, Hexane exchange GC-ECD	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	Perkin Elmer Clarus 680 Elite-CLP 30M/0.32mm/0.5um Elite-CLP2 30M/0.32mm/0.25um	EPA 8082
Dioxin	Outside Contract (Frontier)	External Laboratory (Frontier & TestAmerica)	External Laboratory (Frontier & TestAmerica)	EPA 8290 External Laboratory
Organophosphorus Pesticides	Methylene Chloride 50% / Acetone 50% Sonication Extraction, hexane exchange, GC-PFPD	Varian 3800 GC-PFPD RTX-1 RTX-50	Shimadzu GC-2010 PFPD RTX-OPP 30m/0.32mm/0.5um RTX-OPP2 30m/0.32mm/0.32um	EPA 8141A
Phenolic Compounds	Methylene Chloride 50% / Acetone 50% Sonication Extraction GC-MSD	Agilent-7890GC/5975 MSD Capillary DB-5.625	Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C EPA 3550A
Purgeables (VOCs)	Purge & Trap, GC-MSD	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	O-I Analytical Eclipse 4660purge&trap/4552autosampler Agilent-6890N GC /5973N MSD Capillary J&W DB-624	EPA 8260B

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Tri, Di, and Monobutyl Tin	Hexane extraction, derivatization, GC-PFPD	Varian 3400 GC-FPD DB-608/30m DB-1/30m	Varian 3400 GC-FPD DB-608/30m DB-1/30m & Shimadzu GC-2010PFPD RTX-1 30m/0.25mm/1um RTX-5 30m/0.25mm/1um	In house method
Total Nitrogen (TN)	Combustion / GC-TCD (part of year 2016) & Since May 2016 Calculation Sum all Nitrogen (TKN, NO ₂ , NO ₃)	Carlo-Erba NC-2500 Porapak QS	Carlo-Erba NC-2500 Porapak QS & Calculation: Sum all Nitrogen (TKN, NO ₂ , NO ₃)	Calculation Sum all Nitrogen (TKN, NO ₂ , NO ₃)

OCEAN SEDIMENT (General)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Biochemical Oxygen Demand (BOD-5 Day)	Dissolved Oxygen Probe	YSI-5000 DO Meter	YSI-5000 DO Meter	SM 5210 B-2001
Particle Size	Coarse fraction by sieve; fine fraction by laser scatter	Horiba Partica LA-950V2	Horiba Partica LA-950V2	EPA/CE-81-1
Sulfides	Acid Digest-Distil / IC-PAD	Dionex ICS3000-PAD(Ag)	Dionex ICS3000-PAD(Ag)	DIONEX AU 107 & EPA 9030B Distillation
Solids, Total	Gravimetric @ 103-105 C°	Various balances	Various balances	SM 2540 G
Solids, Total-Volatile	Gravimetric @ 500 C°	Various balances	Various balances	SM 2540 G
Total Organic Carbon (TOC) and Total Nitrogen (TN)	Combustion / GC-TCD	Carlo-Erba NC-2500 Porapak QS	Carlo-Erba NC-2500 Porapak QS & FLASH 2000	In house method based on "TOC/TN in Marine Sediments...", SCCWRP Annual Report, 1990-1991, and 1991-1992 & EPA 9060

OCEAN SEDIMENT (Metals)

Analyte	Description 2016	Instrumentation 2015	Instrument 2016	Method 2016
Aluminum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Antimony	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Arsenic	Hydride Generation / AA, ICP-AES	Thermo iCE 3000	Thermo iCE 3000, IRIS INTREPID DUO & ICAP 6000	EPA 7062 & EPA 6010B
Beryllium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Cadmium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Chromium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Copper	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Iron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Lead	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Manganese	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Mercury	Thermal decomposition atomic absorption	Milestone DMA80	Milestone DMA80	EPA 7473
Nickel	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Selenium	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7742
Silver	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Thallium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Tin	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B
Zinc	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 6010B

OCEAN SEDIMENT (Organics)

Analyte	Description	Instrumentation 2015	Instrumentation 2016	Method 2016
Base/Neutral Extractables	Methylene Chloride 50% / Acetone 50% Accelerated Solvent (ASE) Extraction GC-MSD	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C / EPA 3545A
Chlorinated Compounds	Methylene Chloride 50% / Hexane 50% extraction, Accelerated Solvent Extraction GC-MS/MS	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	EPA 8081A / EPA 3545A
PCBs as Congeners	Methylene Chloride 50% / Hexane 50% extraction, Accelerated Solvent (ASE) Extraction GC-MS/MS	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	Dionex ASE-350 Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	EPA 8082 / EPA 3545A

FISH TISSUE: Liver, Muscle, and Whole (General)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Solids, Total	Freeze Drying Gravimetric	Labconco Freezone 6 Various balances	Labconco Freezone 6 Various balances	"A Guide to Freeze Drying for the Laboratory... ", LABCONCO, 3-53-5/94-Rosse-5M-R3, 1994
Lipids	Hexane/Acetone Extraction Gravimetric	Dionex ASE-350 Various balances	Dionex ASE-350 Various balances	In house method

FISH TISSUE: Liver, Muscle, and Whole (Metals)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Aluminum	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Antimony	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Arsenic	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Beryllium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Cadmium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Chromium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Copper	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Iron	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Lead	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Manganese	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Mercury	Thermal decomposition, amalgamation, and atomic absorption spectrophotometry	Milestone DMA80	Milestone DMA80	EPA 7473
Nickel	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Selenium	Hydride Generation / AA	Thermo iCE 3000	Thermo iCE 3000	EPA 7742
Silver	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Thallium	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Tin	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3
Zinc	Acid Digestion / ICP-AES	IRIS INTREPID DUO	IRIS INTREPID DUO & ICAP 6000	EPA 200.7 / EPA 200.3

FISH TISSUE: Liver, Muscle, and Whole (Organics)

Analyte	Description 2016	Instrumentation 2015	Instrumentation 2016	Method 2016
Base/Neutral Extractable	Basic / Methylene Chloride ASE extraction, GC-MSD	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	Dionex ASE-350 Agilent-7890GC/5975 MSD Capillary DB-5.625	EPA 8270C / 3545A
Chlorinated Compounds	Methylene Chloride 50% / Hexane 50% extraction, exchange, GC- MS/MS	Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	Bruker 450-GC Bruker 300MS DB-XLB/60m	EPA 8081A / EPA 3545A
PCBs	Methylene Chloride 50% / Hexane 50% extraction, hexane exchange, GC- MS/MS	Varian 3800 GC Saturn 2000 MS-Ion Trap DB-XLB/60m	Bruker 450-GC Bruker 300MS DB-XLB/60m	EPA 8082 / EPA 3545A

Method References: Methods of Analysis Used to Produce the Data Presented in this Report.

- a) Methods for Chemical Analysis of Water and Wastes,
EPA, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio,
March 1979 (EPA-600/4-79-020), 1983 Revision, and March 1984 (EPA-600/4-84-017).
- b) U.S. EPA Contract Laboratory Program, Statement of Work for Organic Analysis,
Multi-Media, Multi-Concentration, 7/85 revision and 1/91 revision.
- c) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,
U.S. EPA Office of Solid Waste and emergency Response,
Washington, D.C. 20460, November 1986, SW-846, Third Edition.
Revision 0 September 1994, December 1996, Revision 2
- d) The Determination of Inorganic Anions in Water by Ion Chromatography,
Revision 2.1, August 1993
- e) The Determination of Metals and Trace Elements in Water and Waste
Revision 4.4, EMMC Version, EMMC Methods Work Group, 1994
- f) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 17th Edition, 1989.
- g) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 18th Edition, 1992.
- h) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 19th Edition, 1995.
- i) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 20th Edition, 1998.
- j) Criteria for Identification of Hazardous and Extremely Hazardous Wastes,
California Code of Regulations (CCR), Title 22.
- k) DIONEX AU 107, R.D.Rocklin and E.L.Johnson, ANAL. CHEM., 1986, 55, 4
- l) Adaptation of method by the Naval Ocean Systems Center, San Diego, Marine Environment Branch, San Diego, CA 92152-5000
- m) "TOC/TN in Marine Sediments...", SCCWRP Annual Report, 1990-1991, and 1991-1992.
- n) "A Guide to Freeze Drying for the Laboratory...", LABCONCO, 3-53-5/94-Rosse-5M-R3, 1994.
- o) "Lipids Content in Fish Tissues via Accelerated Solvent Extraction...", WWChem, EMTS/MWWD, 1998
- p) Standard Methods for the Examination of Water and Wastewater,
APHA, AWWA, WPCF, 22th Edition, 2012.
- v) Procedures for Handling and Chemical Analysis of Sediment and Water Samples,
Russel H. Plumb, Jr., May 1981, EPA/Corp of Engineers Technical Committee on
Criteria for Dredged and Fill Material, EPA Contract 4805572010.
- w) Method 1631, Revision E;
Mercury in water by oxidation, purge and trap, and cold vapor atomic fluorescence spectrometry
- y) Method 245.7
Mercury in Water by Cold Vapor Atomic Fluorescend Spectrometry, Revision 2.0, February 2005

C. Frequency of Analysis and Type of Sample - 2016

1. Definitions.

D= 1/Day

W= 1/Week

M= 1/Month

Q= 1/Quarter

S= Semi-Annual

Constituent	Type of Sample	FREQUENCY OF ANALYSIS			
		Influent	Effluent	Comb_Effluent	Reclaim
Permit Required Testing					
Flow	Recorder/Totalizer	Continuous	Continuous		Continuous
Biochemical Oxygen Demand -Total (5-day)	24hr Composite	D	D	Q	D
Oil and Grease	Grab		W	Q	
pH	Grab		D	Q	D
Settleable Solids	Grab		W	Q	
Temperature			W	Q	
Total Suspended Solids	24hr Composite	D	D	Q	D
Volatile Suspended Solids	24hr Composite				D
Total Dissolved Solids	24hr Composite				M
Turbidity	24hr Composite		W	Q	W
Dissolved Oxygen	Grab		W	Q	
Total Residual Chlorine	Grab		W	Q	
As,Cd,Cr,Cu,Pb,Hg,Ni,Ag,Zn	24hr Composite	M	M	Q	
Sb, Be, Tl	24hr Composite		M	Q	
Se	24hr Composite		M	Q	
Fe, Mn, B					M
Anions (Chloride, Sulfate, Nitrate as N, Fluoride)	24hr Composite				M
Ammonia-Nitrogen	24hr Composite		M	Q	
MBAS	24hr Composite				M
Cyanide	24hr Composite	M	M	Q	
Acrolein and Acrylonitrile	Grab		Q	Q	
Base/Neutral Compounds	24hr Composite		Q	Q	
Benzidines	24hr Composite		Q	Q	
Dioxin	24hr Composite		M	Q	
Percent Sodium	24hr Composite				M
Pesticides, chlorinated	24hr Composite		M	Q	
Phenols, non-chlorinated	24hr Composite		M	Q	
Phenols, chlorinated	24hr Composite		M	Q	
Polychlorinated Biphenyls	24hr Composite		Q	Q	
Purgeable (Volatile) Compounds	Grab		Q	Q	
Tri, Di, & monobutyl tins	24hr Composite		Q	Q	
Radiation	24hr Composite		M	Q	
Toxicity (Acute & Chronic)*	24hr Composite		W	Q	

*Reported monthly in the Toxicity Testing Report by the Biology Section.

D= Daily

W= Weekly

M= Monthly

Q= Quarterly

S= Semi-Annual

Constituent	<i>Type of Sample</i>	FREQUENCY OF ANALYSIS			
		<i>Influent</i>	<i>Effluent</i>	<i>Comb_Effluent</i>	<i>Reclaim</i>
<i>Additional Testing</i>					
Total Dissolved Solids	24hr Composite	D			
Volatile Suspended Solids	24hr Composite	D			
Pesticides, organophosphorus	24hr Composite	S	S	S	S
Cations (Ca ²⁺ , Mg ²⁺ , Li ⁺ , Na ⁺ , K ⁺)	24hr Composite	M	M	Q	M
Anions	24hr Composite	M	M	Q	
Fe	24hr Composite	M	M	Q	
Oil and Grease	Grab	Q			Q
pH	Grab	D			
Settleable Solids	Grab	Q			
MBAS	24hr Composite	Q	Q	Q	
Turbidity	24hr Composite	Q			Continuos
Sb, Be, Tl	24hr Composite	M			M
Se	24hr Composite	M			M
Ammonia-Nitrogen	24hr Composite	Q			Q
Cyanide	24hr Composite				Q
Acrolein and Acrylonitrile	Grab	Q			Q
Base/Neutral Compounds	24hr Composite	Q			Q
Benzidines	24hr Composite	Q			Q
Dioxin	24hr Composite	M			Q
Pesticides, chlorinated	24hr Composite	Q			Q
Phenols, non-chlorinated	24hr Composite	Q			Q
Phenols, chlorinated	24hr Composite	Q			Q
Polychlorinated Biphenyls	24hr Composite	Q			Q
Tri, Di, & monobutyl tins	24hr Composite	Q			Q
Percent Sodium	24hr Composite		M	Q	
Purgeable (Volatile) Compounds	Grab	Q			Q
Radiation	24hr Composite	M			Q

D. Laboratories Contributing Results used in this report.

- i) Metropolitan Wastewater Chemistry Laboratory
(EPA Lab Code: CA00380, ELAP Certificate:
1609)
5530 Kiowa Drive
La Mesa, CA 91942
(619)668-3212
All results except those listed below.
- ii) Point Loma Wastewater Chemistry Laboratory
(EPA Lab Code: CA01435, ELAP Certificate:
2474)
1902 Gatchell Road
San Diego, CA 92106
(619)221-8765
*Process control analyses and wet methods
for the plant.*
- iii) North City Wastewater Chemistry Laboratory
(EPA Lab Code: CA01436,
ELAP Certificate: 2477)
4949 Eastgate Mall
San Diego, CA 92121
(858)824-6009
*Process control analyses and wet methods
for the plant.*
- iv) Metro Biosolids Center Chemistry Laboratory
(EPA Lab Code: CA01437, ELAP Certificate:
2478)
5240 Convoy Street
San Diego, CA 92111
(858)614-5834
*Process control analyses and wet methods
for the plant.*
- v) South Bay Water Reclamation Plant
(EPA Lab Code: CA01460, ELAP Certificate:
2539)
2411 Dairy Mart Road
San Diego, CA 92173
619.428.7349
*Process control analyses and wet methods
for the plant.*
- vi) City of San Diego - Water Quality Laboratory
(EPA Lab Code: CA00080, ELAP Certificate:
1058)
5530 Kiowa Drive
La Mesa, CA 91942
(619)668-3237
Total Organic Carbon in Wastewater
- vii) City of San Diego - Marine Microbiology and
Vector Management
- viii) City of San Diego – Toxicity Bioassay
Laboratory
(EPA Lab Code: CA01302, ELAP Certificate:
1989)
4918 Harbor Drive, Suite 101
San Diego, CA 92106
(619) 758-2311
Microbiology
- ix) Frontier Analytical Laboratory
5172 Hillsdale Circle
El Dorado Hills, CA 95762
ELAP Certification: 02113CA
Telephone# (916) 934-0900
Dioxins/Furans
- x) Test America
2800 George Washington Way
Richland, WA 99354-1613
CA ELAP Certification: 2425
Telephone# (509) 375-3131
Gross Alpha/Beta Radioactivity

Summary and Overview:

The Environmental Chemistry Services (ECS) Section of the Environmental Monitoring and Technical Services (EMTS) Division, Public Utilities Department, performs most of the NPDES and other permit analytical and reporting functions, as well as process control chemical and physical testing for the City of San Diego's E.W. Bloom Point Loma Wastewater Treatment Plant (PLWWTP), North City Water Reclamation Plant (NCWRP), South Bay Water Reclamation Plant (SBWRP), and the Metro Biosolids Center (MBC). The ECS laboratory staff also performs the chemical/physical testing of ocean sediment and fish tissue samples in support of the Ocean Monitoring Program for the City of San Diego's PLWWTP Ocean Outfall and SBWRP Ocean Outfall and the International Boundary and Water Commission's International Treatment Plant outfall. Additionally, laboratory staff provides environmental testing services to various customers, both internal to the City of San Diego and to other external agencies.

The QA/QC activities of the Laboratory are comprehensive and extensive. Of the 47,399 samples received in the Laboratory in 2016, approximately 40.1% were Quality Control (QC) samples, such as blanks, check samples, and standard reference materials. A total of 136 different analyses were performed throughout the year resulting in 354,066 analytical determinations that consist of 158,162 (~44.7%) QC determinations (e.g. blanks, laboratory replicates, matrix spikes, surrogates, etc.) used to determine the accuracy, precision, and performance of each analysis and batch.

There are five (5) separate laboratory facility locations, each is independently certified by the California ELAP (Environmental Laboratory Accreditation Program) for the fields of testing required under California regulations, and one of these laboratories also owns a certification for fields of testing under the Arizona Department of Health Services (ADHS). Copies of these certifications are included as Attachment 1. These are rigorous programs involving continuing independent blind performance testing, biannual comprehensive audits, and extensive documentation requirements. California ELAP and Arizona DHS certify fields of testing for Water, Wastewater, and Hazardous Materials with methods published in the Federal Register, or specifically approved in regulation by the United States Environmental Protection Agency (USEPA). Additionally, the Laboratory performs analyses using methods for which certification does not exist, such as ocean sediment and sea water determinations. These methods have been developed in-house, derived from, or in collaboration with other scientific laboratories (e.g. Scripps Institute of Oceanography, Southern California Coastal Water Research Project, et. al.) and have been used extensively in multi-agency EPA and State sponsored studies over the past several years. Methods of analysis developed for matrices and applications not within ELAP jurisdiction have been adapted from ELAP listed methods to which we apply generally accepted standards of performance and quality control.

Furthermore, the Treatment & Disposal Division and all Public Utilities Department Laboratories maintained International Standards Organization (ISO) 14001 Environmental Management Systems certification. Contract laboratories are also required to use only approved methods for which they hold certification, and/or are approved by the appropriate regulatory agency (e.g. San Diego RWQCB). Copies of their certifications are included as Attachment 2.

The following report summarizes the QA/QC activities during 2016 and documents the laboratory information and certifications for those laboratories which provided data used in NPDES and other permit monitoring or environmental testing during the year.

Laboratories Contributing Results used in this report.

Laboratory Name	EPA Lab Code	ADHS Cert#	ELAP Cert.#	Address	Phone #	Contribution
Alvarado Environmental* Chemistry Laboratory	CA00380	AZ0783*	ELAP 1609	5530 Kiowa Drive L Mesa, CA 91942	(619)668-3212	All results except those listed below.
Pt. Loma Wastewater Chemistry Laboratory	CA01435		2474	1902 Gatchell Road San Diego, CA 92106	(619)221-8765	Process Control analyses and wet methods for the treatment plant.
North City Wastewater Chemistry Laboratory	CA01436		2477	4949 Eastgate Mall San Diego, CA 92121	(858)824-6009	Process Control analyses and wet methods for the treatment plant.
Metro Biosolids Center Chemistry Laboratory	CA01437		2478	5240 Convoy Street San Diego, CA 92111	(858)614-5834	Process Control analyses and wet methods for the treatment plant.
South Bay Wastewater Chemistry Laboratory	CA00080		2539	2411 Dairy Mart Road San Diego, CA 92173	(619)428-7349	Process Control analyses and wet methods for the treatment plant.
City of San Diego Water Quality Laboratory	CA01393		1058	5530 Kiowa Drive La Mesa, CA 91942	(619)668-3237	Total Organic Carbon in Wastewater
City of San Diego-Marine Microbiology	CA01302		2185	2392 Kincaid Road San Diego, CA 92101	(619)758-2312	Microbiology
City of San Diego Toxicology Laboratory			1989	2392 Kincaid Road San Diego, CA 92101	(619)758-2341	Bioassays
Nautilus Environmental			1802	4340 Vandever Ave San Diego, CA 92120	(858) 587-7333	Bioassays
TestAmerica Laboratories, Inc			2425	2800 George Washington Way, Richland, WA 99354	(509)375-3131	Gross Alpha/Beta Radioactivity
TestAmerica Nashville Division			01168CA	2960 Foster Creighton Drive Nashville, TN 37204	(615)756-0177	Herbicides
Frontier Analytical Laboratory			02113CA	5172 Hillsdale Circle El Dorado Hills, CA 95762	(916)934-0900	Dioxin/Furan in Wastewater and Solids
Weck Laboratories, Inc.			1132	14859 East Clark Avenue City of Industry, CA 91745	626-336-2139 x141	Organics (Volatile& semi-volatile); Herbicides
Fruit Growers Laboratories, Inc.			1573	853 Corporation Street Santa Paula, CA 93060	(805)392-2000	Gross Alpha/Beta Radioactivity

* Licensed & certified as Arizona Out-of-State Laboratory

Facilities & Scope:

The Environmental Chemistry Services (ECS) comprises five geographically separated laboratories - the main laboratory facilities located at the Alvarado Joint Laboratory building in La Mesa and the four satellite chemistry laboratories located at Public Utilities treatment plants. Each maintains individual California Department of Drinking Water's Environmental Laboratory Accreditation Program (ELAP) certification in its respective Fields of Testing (FoT). The Alvarado laboratory is also certified by the state of Arizona as an out of-state laboratory. Each laboratory also has its own USEPA Lab Code as shown in the following table.

Laboratory Facility	Laboratory	Address	Phone #	EPA Lab Code	ADHS Cert#	ELAP Cert.#
Alvarado Laboratory	Wastewater Chemistry Laboratory	5530 Kiowa Drive L Mesa, CA 91942	619.668.3215	CA00380	AZ0783	1609
Point Loma Satellite Lab	Pt. Loma Wastewater Chemistry Laboratory	1902 Gatchell Road San Diego, CA 92106	619.221.8765	CA01435		2474
North City Water Reclamation Plant Satellite Lab	North City Wastewater Chemistry Laboratory	4949 Eastgate Mall San Diego, CA 92121	858.824.6009	CA01436		2477
Metro Biosolids Center Satellite Lab	Metro Biosolids Center Chemistry Laboratory	5240 Convoy Street San Diego, CA 92111	858.614.5834	CA01437		2478
South Bay Water Reclamation Plant Satellite Lab	South Bay Wastewater Chemistry Laboratory	2411 Dairy Mart Road San Diego, CA 92173	619.428.7349	CA01460		2539

The information presented in this report applies to ECS, including all of the laboratories listed above, unless specified otherwise. The main office for ECS is headquartered at the Alvarado laboratory, which also houses the most extensive laboratory facilities of the section. Along with a variety of process control and wet chemistry analyses, the main laboratory also handles all of the trace metals, pesticides/orgamics determinations, and other analyses. The satellite laboratories are primarily dedicated to process control, wet chemistry, and other analyses to directly support operations of the co-located wastewater treatment plants.

Due to a divisional restructuring in October 2015, the North City Water Reclamation Plant Satellite Laboratory was shifted to the City of San Diego's Water Quality Chemistry Services (WQCS) Section that also consists of the Water Quality Laboratory. With this realignment, the Industrial Waste Laboratory (IWL) was similarly moved to become part of ECS. Final integration to include merging of ECS and IWL databases was not completed as anticipated in 2016. Please note that ECS QA data will include only IWL samples analyzed by ECS and logged in ECS's database for the reporting period of January to December 2016.

Environmental Chemistry Services performs most of the NPDES analytical monitoring requirements and other permit process control chemical and physical testing for the:

- E.W. Blom, Point Loma Wastewater Treatment Plant (PLWWTP), NPDES No. CA0107409/ Order No. R9-2009-0001, including the ocean monitoring program.
- North City Water Reclamation Plant (NCWRP), Order No. 97-03.
- Metro Biosolids Center (MBC), no permit, but monitoring requirements contained in Permit No. R9-2009-0001.
- South Bay Water Reclamation Plant (SBWRP), NPDES No. CA0109045/ Order No. R9-2013-0006.

- Ocean monitoring program for the International Boundary and Water Commission's International Treatment Plant.
- Other environmental testing services for various customers, both internal to the City of San Diego and other external public agencies.

A small portion of the analyses required for permit monitoring was outsourced to laboratories certified by ELAP, specifically:

- Gross Alpha- and Beta radiations to Test America Laboratories, Inc. (Richland Division) and Fruit Growers Laboratory
- Herbicides to Test America Laboratories, Inc. (Nashville Division) and Weck Laboratories
- Total organic carbon (TOC) and thallium in water to the Water Quality Laboratory, City of San Diego, Public Utilities Department
- Dioxin and Furans in solids and wastewater to Test America and Frontier Analytical Laboratories
- Semivolatile & Volatile analyses to Weck Laboratories, Inc.

The City of San Diego pays for additional QC samples (replicates, blanks, and spikes) as a routine quality check on contracted laboratory work. This is beyond the usual and customary practices with contract laboratory work.

Ocean Monitoring:

While there are no recognized State certifications for laboratory analyses of marine environmental samples (e.g. seawater, sediments, various tissues, etc.), the City of San Diego has been a leader in the development and standardization of analytical methods for determinations in these areas.

Many of the methods are novel approaches developed after extensive research and development from other published work (e.g. organotin analyses, sediment grain size, etc.) or adaptations of existing EPA methods (e.g. SW 846 Method 8082 for PCB congeners in sediments, etc.). In all of these cases, we participate in extensive inter-laboratory calibration studies. Some of the most extensive studies have involved several academic/research, public, and private laboratories under the umbrella of the Southern California Coastal Water Research Project (SCCWRP). These studies are repeated periodically as part of the Southern California Bight Regional Monitoring/Survey Project, which is a massive sampling and monitoring program, participated in by all of the major Publicly Owned Treatment Works (POTWs), California Water Resource Control Boards, and research organizations.

Our laboratory is a reference (referee) laboratory for the NRCC (National Research Council of Canada) CARP-2 Certified Reference Material (CRM) for fish tissue. This sample was adopted as the standard reference material for QC requirement of the Southern California Bight Regional Project, and also used worldwide as a standard reference material. Additionally, we have worked with NIST to develop a West Coast marine sediment and fish tissue standard reference material (SRM).

QA/QC Activities Summary:

Report for January 1, 2016 - December 31, 2016.⁷

The sample distribution increased 5.2% in year 2016 from 2015; Of the 354,066 analytical determinations made on 47484 samples received by the Laboratory in 2016 (see table A.) 18,991 or 40.1% were Quality Control (QC) samples; 12.5% were blanks; and 27.6% were check or reference samples.

	2016	2015	
	Number of Samples	Percent of total samples	% Difference
Table A. Samples			
Customer/Environmental samples	28,408	59.93%	5.2%
Quality Control (QC) samples	18,991	40.07%	4.3%
Total Samples	47,399	100.00%	4.8%
QC Samples:			
Blanks:			
FIELD_BLANK	237	0.50%	-3.4%
REAGENT_BLANK	56	0.12%	26.8%
TRIP BLANK	6	0.01%	33.3%
METHOD_BLANK	5,608	11.83%	4.3%
Total Blanks:	5,907	12.46%	
Check samples:			
External Check samples	5,807	12.25%	-0.7%
Internal Check samples	7,191	15.17%	8.3%
Low Level MDL Verification	38	0.08%	-18.4%
SRMs (Standard Reference Material)	47	0.10%	31.9%
Total Check Samples:	13,083	27.60%	4.3%
Total QC Samples:	18,990	40.06%	4.3%

A high level of Quality Control is used for laboratory determinations. Of the 354,066 determinations, 44.7% were QC (e.g. blanks, lab replicates, matrix spikes, surrogates, etc.). If calculated for the 337,979 customer determinations only, the percentage increases to 46.8%.

A small percentage (2.29%) of the total analytical batches did not meet internal QA review due to a variety of reasons - e.g. unsuccessful calibration, unacceptable QC performance, outside acceptance criteria, etc. Samples from analytical determinations that were rejected are either reanalyzed, the data is not reported, or data is reported and flagged as having not met data quality objectives and may not be suitable for compliance determination.

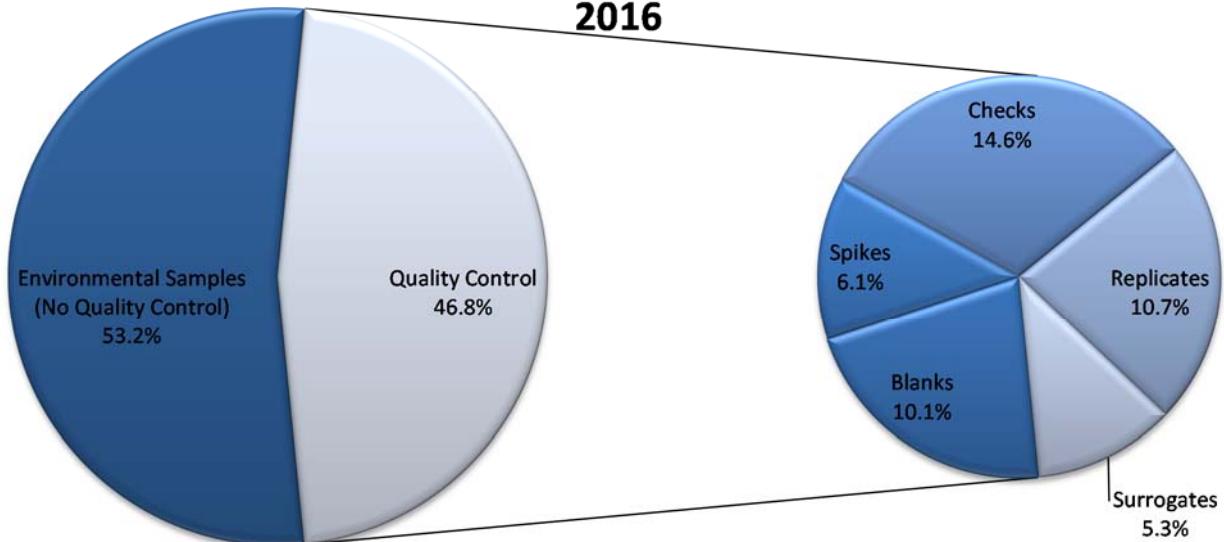
⁷ Data counts (metrics) were obtained on March 26, 2017 and do not include analyses that were underway, but incomplete as of that time. All table data is based on samples collected between January 1, 2016 and December 31, 2016. This data summary is comprehensive and includes all laboratory analyses work for all customers, projects, and programs unless otherwise indicated.

Table A.2. Analyses (results) - 2016

	Number	Percent of total
Total number of analytes/results determined:	354,066	NA
Total results not complete ² :	16,087	4.5%
No. of results for Customer/Environmental Samples^{1,3}:	337,979	95.5%
Total number of rejected results:	64,231	20.26%
No. of results for blanks ³ :	34,097	9.6%
No. of results for matrix spikes ³ :	20,569	5.8%
No. of results for Check samples ³ :	49,351	13.9%
No. of results for Replicates ³ :	36,214	10.2%
No. of results for surrogates ³ :	17,931	5.1%
Total QC analyses run³ :	158,162	44.7%
		46.8%

Percent of QC to All Environmental Analyses(including Duplicate Analyses)

2016



1 – matrix spike, replicates, surrogates are also part of the total for Customer/Environmental samples.

2 – as of March 26, 2017.

3 – percent of QC samples calculated from grand total of 354,066.

NOTE: Analysis, for metrics purposes used in this report, generally refers to a parameter determined in each sample in a batch. Determination of several metals in a sample (e.g. iron, nickel, lead) would equal as three (3) analyses in the expression of totals such as those in the Analyses table on the preceding page. This means of calculation that has been used for many years with batch and method, is a useful comparative measure of laboratory performance and is one of the fundamental constants in applying quality control measures.

	No. of Batches	Percent of total
Total number of analytical batches:	15,695	100.00%
Total number of rejected analytical batches:	147	0.94%
Incomplete batches (as of March 26, 2017):	360	2.29%
	16,202	

Outside laboratories

A small number of permit required analyses are contracted out, as summarized below.

Results from sub-contracted labs.		
Laboratory	Analytes	Total in-house Analytes
Frontier Analytical	4533	1.43%
Weck Laboratory	37	0.01%
Fruit Growers Laboratory, Inc.	94	0.03%
San Diego Water Quality Laboratory	110	0.03%
Test America	682	0.22%
Total outside results:	5,456	1.72%

QA Plan:

A copy of our Laboratory's current Quality Assurance Plan is included as Attachment 3. The Quality Assurance Plan was updated in March 2017.

Summary of 2016 Performance Testing (PT) Studies:

The Environmental Chemistry Services Laboratories participated in required ELAP and USEPA PT studies throughout the year. Each of the geographically separated laboratory facilities participated individually (as required by ELAP) in 18 PT studies for 2016. PT studies were purchased from ERA and Phenova and were successfully completed. When results submitted were determined to be outside of study acceptance limits, the laboratory reviewed its internal protocols, modified procedures as necessary, and participated in a subsequent study for the analytes in question. A PT study was completed with satisfactory results for all analytes by in-house chemistry laboratories.

The results of the Laboratory PT studies for 2016 are summarized in the following tables.

Alvarado Environmental Chemistry Laboratory: See attachment 6 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
HW-0116	72	72	100%
HW-0416	107	106	99.10%
HW-0716	2	2	100%
WP-0216	2	2	100%
WP-0316	159	153	96%
WP-0516	1	1	100.00%
WP-0416	17	16	94%
Total analytes:	360	352	98%

North City Chemistry Laboratory: See attachment 7 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
WP-0416	14	14	100%
Total analytes:	14	14	100%

Metro Biosolids Center (MBC) Chemistry Laboratory: See attachment 8 for copy of reports

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
WP-0316	5	5	100%
Total analytes:	5	5	100%

Pt. Loma Environmental Chemistry Laboratory: See attachment 9 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
WP-0216	5	5	100%
WP-0316	2	2	100%
WP-0416	5	5	100%
WP-0516	1	1	100%
HW--0716	2	2	100%
Total analytes:	13	13	100%

South Bay Wastewater Chemistry Laboratory: See attachment 10 for copy of reports.

PT Study	Number of Analytes	Number of Acceptable results	Success Rate (%)
WP-0316	14	14	100%
WS-237	1	1	100%
WP-255	1	1	100%
WS-416	2	2	100%
Total analytes:	18	18	100%

F. Staff contributing to this Report

Staff Contributing to this Report in 2016

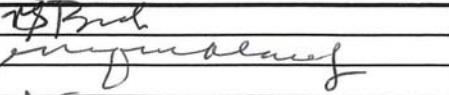
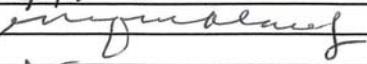
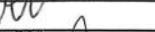
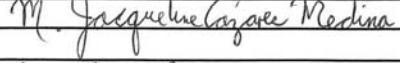
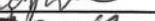
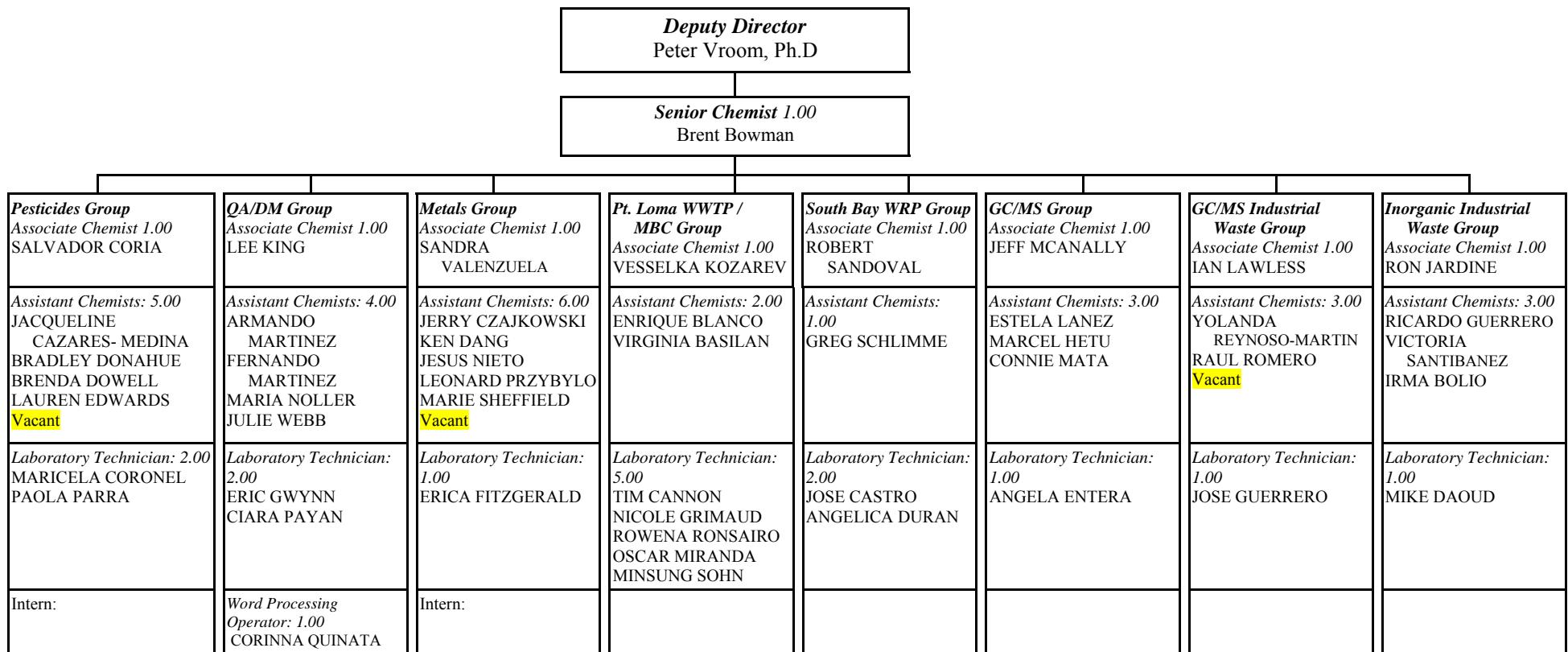
Initials	ID	First Name	Last Name	Signature
VB	VBASILAN	Virginia	Basilan	
EB	EBLANCO	Enrique	Blanco	
IBA	IBOLIO	Irma	Bolio	
TC	TJCANNON	Tim	Cannon	
JC	JCASTRO	Jose	Castro	
JCM	JCAZARES	Jacqueline	Cazares-Medina	
SC	SCORIA	Salvador	Coria	
MC	MCORONEL	Maricela	Coronel	
CC	CCORRAO	Christine	Corrao	
JOM	JCZAJKOWSKI	Jerry	Czajkowski	
KD	KDANG	Ken	Dang	
MM	MMDAOUD	Mike	Daoud	
BD	BDONAHUE	Brad	Donahue	
BLD	BDOB WELL	Brenda	Dowell	
ACD	AOD ADURAN	Angelica	Duran	
LBE	LEDWARDS	Lauren	Edwards	
AJE	AJENTERA	Angela	Enteria	
EFITZ	EFITZGERALD	Erica	Fitzgerald	
TG	TGARCIA	Tatsiana	Garcia	
NG	NGRIMAUD	Nicole	Grimaud	
JGB	JDGUERRERO	Jose	Guerrero	
RG	RGUERRERO	Ricardo	Guerrero	
MH	MHETU	Marcel	Hetu	
EH	EHUNT	Eric	Hunt	
RJ	RJARDINE	Ron	Jardine	
BK	BKELLEY	Brett	Kelley	
LK	LKING	Lee	King	
VK	VKOZAREV	Vesselka	Kozarev	
EL	ELANEZ	Estela	Lanez	
ITL	ILAWLESS	IAN	Lawless	
AM	AMARTINEZ	Armando	Martinez	
FM	FMARTINEZ	Fernando	Martinez	
CGM	CONNIEM	Connie	Mata	
JM	JMCANALLY	Jeff	McAnally	
EM	EMERCADO	Elvie	Mercado	
OM	OMIRANDASAND	Oscar	Miranda Sandoval	
JN	JNIEITO	Jesus	Nieto	
MN	MNOLLER	Maria	Noller	
PP	PPARRA	Paola	Parra	
CP	CPAYAN	Ciara	Payan	
LP	LPRZYBYLO	Leonard	Przybylo	
CAQ	CQUINATA	Corinna	Quinata	
YXR	YREYNOSOMAR	Yolanda	Reynoso Martin	
RR	RROMERO	Raul	Romero	
SR	SEROMERO	Sonji	Romero	
RR	RRONSAIRO	Rowena	Ronsairo	
RS	RSANDOVAL	Robert	Sandoval	
VS	VSANTIBANEZ	Victoria	Santibanez	
GS	GSCHLIMME	Greg	Schlumme	
MS	MSHEFFIELD	Marie	Sheffield	
MS	MSOHN	Minsung	Sohn	
SV	SVALENZUELA	Sandra	Valenzuela	
JW	JWEBB	Julie	Webb	
EW	EWESTCOTT	Erica	Westcott	

Figure 1. Chemistry Laboratory Organization Chart.

Public Utilities Department
Environmental Monitoring and Technical Services Division
Environmental Chemistry Services



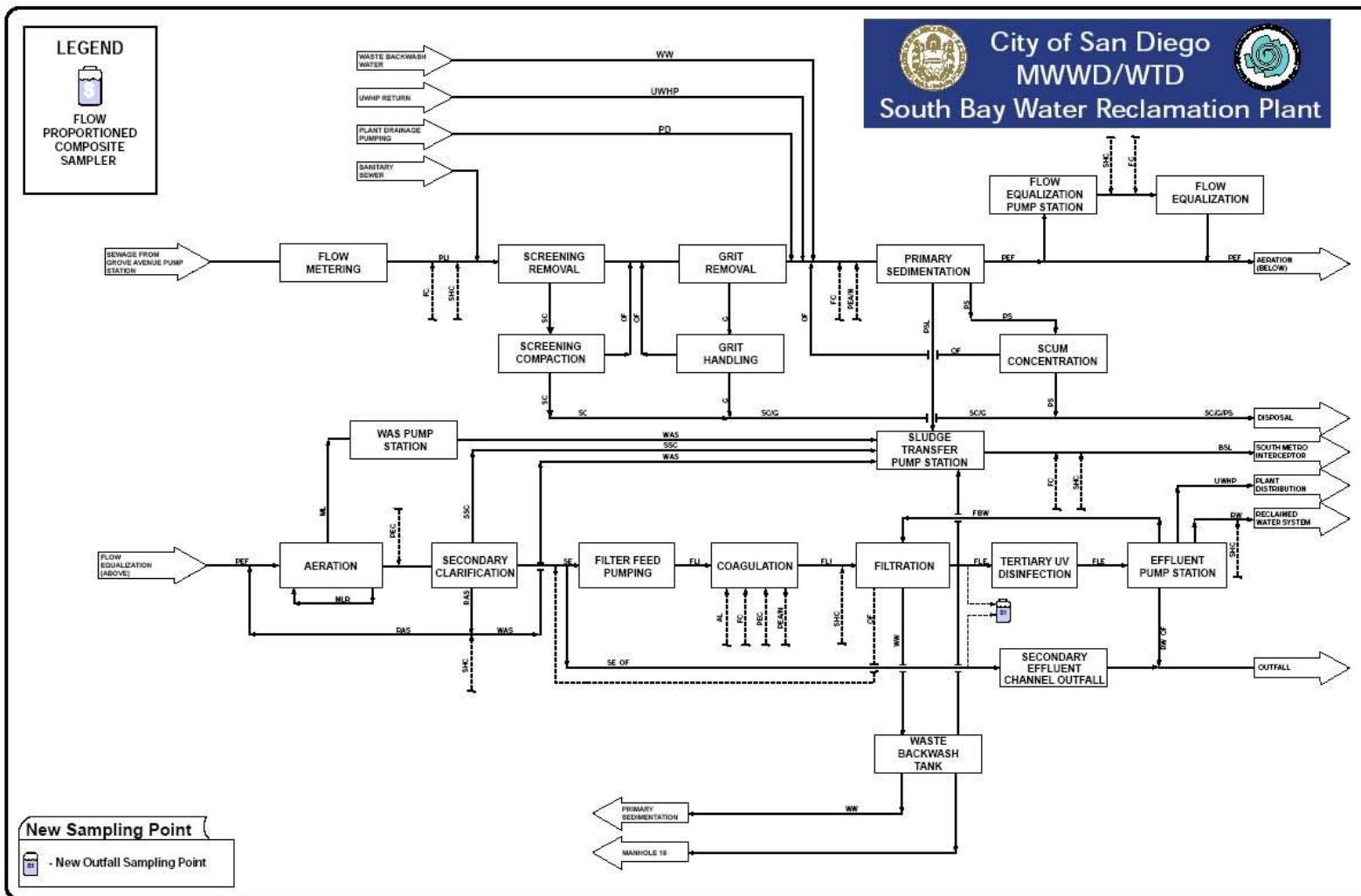


Figure 1 - New Effluent to Ocean Outfall Sample Point

South Bay Water Reclamation Plant
Effluent to Ocean Outfall Sampling System
June 2007

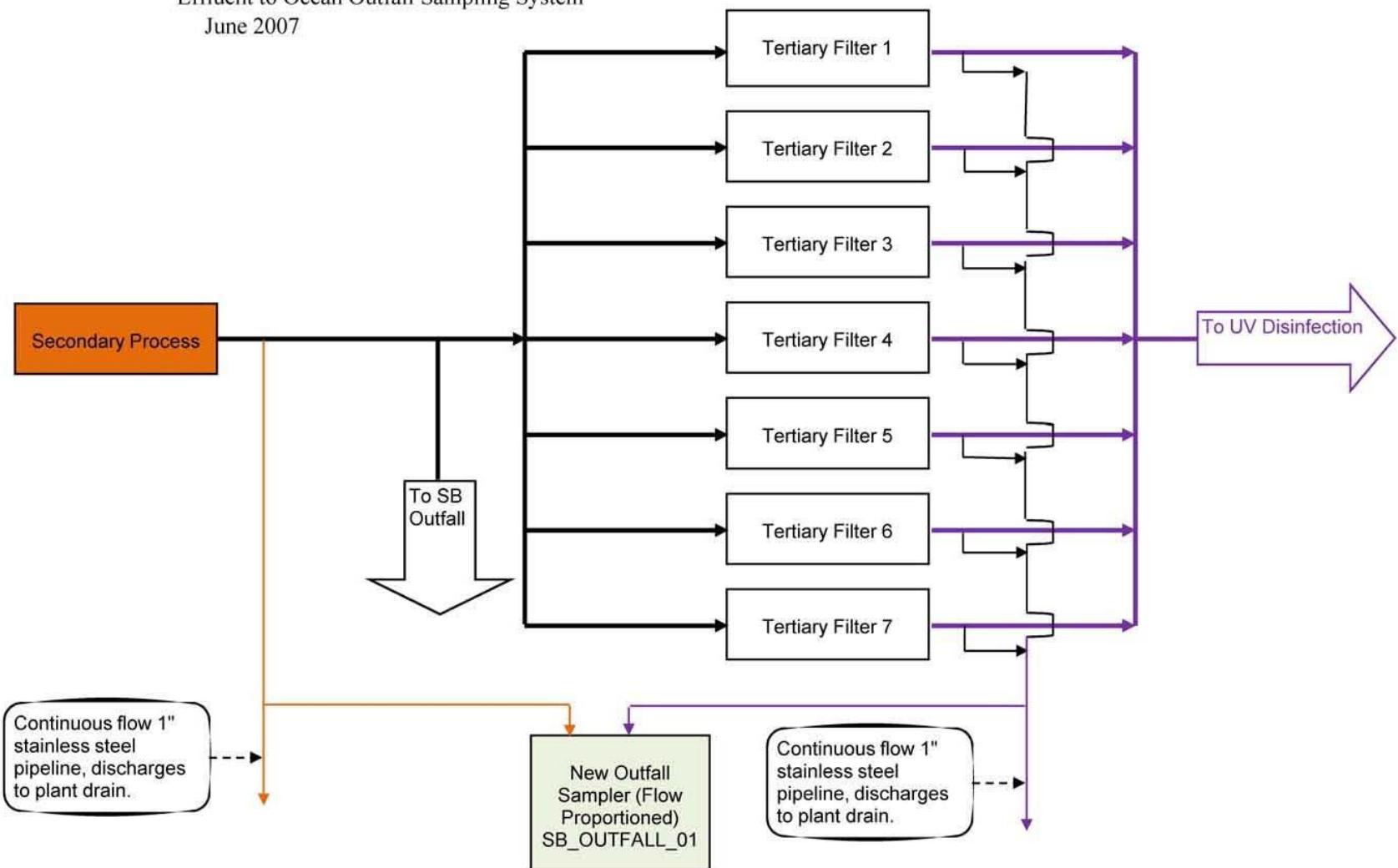


Figure 2 - Detail of Effluent Sampling System