

## **Recycled Water Annual Summary Report 2012**

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Every year, the San Diego Water Board surveys recycled water agencies to collect information on production, reuse, and the quality of recycled water in the San Diego Region. This information is analyzed and summarized in the *Recycled Water Annual Summary Report (Report)*. The report for 2012 is included as Attachment A to this Executive Officer's Report. One purpose of the *Report* is to monitor progress in reaching the goals identified in the State's Recycled Water Policy. The *Report* is also designed to 1) raise awareness of the need for recycled water use in the San Diego Region and 2) encourage recycled water producers to take steps to increase the use of recycled water in their service area while maintaining the quality of the water to protect the beneficial uses of groundwater and surface waters of the Region.

The San Diego Region's recycled water agencies used more recycled water in 2012 than 2011. The percent of treated wastewater that was beneficially reused as recycled water increased from 44.6 % in 2011 to 54.8% in 2012 (primarily for landscape irrigation). The number of inspections conducted by recycled water agencies increased from 4,105 to 4,282, with the percent of inspected sites with violations also increasing from 2 percent to 5 percent. The actual number of sites inspected, however, decreased from 2,995 to 2,693. Despite these violations noted at the reuse sites, overall, recycled water quality across the Region met effluent limitations specified in applicable permits. Comparing historical data, there are no discernible trends for individual facilities or constituents, suggesting that the overall quality of recycled water remained consistent for the last two decades. The average total dissolved solids concentration (TDS) in recycled water decreased in 2012, which may have been due to better quality source water. Chloride and sulfate concentrations in recycled water increased slightly in 2012 (TDS, chloride, and sulfate concentrations in source water decreased in 2012).

## California Regional Water Quality Control Board San Diego Region Annual Recycled Water Summary Report 2012

California must diversify its water supply sources to meet the needs of a growing population. Importing water is not sustainable due to droughts, climate change, and complex legal issues. The State Water Board determined that managing a diverse water supply can help alleviate the problems. The State's Recycled Water Policy includes the goals of increasing total recycled water use in California by 1 million acre-feet per year by 2020, and by 2 million acre-feet per year by 2030. "Recycled water use" is defined as a use that replaces the use of potable water. For reference, the average family of four uses 0.45 acre-feet (ac-ft) of water each year.

One purpose of the San Diego Water Board's *Annual Recycled Water Summary Report* is to monitor progress in reaching the goals identified in the State's Recycled Water Policy. The Report also provides an analysis and summary of information on the production, reuse, and quality of recycled water in the San Diego Region. Information analyzed in the report comes from surveys of recycled water agencies. The *Recycled Water Annual Summary Report* is designed to 1) raise awareness of the need for recycled water use in the San Diego Region and 2) encourage recycled water producers to take steps to increase the use of recycled water in their service area while maintaining the quality of the water to protect the beneficial uses of groundwater and surface waters of the San Diego Region.

The San Diego Region's recycled water agencies produced and beneficially reused more recycled water in 2012 than 2011. About 54.8 percent of treated wastewater produced was beneficially reused as recycled water in 2012. Twenty nine of the San Diego Region's 39 recycled water facilities reported that they treated approximately 105,000 acre feet (ac-ft) of wastewater, of which approximately 57,000 ac-ft of recycled water was beneficially reused, with the remaining volume either sent to the ocean for disposal or stored. The volume of recycled water that was reported as reused in the Region increased by 8,000 ac-ft from approximately 49,000 ac-ft in 2011 to 57,000 ac-ft in 2012. The percentage of treated wastewater beneficially reused as recycled water also increased from 44.6 percent in 2011 to 54.8 percent in 2012.

The San Diego Water Board regulates the production and discharge of recycled water through waste discharge requirements, Master Reclamation Permits, Water Reclamation Requirements (collectively referred to as "permits"), and waivers of waste discharge requirements. The Master Reclamation Permits are a tool intended to promote recycled water use by allowing the producer to regulate its users, rather than requiring each user to obtain separate requirements from the San Diego Water Board or the State Water Board.

The San Diego Water Board also collected information on the use type, use location, and compliance with permits. The number of reported use sites increased by 16 from

4,360 in 2011 to 4,376 in 2012. Although the number of inspections conducted by recycled water providers increased from 4,105 in 2011 to 4,282 in 2012, the number of sites inspected decreased from 2,995 to 2,693. The number of violations identified during the inspections, however, increased. In 2011, 2,995 sites were inspected with 341 violations identified at 53 sites; while in 2012, 2,693 sites were inspected, with 605 violations identified at 142 sites. The percent of inspected sites with violations also increased slightly from 2 to 5 percent.

Overall recycled water quality met discharge specifications across the Region, despite the violations noted above. The water quality data indicates that the average concentration of total dissolved solids (TDS), chloride, and sulfate in the source water decreased from 2011 to 2012. There was also a corresponding decrease in the average concentration of TDS in recycled water. Other constituents that showed decreased concentrations in recycled water from 2011 to 2012 were nitrate, total nitrogen, manganese, methylene blue-activated substances, and color. Concentrations of chloride, sulfate, fluoride, iron, percent sodium, boron, and turbidity, however increased from 2011 to 2012. Data for 16 of the wastewater treatment facilities from 2009 to 2012 were compared. The concentrations for 2009 to 2012 were generally within the range of historical data. Furthermore there are no discernible trends for individual facilities or constituents, suggesting that the overall quality of recycled water remained consistent for the last two decades.

The San Diego Water Board gathered data for this report from voluntary and required annual reports. All comparisons are approximations due to inconsistent methods of measuring, reporting and gathering data. In addition, volumes and percentages of recycled water produced and distributed may vary due to storage conditions and due to instances of production/distribution between agencies and jurisdictional areas of the San Diego and Santa Ana Water Boards.

**ATTACHMENT A- RECYCLED WATER ANNUAL SUMMARY 2012**  
**Data Tables and Charts**

<b>Recycled Water Facility Production</b>						
	<b># of Facilities Reporting</b>	<b>Permitted Flow (mgd)</b>	<b>Total Vol. Treated (ac-ft)</b>	<b>Volume Disposed (ac-ft)</b>	<b>Volume Reused (ac-ft)</b>	<b>Percent Reused (ac-ft)</b>
2009	29	146.9	104,777	49,376	54,928	52.4%
2010	27	148.8	74,043	32,449	41,594	56.2%
2011	30	145.6	109,764	62,913	48,955	44.6%
2012	29	155.9	104,791	38,480	57,397	54.8%

<b>RECYCLED WATER USE SITE SURVEY</b>								
<b>Reported User Data</b>								
<b>Year</b>	<b># of Sites</b>	<b>Total Reuse (ac-ft)</b>	<b>Average Reuse (ac-ft)</b>	<b>Median Reuse (ac-ft)</b>	<b># Inspections</b>	<b># Sites Inspected</b>	<b># Violations</b>	<b># Sites with Violations</b>
2009	3,981	40,764	10.2	3.8	4,403	2,303	405	72
2010	4,095	42,142	10.3	3.2	3,380	2,430	66	33
2011	4,360	42,415	9.7	2.9	4,105	2,995	341	53
2012	4,376	55,069	12.6	3.2*	4,282	2,693	605	142

\* median calculation does not include data from Moulton Niguel Water District

<b>Volume of Recycled Water by Hydrologic Area (Ac-ft)</b>											
<b>Year</b>	<b>901 San Juan</b>	<b>902 Santa Margarita</b>	<b>903 San Luis Rey</b>	<b>904 Carlsbad</b>	<b>905 San Dieguito</b>	<b>906 Penasquitos</b>	<b>907 San Diego</b>	<b>908 Pueblo</b>	<b>909 Sweet-water</b>	<b>910 Otay</b>	<b>911 Tijuana</b>
2009	14,539	2,917	313	4,827	2,839	7,413	1,346	0	1,661	2,815	1,477
2010	13,919	2,968	1,074	5,895	3,085	6,473	678	0	1,237	2,372	NR
2011	12,425	5,676	1,101	3,600	2,693	7,677	687	0	1,269	2,396	4,582
2012	10,235	6,421	1,351	8,311	3,299	12,744	1,296	0	2,308	4,458	4,644

NR: Not reported

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**SOURCE AND RECYCLED WATER QUALITY**

**Average Source Water Quality**

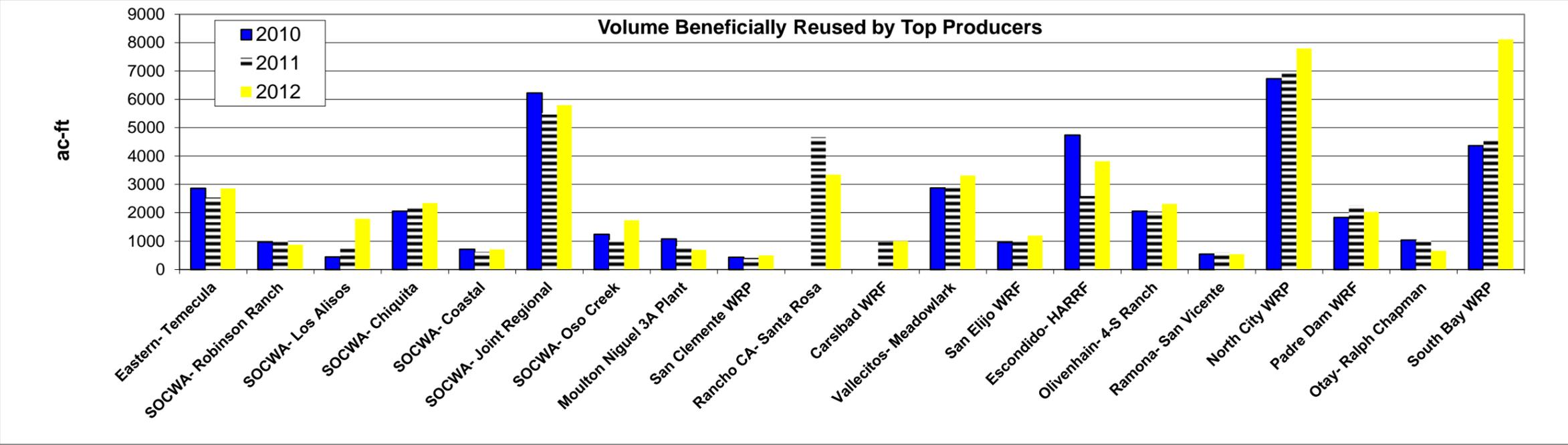
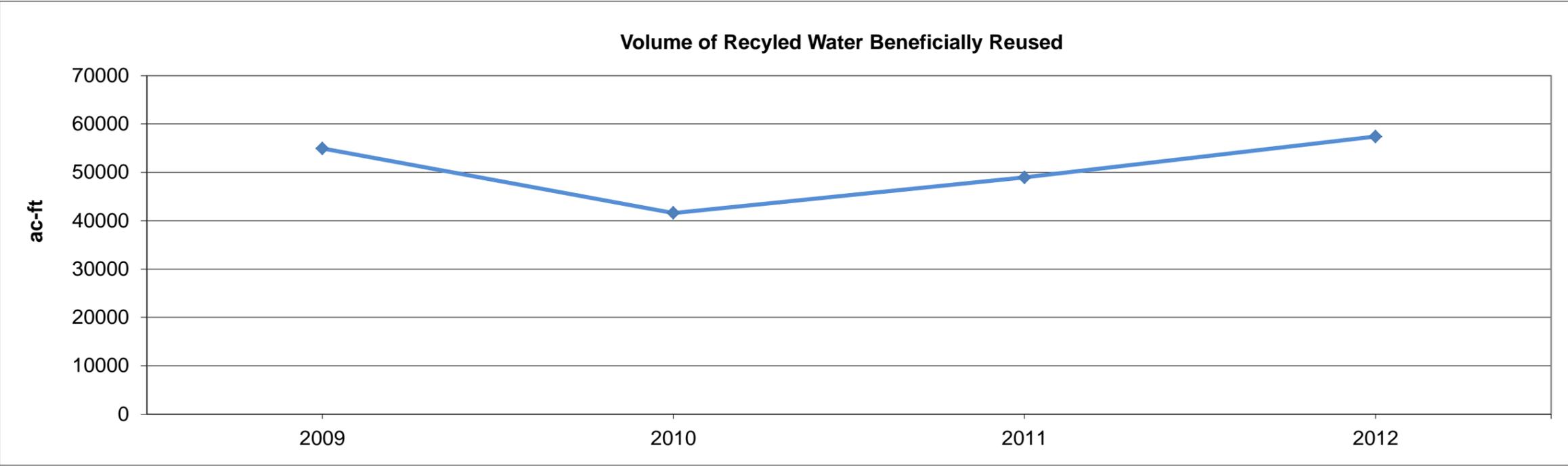
Year	TDS (mg/L)	Chloride (mg/L)	Sulfate (mg/L)
2009	685	126	211
2010	666	125	203
2011	578	120	150
2012	440	83	135

**Average Recycled Water Quality**

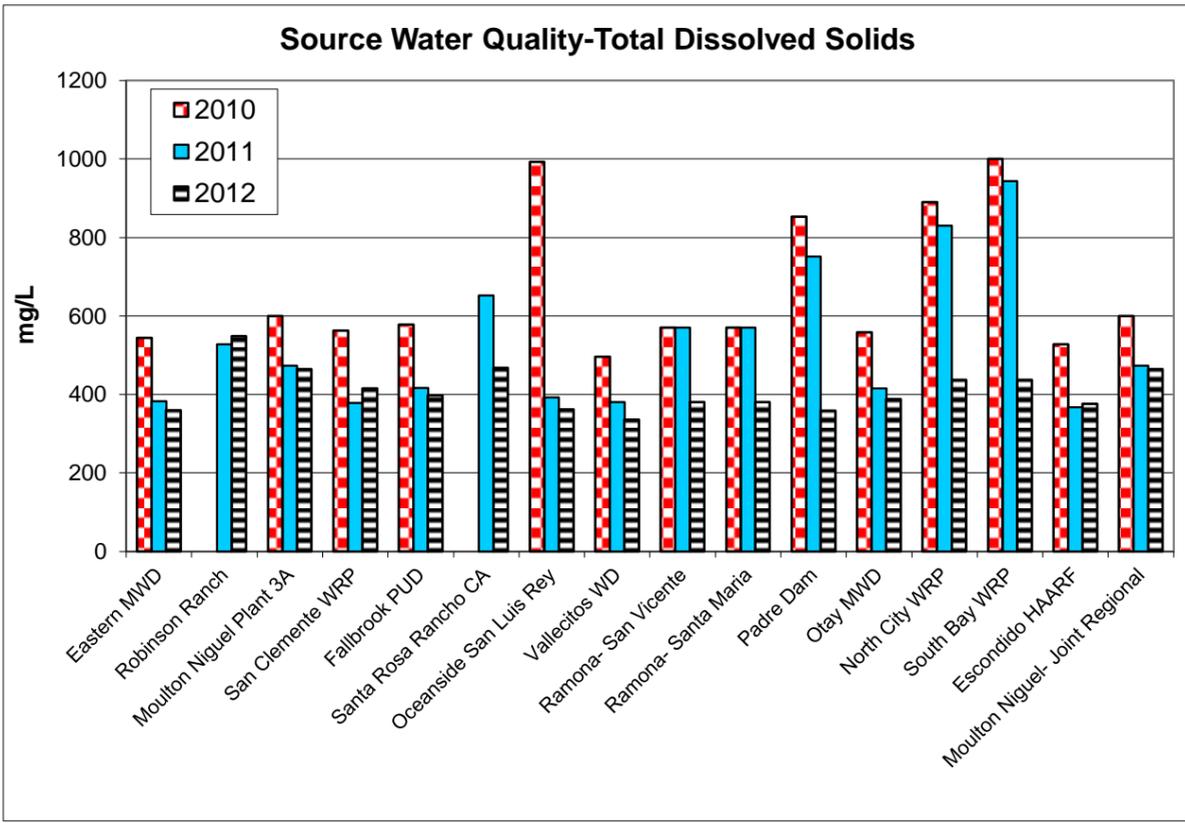
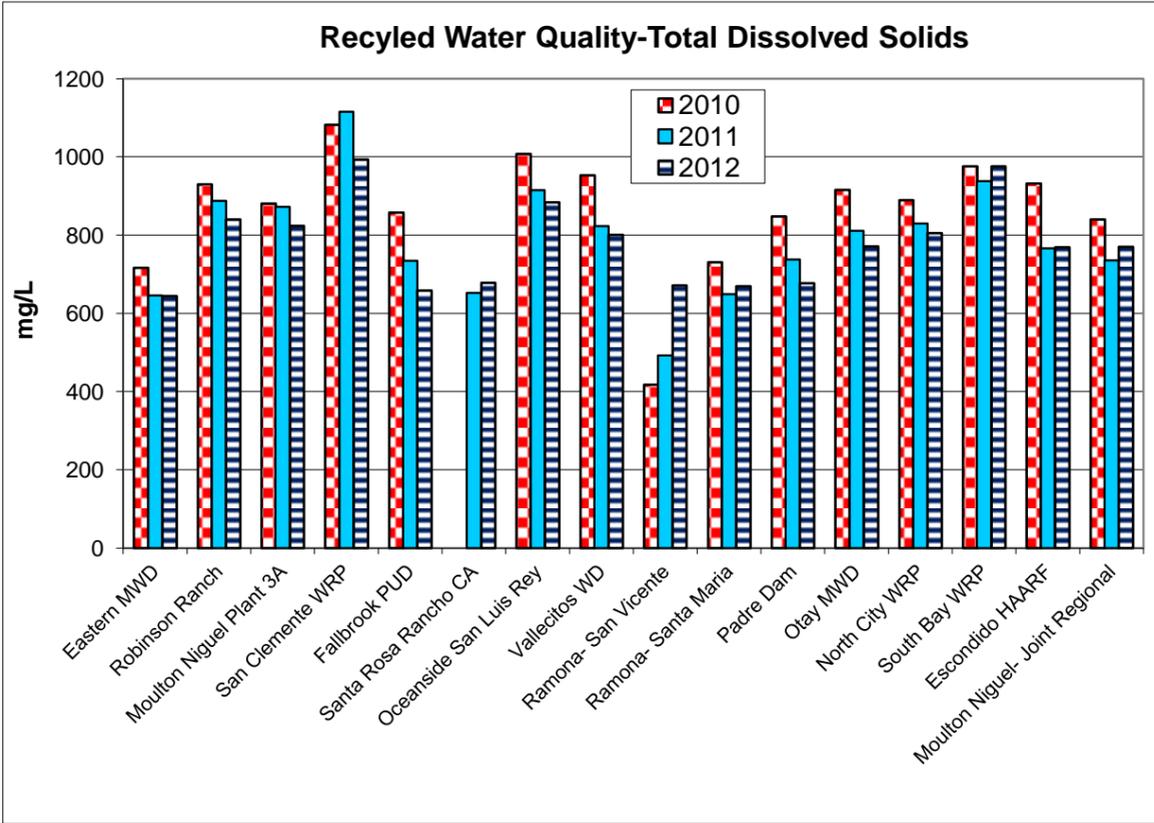
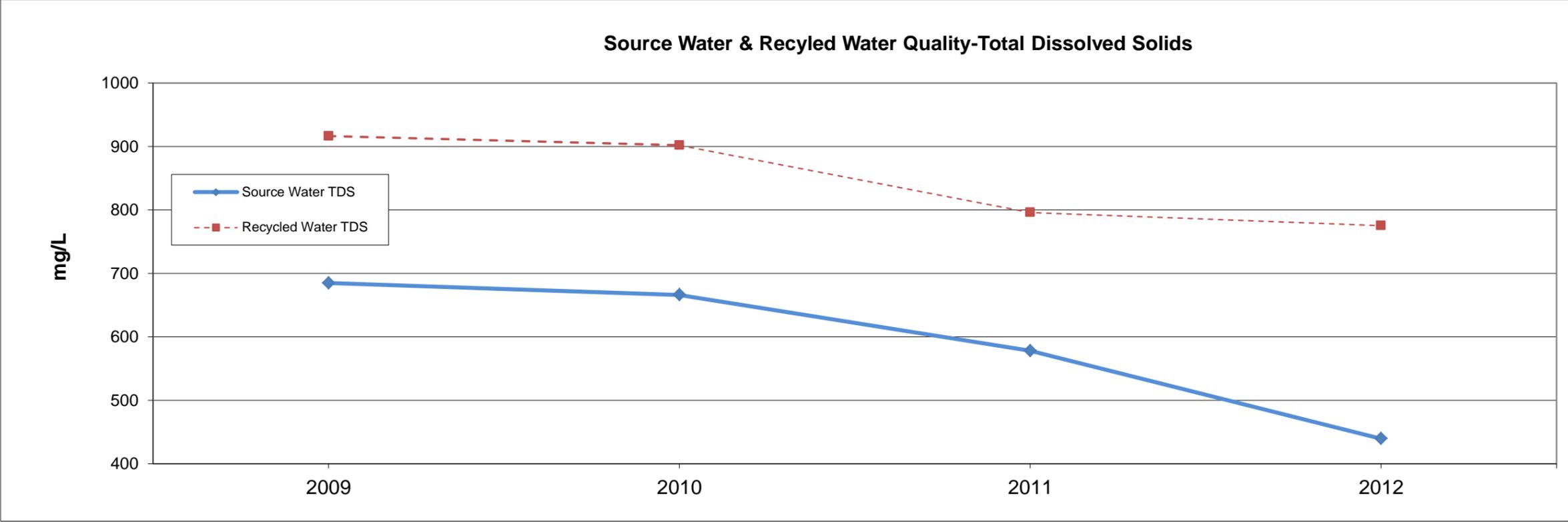
Year	TDS (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Percent Sodium (%)	Nitrate (mg/L)	Total Nitrogen (mg/L)	Iron (mg/L)	Manga-nese (mg/L)	MBAS (mg/L)	Boron (mg/L)	Turbidity Daily Avg (NTU)	Color (Units)	Fluoride (mg/L)
2009	917	224	245	49.3	18.0	7.4	0.11	0.04	0.16	0.38	1.0	6	0.75
2010	902	219	229	48.7	15.4	16.2	0.12	0.04	0.15	0.38	1.1	11	0.62
2011	796	208	186	48.3	16.6	11.5	0.12	0.05	0.14	0.37	0.9	12	0.62
2012	775	209	188	51.0	11.0	10.3	0.83	0.04	0.13	0.41	1.0	11	0.68

TDS= Total dissolved solids; MBAS= Methylene blue-activated substances

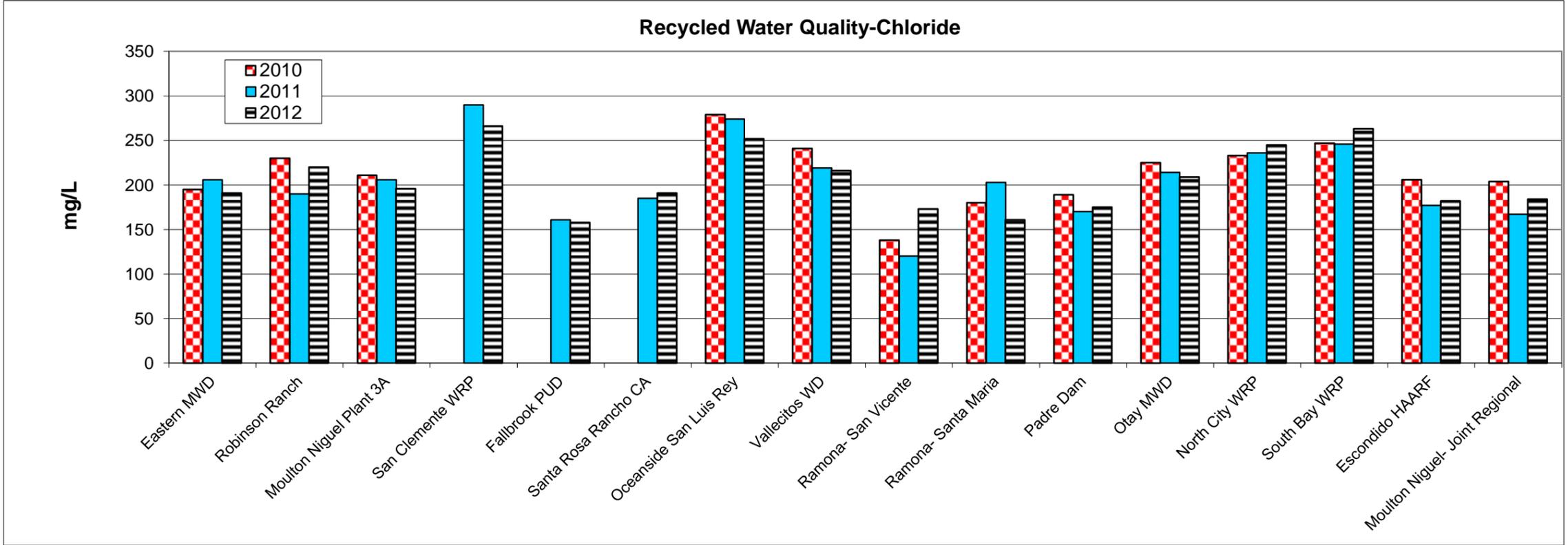
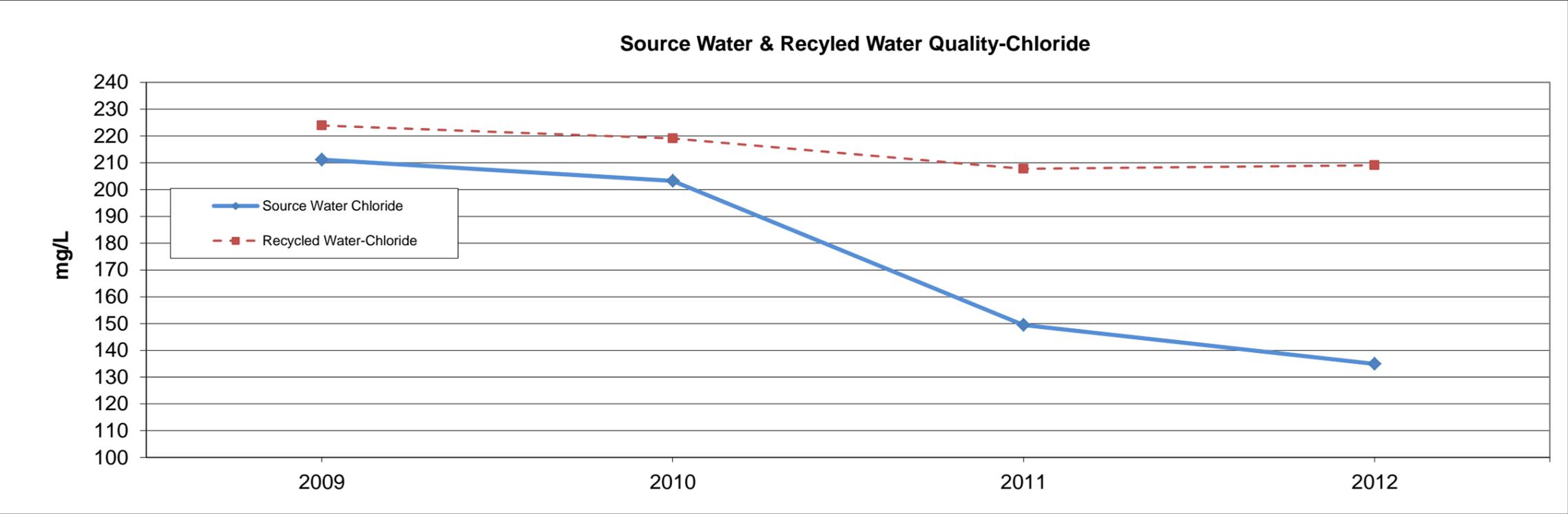
**ATTACHMENT A-RECYCLED WATER ANNUAL SUMMARY 2012**  
**Data Tables and Charts**



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