

**2009 Annual Reports
and Summary
for the
South Bay Wastewater
Reclamation Plant & Ocean
Outfall**



NPDES No. CA 0109045
Order No. 2006-067
&
Order No. 2000-203





THE CITY OF SAN DIEGO

June 30, 2010

Mr. John Robertus, Executive Officer
California Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

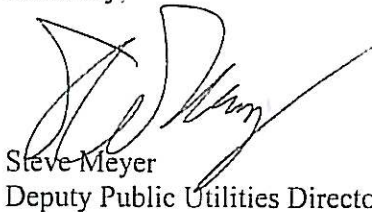
Attn: POTW Compliance Unit

Dear Mr. Robertus:

Enclosed is the 2009 South Bay Water Reclamation Plant and Ocean Outfall Annual Reports and Summary, as specified in discharge Order No. 2006-067, NPDES Permit No. CA0109045.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,



Steve Meyer
Deputy Public Utilities Director

BGB

cc: EPA Region 9
San Diego County Department of Environmental Health
Distribution
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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
2009**

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I. Introduction

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

Introduction

A. Executive Summary:

Purpose:

This report meets the annual reporting requirements of Monitoring and Reporting Program (MRP) Order No. R-2006-067 (NPDES Permit No. CA0109045), as well as the requirements of 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 a historical record and reference of operational and compliance metrics of value to the public, policy makers, and technical users.

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 2009, the plant received and treated 3.050 billion gallons of wastewater, reclaiming 78% or 2.378 billion gallons. Seventy Five percent of the reclaimed water was beneficially reused by the Otay Water District, the International Treatment Plant, or used for in-plant processes. During the warmer periods, virtually 100% of the reclaimed water was reused.

Key metrics for 2009	Daily Average Flow (mgd)	Total Annual Flow (million gallons)
Influent to plant (Raw Wastewater Treated)	8.36	3,050
Effluent to Ocean Outfall	2.62	958
Reclaimed Water Produced	6.52	2,378
Beneficial Reuse (recycled water distributed)	4.11	1,501
Sludge and returns to South Metro Interceptor (SMI)	1.54	564
Plant Use of Reclaimed Water	0.78	284

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

Compliance:

Effluent to Ocean Outfall (NPDES) Discharge:

A complete re-configured the effluent sampling system in order to obtain representative samples of the SBWRP effluent under all operating conditions occurred in 2009. Beginning June 1st, 2009, the new sampling system for the monitoring of the South Bay Water Reclamation Plant (SBWRP) effluent to ocean discharge flow was placed into service. This new configuration is designed to ensure representative effluent samples can be taken under all operating conditions, including those that have been problematic with the implementation of water recycling at SBWRP. As an unforeseen consequence of a successful recycling program, discharge of effluent to the ocean is, at times, virtually zero. While desirable, monitoring requirements anticipate discharge 7-days a week. Additionally, our effluent pipe is vulnerable to back-flow from the shared Effluent Distribution Structure (EDS) when not charged.

The new sampling system takes representative flow-proportioned samples from each of the two effluent streams that can contribute to outfall discharge; Secondary Effluent and Tertiary Effluent, and adds them to a single refrigerated sample container. The two autosamplers operate independently, having flow signal for the respective streams integrated with the instrument program. A system of pipes provides continuous flow-through streams for each effluent¹ from which autosampler apparatus take aliquots based on flow-signal. This ensures sample representative of any effluent to the Ocean Outfall, at any flow rate and well upstream of possible back-flow from the Effluent Distribution Structure. A detailed description of the re-configuration of the effluent sampling system is included in Appendix F.

This new sampling process that captures a representative sample of the effluent stream at a location upstream of the Effluent Distribution Structure (EDS) has eliminated the backflow contamination that was adversely effecting the SBWRP effluent monitoring in 2008.

Recycled Water:

There were six exceedances of limits in 2009 for recycled water on days of distribution.

High TDS concentrations in Recycled Water accounted for four of the exceedances. This is a new phenomena and infrequently occurring. Since recycling began in July 2006, there were no Daily concentration ≥ 1300 mg/L until this year. There have been only 5 occasions in which Daily TDS has exceeded 1300 mg/L; 3 in February and 1 each in May and June. There were no other exceedance for TDS in reclaimed water after June 8th, 2009. The cause of these anomalous values is not yet known. We have a expanding monitoring when these events occur.

¹ Secondary Effluent and Tertiary Effluent

One exceedance of the Monthly Average Chloride limit of 260 mg/L occurred in March. The chloride concentration of the March 4th, 2009 reclaimed water sample was 263 mg/L. This was within the Daily Maximum Limit of 300 mg/L, however, since this was the only sample for the month it is also the Monthly Average and exceeded the 30-Day Average limit of 260 mg/L. Weekly monitoring for chloride began in April 2009. No further exceedance of this limit occurred in 2009. The chloride limit is based on a Secondary MCL for aesthetics, i.e. taste, not a health concern. Reclaimed water from the SBWRP is not used for human consumption.

One exceedance of the no sample to exceed limit of 240-MPN for Total Coliform in reclaimed water occurred on the April 3, 2009 sample. The total coliforms value of 350-MPN for that day exceeded the single sample limit of 240-MPN. Immediately upon detection of this violation, the control system automatically halted the distribution of RW. Results from subsequent bacti samples collected April 4 and April 5 were received on April 7 at about 10:30 AM. These tests indicated 13 MPN and 6.8 MPN, respectively. Both results were within limits and indicate the filter effluent lines and under drains had been appropriately flushed. RW distribution resumed on April 7 at 6:30 PM.

A standard operating procedure (SOP) was developed and implemented to minimize the potential to distribute non-compliant RW after the filter effluent lines and under-drains have been drained.

B. Explanatory Notes:

The past year's data is presented in tabular and graphical form. We include annual monitoring results, as well as 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.

Note that, 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, as well as 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 that 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. Please reference the chart axis scales.

“E” Qualifier, estimated concentrations:

Ocean data for several of the trace organics (e.g. chlorinated pesticides and PCB congeners, etc.) contains data that is qualified with a prefixed “E” (see example below). This indicates Estimated concentrations. Analytical technique is sufficiently specific and sensitive enough (GC-MS-MS) so that qualitative identification has high confidence while the quantitative data is below 40CFR136 confidence intervals for MDL concentrations. The concentrations reported with this qualifier indicate that one or more tests identified the compound was present, but below detection limits for quantitation. When reported as part of annual averages, an “E” qualifier may accompany average concentration values either below or above MDLs.

Analyte	MDL	Units	SD-14	SD-17	SD-18	SD-19	SD-20	SD-21	RF-1
			2001	2001	2001	2001	2001	2001	2001
			Avg	Avg	Avg	Avg	Avg	Avg	Avg
Hexachlorobenzene	13.3	UG/KG	<13.3	<13.3	<13.3	<13.3	E3.7	<13.3	E2.8
BHC, Gamma isomer	100	UG/KG	ND	ND	ND	ND	ND	ND	ND
Heptachlor	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
Aldrin	133	UG/KG	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
o,p-DDE	13.3	UG/KG	<13.3	E43.5	<13.3	E107.0	<13.3	<13.3	E22.0
Alpha Endosulfan	133	UG/KG	ND	ND	ND	ND	ND	ND	ND
Alpha (cis) Chlordane	13.3	UG/KG	<13.3	<13.3	ND	<13.3	<13.3	ND	<13.3
Trans Nonachlor	20	UG/KG	E11.3	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
p,p-DDE	13.3	UG/KG	713.0	1460.0	459.0	2030.0	618.0	693.0	712.0
Dieldrin	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
o,p-DDD	13.3	UG/KG	ND	ND	ND	<13.3	<13.3	<13.3	<13.3
Endrin	20	UG/KG	ND	ND	ND	ND	ND	ND	ND
o,p-DDT	13.3	UG/KG	<13.3	ND	ND	<13.3	<13.3	ND	<13.3
p,p-DDD	13.3	UG/KG	E7.5	E5.5	<13.3	<13.3	E7.8	<13.3	E18.2
p,p-DDT	13.3	UG/KG	E5.9	<13.3	<13.3	<13.3	E5.4	<13.3	<13.3
Mirex	13.3	UG/KG	<13.3	ND	ND	ND	ND	ND	ND

nd= not detected

NA= not analyzed

NS= not sampled

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

C. 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 2.2 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 Pt. 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 comprise approximately 65% of the Metro Sub-System flows. All System facilities are owned by the City of San Diego and are managed by MWWD.

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) which 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 Pt. 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 which address the water quality and beneficial uses of the Pacific Ocean.

The plant has a rated capacity of 240 million gallons per day (mgd) average daily dry weather flow, 432 mgd peak wet weather flow, and currently operates at 153 mgd. The NCWRP has a rated capacity of 30 mgd and currently operates at a nominal flow-rate of 23 mgd. The SBWRP has a rated capacity of 15 mgd and is currently treating a nominal 8.3 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 processed 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 ISO² 14001, Environmental Management Systems.



² International Standards Organization

D. 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) which is returned to the Metro System via the South Metro Interceptor and is pumped to the Pt. Loma WWTP. The resultant secondary effluent is either discharged to the South Bay Ocean Outfall or directed to tertiary treatment in the plant.

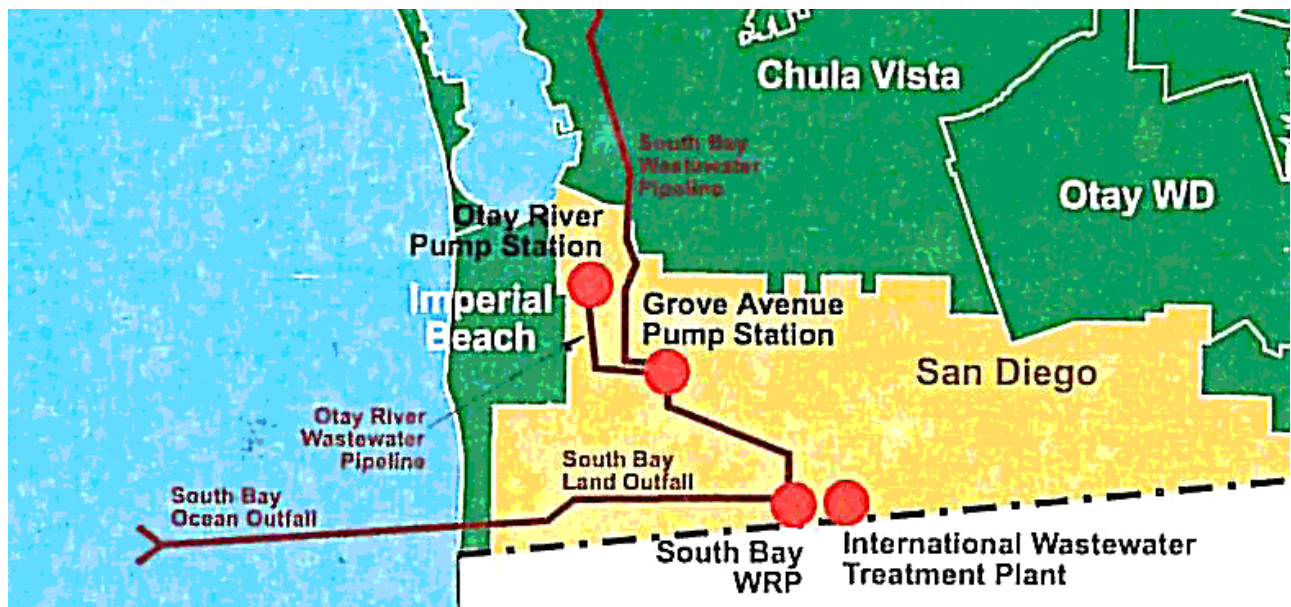


In 2009, approximately three quarters of the influent treated was directed to tertiary treatment. Tertiary treatment consists of running the secondary effluent through anthracite coal beds where it is filtered of remaining solids as it passes through the layered medium. The filtered water then passes through chambers where it is disinfected through exposure to high-energy ultraviolet light (UV). At this stage the "reclaimed" water meets State 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.



E. Discussion of Compliance Record

The South Bay Water Reclamation Plant operates with two separate permits. NPDES Permit No. CA0109045/ Order No. 2006-067 (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.

Recycled (Reclaimed) Water:

This is the fourth year of operating where reclaimed water was produced and distributed. There were six exceedances of recycled water limits in 2009 on days of distribution.

High TDS concentrations in Recycled Water accounted for four of the exceedances. This is a new phenomena and infrequently occurring. Since recycling began in July 2006, there were no Daily concentration ≥ 1300 mg/L until this year. There have been only 5 occasions in which Daily TDS has exceeded 1300 mg/L; 3 in February and 1 each in May and June. There were no other exceedance for TDS in reclaimed water after June 8th, 2009. The cause of these anomalous values is not yet known. We are expanding monitoring when these events occur and are investigating potential causes.

One exceedance of the Monthly Average Chloride limit of 260 mg/L occurred in March. The chloride concentration of the March 4th, 2009 reclaimed water sample was 263 mg/L. This was within the Daily Maximum Limit of 300 mg/L, however, since this was the only sample for the month it is also the Monthly Average and exceeded the 30-Day Average limit of 260 mg/L. Weekly monitoring for chloride began in April 2009. No further exceedance of this limit occurred in 2009. The chloride limit is based on a Secondary MCL for aesthetics, i.e. taste, not a health concern. Reclaimed water from the SBWRP is not used for human consumption.

One exceedance of the 240-MPN limit for a single sample for reclaimed water occurred on the April 3, 2009 sample. On April 6, at 10:30 AM, a bacti sample taken on April 3 at 7:00 AM measured 350 MPN, exceeding the single sample limit of 240 MPN. Immediately upon detection of this violation, the control system automatically halted the distribution of RW. Results from subsequent bacti samples collected April 4 and April 5 were received on April 7 at about 10:30 AM. These tests indicated 13 MPN and 6.8 MPN, respectively. Both results were within limits and indicate the filter effluent lines and under drains had been appropriately flushed. RW distribution resumed on April 7 at 6:30 PM.

A standard operating procedure (SOP) was developed and implemented to minimize the potential to distribute non-compliant RW after the filter effluent lines and under-drains have been drained. The procedure included the following:

- The lines and under drains must be adequately flushed.
- After flushing, a sample will be taken and tested to determine if total coliform levels are within acceptable range prior the resuming RW distribution.

Reclaimed Water Permit No. 2000-203

Month	Number of measures exceeding Limits.	Comments: (see monthly report for further details.)
January 2009	none	
February 2009	2	The total Dissolved Solids (TDS) value of 1440 mg/L and 1530 mg/L for the Reclaimed Water (SB_REC_WATER) on February 1 st and 3 rd , respectively, were above the Daily Maximum limitation of 1300 mg/L. A third value . 1300 mg/L of 1460 mg/L was determined on February 9 th a day when no reclaimed water was distributed.
March 2009	1	Chloride concentration was 263 mg/L on March 4, 2009. While within the Daily Maximum Limit of 300 mg/L, since this was the only sample for the month it is also the Monthly Average and exceeded the 30-Day Average limit of 260 mg/L.
April 2009	1	April 3, 2009 – reclaimed water total coliforms of 350-MPN exceeded the single sample limit of 240-MPN.
May 2009	1	The total Dissolved Solids (TDS) value of 1340 mg/L for the Reclaimed Water (SB_REC_WATER) on May 4 th , 2009 was above the Daily Maximum limitation of 1300 mg/L.
June 2009	1	The total Dissolved Solids (TDS) value of 1420 mg/L for the Reclaimed Water (SB_REC_WATER) on June 8 th , 2009 was above the Daily Maximum limitation of 1300 mg/L.
July 2009	none	
August 2009	none	
September 2009	none	
October 2009	none	
November 2009	none	
December 2009	none	
Total:	6	

Ranges of Major Constituents in Reclaimed Water, 2009.

Waste Discharge and Water Recycling Requirements for the South Bay Water Reclamation Plant (Order No. 2000-203)				
Parameter	Permit Limits		Measured Values	Notes
			CY 2009	
BOD ₅	Monthly Average	30 mg/L	0.14 – 2.4	
	Daily Maximum	45 mg/L	ND – 11.3	
Total Dissolved Solids (TDS)	Monthly Average	1,200 mg/L	883 – 1100	
	Daily Maximum	1,300 mg/L	755 – 1530	
Sulfate	Monthly Average	250 mg/L	186 – 254	
	Daily Maximum	300 mg/L	169 – 275	
MBAS	Monthly Average	0.5 mg/L	0.14 – 0.52	
	Daily Maximum	0.7 mg/L	0.13 – 0.52	
Iron	Monthly Average	0.3 mg/L	ND – 0.136	
	Daily Maximum	0.4 mg/L	“	
Fluoride	Monthly Average	1.0 mg/L	0.44 – 0.82	
	Daily Maximum	1.2 mg/L	0.35 – 0.86	
Coliform	7-Day Median	2.2/100-mLs	<1.8 – 2.0	

F. Plant Facility Operation Report

SOUTH BAY WATER RECLAMATION PLANT 2009 ANNUAL FACILITY REPORT Prepared under the direction of 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 2009. 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:

- 3 Primary Tanks on line with 2 offline as backups
- 5 Aeration Basin on line with 3 offline as backups
- 5 Secondary Basin on line with 4 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 flows treated during 2009 were approximately 8.33 with 2.62 mgd discharged to ocean outfall and with 4.11 mgd reclaimed water (RW) distributed.

Solids Handling:

The influent screening and washer/compaction units operated well, with adequate on-site hopper capacity. Approximately 22.79 tons of screenings were disposed of through the end of December 2009. Grit storage capacity was also adequate with 19.02 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 2009 operation. Average daily totals for blended sludge volumes returned to the Pt. Loma facility via the South Metro Interceptor were 1.55 MGD.

Secondary Performance:

Secondary treatment performance for TSS and BOD has been an average TSS of 10.79 mg/L and BOD of 12.06 mg/L for 2009. Average secondary effluent turbidity was 4.0 ntu. MCRT has typically been maintained between 5 to 7 days.

Tertiary Processes:

The anthracite media for the tertiary filters did not experience any losses for 2009. Six out of seven filters were available for operation. And 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 maintain at equal or below 0.5 mg/l. The frequency of chlorine addition is 12 hrs/day.

Water Reclamation & Distribution:

RW water was delivered to IBWC ((International Boundary Water Commission) at a average daily rate of 0.37 MGD throughout the year. And the average delivery rate to Otay Storage tank during summer months was 5 to 7 mgd and only less than 1 mgd during the winter months.

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 utilize the services of a City entomologist who has been working with a number of products designed to disrupt the life-cycle of the insects. Additional, 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 efforts to gain full control over this problem continue.

Discussion of compliance record:

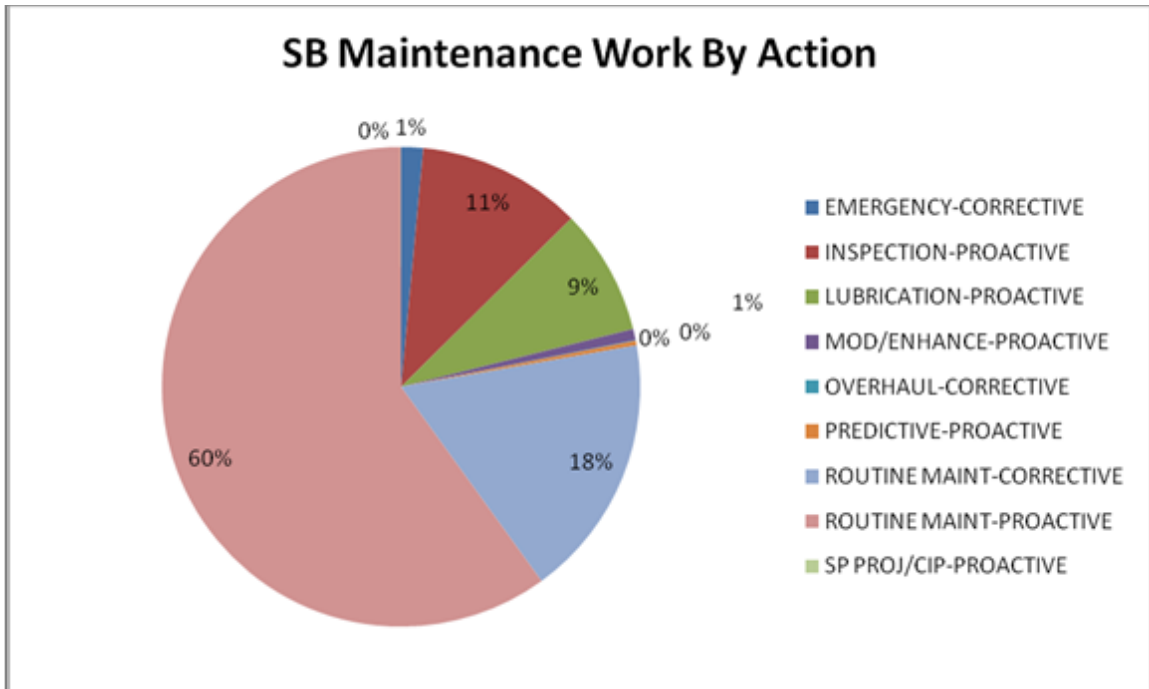
Recycled Water:

On April 1, 2009 the South Bay Water Reclamation Plant (SBWRP) tertiary process was shutdown to facilitate the connection of sample lines to the tertiary filters' effluent lines. The tertiary process product flow (reclaimed water RW) was diverted to the ocean outfall for 11 hours prior to distribution to customers to ensure any sloughed organic matter had been adequately flushed. On April 6, at 10:30 AM, a bacti sample taken on April 3 at 7:00 AM measured 350 MPN, exceeding the permit limit of 240 MPN. Immediately upon detection of this violation, the control system automatically halted the distribution of RW. Results from subsequent bacti samples collected on April 4 and April 5 were received on April 7 at about 10:30 AM. These tests indicated 13 MPN and 6.8 MPN, respectively. Both results are compliant and indicated the filter effluent lines and under drains have been appropriately flushed. RW distribution resumed on April 7 at 6:30 PM.

Maintenance Report:

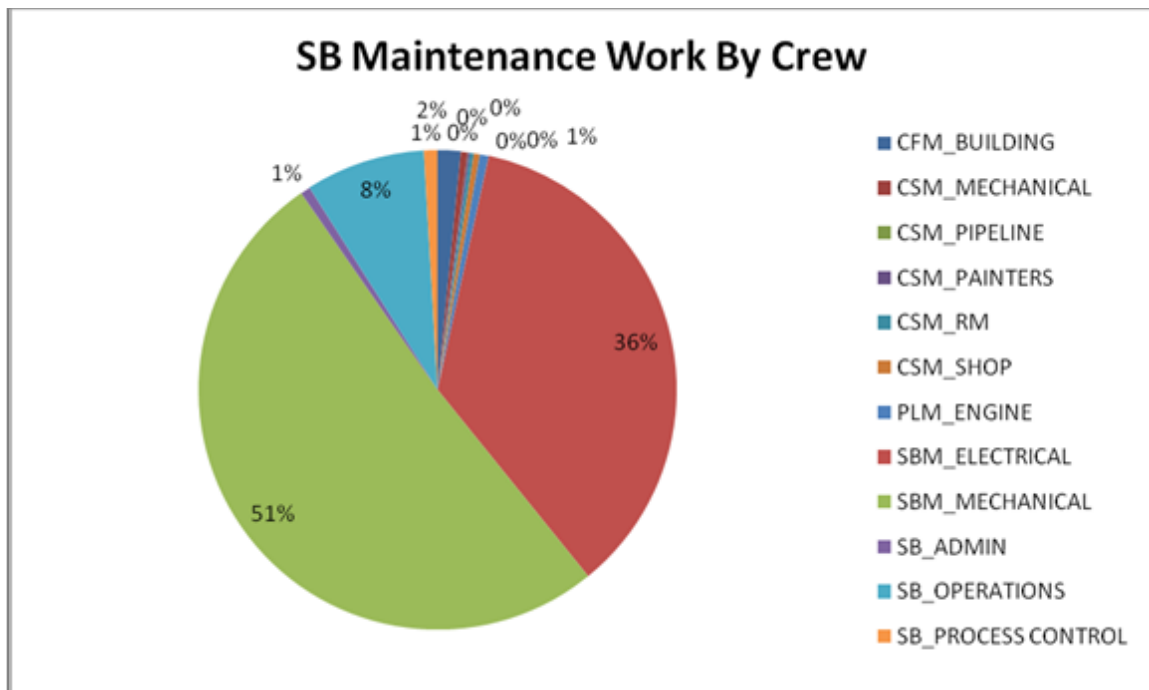
South Bay Maintenance Work Orders by Action

EMERGENCY-CORRECTIVE - 64
INSPECTION-PROACTIVE - 482
LUBRICATION-PROACTIVE - 370
MOD/ENHANCE-PROACTIVE - 33
OVERHAUL-CORRECTIVE - 2
PREDICTIVE-PROACTIVE - 13
ROUTINE MAINT-CORRECTIVE - 773
ROUTINE MAINT-PROACTIVE - 2601
SP PROJ/CIP-PROACTIVE - 1



South Bay Maintenance Work Orders by Crew

CFM_BUILDING - 67
 CSM_MECHANICAL - 20
 CSM_PIPELINE - 1
 CSM_PAINTERS - 6
 CSM_RM - 11
 CSM_SHOP - 18
 PLM_ENGINE - 26
 SBM_ELECTRICAL - 1551
 SBM_MECHANICAL - 2220
 SB_ADMIN - 29
 SB_OPERATIONS - 350
 SB_PROCESS CONTROL - 40



G. Correlation of Results to Plant Conditions

In 2009 the amount of system flows treated at the SBWRP averaged over 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)
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
2006	2,216	1,807	73.7	341	1,881

Comparative flow data:

low stream	2006		2007		2008		2009	Annual Total
	Daily Average	Annual Total	Daily Average	Daily Average	Annual Total	Annual Total	Daily Average	
Influent	6.06	2216	8.66	8.67	3173	3153	8.33	3050
RW (Reclaimed Water) Produced	5.96	1097	6.53	6.49	2378	2389	6.51	2378
RW Distributed	0.40	73.7	3.00	3.78	1388	1101	4.11	1501
RW In-plant use	0.46	163.0	0.72	0.68	250	261	0.78	284
Total reuse	0.86	236.7	3.72	4.46	1638	1361	4.89	1785
Effluent to SBOO	4.94	1807	4.03	3.20	1167	1467	2.62	958
Return to SMI	0.93	341	1.45	1.64	601	527	1.55	564

The annual volume discharges to the ocean decreased nearly 18%, from 1,167 in 2008 to 958 million gallons in 2009. The production of reclaimed water maintained levels set in 2007, reclaimed water distributed increased by 113 million gallons in 2009 reflecting increased demand for recycled water for beneficial reuse.

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