

Revised Response to Comments

Tentative Waste Discharge Requirements (WDRs) and Cease and Desist Order (CDO) for
City of Santa Paula, Santa Paula Water Recycling Facility (SPWRF or Facility)
Comment Deadline: October 2, 2017

List of Commenters:

Comment No.	Commenter	Date Received
1	City of Santa Paula (City)	October 2, 2017
2	Kate M. Neiswender, on behalf of the Malzacher family	October 18, 2017 (LATE COMMENT)

Response to Comments:

No.	Comment	Response
City of Santa Paula		
1-1	On September 1, 2017, the Los Angeles Regional Water Quality Control Board (Regional Board) released Tentative Waste Discharge Requirements (Tentative WDR) and a Cease and Desist Order (CDO) for the Santa Paula Water Recycling Facility (SPWRF). The City of Santa Paula (City) appreciates the opportunity to provide the following comments and recommendations to the Regional Board. We appreciate the Regional Board staff's efforts to work with the City to develop chloride limits and allow the City time to come into compliance with these requirements.	Comment noted.
1-2	The City is committed to protecting the beneficial uses of the Santa Clara River and the Santa Paula Groundwater Basins and has implemented several actions to protect these water resources. While the City of Santa Paula is not technically a Disadvantaged Community, the median household income in 2015 of \$54,657 ¹ was still well below the statewide median	Comment noted.

¹ <http://www.city-data.com/city/Santa-Paula-California.html>

household income of \$64,500. Despite its limited resources, the City has taken the following steps to protect beneficial uses:

1. As required by its WDR (R4-2007-0028), in 2010, it upgraded its wastewater treatment plant to a tertiary treatment facility with membrane bioreactor (MBR) system and UV disinfection. In addition, discharge to the Santa Clara River was eliminated to protect its beneficial uses. The discharge currently goes to a percolation and to the groundwater basin.
2. The City supported the development of the Lower Santa Clara River Salt and Nutrient Management Plan, which was adopted in 2015.
3. As a supplement to the City's 2006 prohibition on the installation or replacement of self-regenerating softeners (SRWS), the City implemented a water softener buyback program in 2015. As a result, 244 water softeners were removed as of July 2017. This is approximately 20% of the total numbers of SRWS estimated to in 2015 and over half of the 400 water softeners needed to reduce effluent chloride concentration to 110 mg/L.
4. In an effort to further reduce the chloride discharged directly to groundwater, the City is in the process of developing a recycled water program. A Notice of Intent (NOI) was filed with the State Board in December 2015 for coverage under the General Order for Water Recycling Requirements and a Notice of Applicability was issued by the Regional Board in August 2017.
5. Since the filing of the NOI, the City has been working with potential recycled water customers. United Water, Farmers Irrigation Company (FICO) and the Santa Paula Basin Pumpers Association have all indicated interest in taking delivery of the City's water. At certain times of the year, this could easily result in all the SPWRF's effluent going to reuse and not being discharged to the percolation pond.
6. In an effort to improve operation and management of the treatment processes, the City took ownership of the SPWRF in 2015 and hired a new treatment plant operator in March 2017.
7. As a result of these combined actions, average chloride discharges have decreased by almost 20% from 2457 lb/day in 2011 to 2003 lb/day in 2016.

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1-3	<p>Despite the considerable progress made to date, we are concerned that the City still may have difficulty complying with the requirements in the Tentative WDR and CDO. As described in more detail below, the City's concerns include:</p> <ol style="list-style-type: none"> 1. Proposed effluent limit for chlorides. 2. Proposed effluent limits for total coliform and turbidity 3. Proposed effluent limit for 'ammonia+nitrate+nitrite' 4. Proposed effluent limits Title 22 MCLs 5. Groundwater limitations language 6. Climate Change Plan requirement 7. Interim chloride groundwater limitation language 8. The time schedules for the groundwater investigation work plan and for the recycled water infrastructure design. 9. Effluent chloride samples should be collected as composite samples not grab samples. 10. Other monitoring program requirements 11. Corrections and clarifications. 	See specific responses to comments below
1-4	<p>Chloride</p> <p>A. The proposed mass-based chloride effluent limit in Table 9 (Section II.B.) of 79 lb/day is based on a very low effluent flow rate (70,000 gal/day). The City is concerned that even with full implementation of its recycled water program, discharge to the percolation pond may be necessary during certain times of the year (e.g., wet season). The City appreciates the efforts of the Regional Board staff to work with the City to explore a range of approaches that are protective of beneficial uses and commensurate with the City's resources.</p>	<p>The proposed mass-based chloride effluent limit is dependent on the chloride concentration of the SPWRF's discharge. The limit of 79 lbs/day is based on the City's current chloride concentration of 135 mg/L, which exceeds the groundwater quality objective of 110 mg/L. If the City is able to reduce the chloride concentration in its effluent, it will be able to discharge more flow. The City can also explore a range of approaches to mitigate the discharge of more chloride to the percolation ponds during wet seasons, including identifying storage opportunities or conducting a study on additional groundwater mixing capacities with various rain intensities.</p> <p>Further, the tentative Cease and Desist Order (CDO) provides a 10-year schedule for the City to progressively reduce chloride loadings to the groundwater by reducing the chloride concentration in the effluent through source control, diverting effluent for recycled water use, or both. Given the CDO, the City does not become subject to the mass-based chloride effluent limit of 79 lbs/day until December 7, 2027. In addition, the Regional Board may</p>

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		<p>reopen the WDRs at any time to address chloride concerns of the Regional Board and/or the City.</p> <p>The CDO also provides an option for the City to consider an alternative approach including a request to the Regional Board to consider a Basin Plan amendment for revision of the groundwater quality objective based on studies on chloride and salt-sensitive agriculture and after formation of a stakeholder working group. One study, the Literature Review and Evaluation (LRE), found that the best estimate of a chloride hazard concentration for avocado crops falls within the range of 100 to 117 mg/L. The LRE did not recommend a threshold for strawberries or nursery crops based on lack of evidence.</p>
	<p>B. The approaches evaluated are based on a groundwater mixing calculations (i.e., Chloride Model), described in the Tentative WDR, which indicate that it is possible to protect beneficial uses while allowing groundwater to be greater than 110 mg/L in a small area near the percolation pond. A proposed alternative to the current effluent limit is to evaluate groundwater quality objective compliance at 1,100 feet from the pond resulting in a higher mass-based effluent limit or an effluent concentration limit of 117 mg/L.</p> <p>The larger mixing zone, 1,100 feet instead of 150 feet from the pond, would come with a requirement to mitigate any impacts to active supply wells within the mixing zone. The City is aware of 3 active wells that are within approximately 400 feet of the SPWRF. An agricultural well is approximately 400 feet from the percolation pond and the City is actively working with the well owner to ensure that their water supply needs are met. Based on the information available to the City, the other two wells are domestic wells and, therefore, chloride levels below the Secondary MCL of 250 mg/L are protective. The City is in the process of reaching out to the well owners to determine what, if any, mitigation is needed.</p>	<p>Water Code section 13263 requires that WDRs implement water quality control plans (i.e., water quality objectives, beneficial uses, and anti-degradation provisions included in the Basin Plan). The Regional Board's Basin Plan prescribes a groundwater quality objective of 110 mg/L to protect beneficial uses. Therefore, the WDRs must include requirements that ensure that the City's discharge results in compliance with the groundwater quality objective. In addition, the City's proposal for a groundwater mixing zone of 1,100 feet does not provide protection of beneficial uses including agricultural use of groundwater for crop irrigation from several wells that are closer than 1,100 feet from the percolation ponds, and is thus not consistent with the Basin Plan. The closest water supply wells hydro-geologically downgradient from the percolation ponds are approximately 150 feet away from the percolation ponds. Groundwater must meet the basin plan groundwater quality objective before reaching these water supply wells.</p> <p>Chapter 4 of the Basin Plan does not authorize mixing zones for groundwater discharges. What the City is proposing would require an amendment to the Basin</p>

Using the Chloride Model, 110 mg/L can be met at 1,100 feet with the following combinations of concentration and flow:

Effluent chloride concentration (mg/L)	Calculated Flow to Ponds to meet Mass Reduction (MGD)	% mass reduction relative to "Baseline"	Calculated Effluent Mass load to groundwater (lb/day)	Estimated 10 year Groundwater Concentration @ 400 ft (mg/L)	Estimated 10 year Groundwater Concentration @ 1100 ft (mg/L)
130	0.69	70%	749	119.0	110
125	0.95	60%	991	117.5	110
120	1.24	50%	1,242	114.8	109
117	2.03	20%	1,982	113.9	110

Plan. Language has been added to the CDO indicating that if the City has not achieved the required 50% mass reduction by December 7, 2022, the City could propose a Basin Plan amendment, with supporting scientific and technical information and analysis demonstrating that beneficial uses would be protected, as well as documentation that such a proposal was discussed in detail by the stakeholder working group, for Regional Board consideration.

Two closest agricultural water supply wells are approximately 150 feet away from the percolation ponds. In addition, there is one well located within 300 feet of the percolation ponds. The City asserts these two wells are domestic wells for drinking water. However, based on communications between Regional Board staff and the owners of the three active wells, water from the wells are used for agricultural irrigation only. The well owners otherwise use potable water supplied by the City for its potable water needs.

To date, the City has provided no information or plan to the Regional Board to mitigate the chloride-impacted groundwater from these active wells.

To allow the effluent discharged to the percolation ponds to mix with incoming groundwater while also protecting the groundwater quality objective and agricultural water supply beneficial use in nearby wells, Regional Board staff agreed to the City's conceptual Chloride Model to meet the chloride groundwater quality objective of 110 mg/L at the first encountered water supply well downgradient from the percolation ponds, which is 150 feet away. Any further extension of a mixing zone is not consistent with the Basin Plan water quality objectives for Santa Clara-Santa Paula Groundwater Basin (DWR Basin No. 4-4), and it may not be protective of beneficial uses for agricultural water supply wells near the percolation ponds.

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		As a result, the Regional Board disagrees with the City's alternative proposal of setting the chloride groundwater limitation at 1,100 feet away from the percolation ponds.
	<p>C. As an annual average, the SPWRF chloride concentration was 133 mg/L in 2016 based on composite samples. The City believes that it can achieve an annual average effluent concentration of 125 mg/L or possibly less as a result of process optimization and water softener removals. This is based on the results to date of the Water Softener Rebate Program and recent improvements to operations and maintenance at the SPWRF.</p> <p>Prior to implementation of the rebate program, chloride effluent concentrations averaged 140-143 mg/L from 2012 to 2014 based on composite samples. After implementation and removal of 200 water softeners by the end of 2016, average chloride concentrations have dropped to 133 mg/L. As of July 2017, 244 water softeners have been removed. In addition to reductions attributed to the water softener removal program, the new operator for the SPWRF, hired in March 2017, has implemented improvements to reduce solids loadings and improve operation of the membrane system. Average monthly effluent chloride concentrations from June-August 2017 ranged from 121-127 mg/L.</p> <p>Because of the progress made, the City is requesting an annual average load limit of 991 lb/day with a concentration limit of 117 mg/L.</p> <p>Specifically, the effluent limit could be stated as, "The effluent chloride concentration shall not exceed 117 mg/L. However, if the concentration exceeds 117 mg/L and the average load for the previous 12 months is less than 991 lb/day, the effluent is considered to be in compliance with the effluent limitation."</p> <p>The City is also requesting that this limit be evaluated as an annual average. Chloride levels are expected to attenuate both in the percolation pond through mixing with effluent</p>	<p>All data indicates that the groundwater quality beneath and downgradient of the percolation ponds is immediately affected by the discharge to the percolation ponds. The groundwater quality beneath and surrounding the percolation ponds respond to the effluent quality quickly because of the sandy soil formation at the percolation pond area.</p> <p>Based on the monthly average of the SPWRF's effluent quality, the chloride concentration in the effluent still fluctuates widely in the range of 129 mg/L to 157 mg/L after January 2017 when more than 200 SRWS units were removed. The City originally estimated that the chloride concentration in the effluent would be below 110 mg/L after 400 SRWS units were removed. The City projected that each 100 SRWS units removed would result in a 11 mg/L decrease in the effluent chloride concentration. Although more than 200 SRWS units have been removed as of September 2017, the monthly average chloride concentrations in the effluent do not indicate a stable reduction of chloride. The monthly average chloride concentration in the effluent prior to implementation of the City's SRWS Buy Back Program was in the range of 129 to 136 mg/L based on data collected in April through September 2015. After 255 SRWS units were removed by September 2017, the chloride concentration remained at 129 mg/L. Below is the summary of monthly averaged chloride concentrations as reported by the City, which indicates no consistent improvements:</p>

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	<p>already in the pond and again in the groundwater. In addition, chloride impacts to agriculture are based on long term exposure to chloride rather than to acute effects.</p> <p>Assuming there are no other groundwater discharges that would have an impact, this is expected to result in a groundwater concentration at 1,100 feet of 110 mg/L. To ensure that no adverse impacts result from the potential for groundwater to exceed 110 mg/L within 1,100 feet of the percolation pond, the City will enter into agreements with any well owner that is down gradient of the percolation pond and within 1100 feet of the pond to ensure that water supply is available to meet the needs of the well owner. It should be noted that at the likely effluent concentration of 125 mg/L the proposed mass limit would result in a groundwater concentration of 117 mg/L at the nearest agricultural well to the SPWRF. This concentration has been shown to be protective of agricultural beneficial uses in the Santa Clara River as described in the Santa Clara River Chloride TMDL and Site Specific Objective (Resolution No. R4-2008-012).</p>	<table border="1"> <caption>Table 5 – Monthly Average Chloride Concentration^[1] in Effluent Compared to Accumulated Number of SRWS Removed</caption> <thead> <tr> <th>Period</th><th>Accumulated Number of SRWS Removed</th><th>Effluent (mg/L)</th></tr> </thead> <tbody> <tr><td>April 2015</td><td>0</td><td>135</td></tr> <tr><td>May 2015</td><td>0</td><td>134</td></tr> <tr><td>June 2015</td><td>0</td><td>132</td></tr> <tr><td>July 2015</td><td>0</td><td>136</td></tr> <tr><td>August 2015</td><td>0</td><td>134</td></tr> <tr><td>September 2015</td><td>0</td><td>129</td></tr> <tr><td>October 2015</td><td>23</td><td>132</td></tr> <tr><td>November 2015</td><td>46</td><td>133</td></tr> <tr><td>December 2015</td><td>58</td><td>129</td></tr> <tr><td>January 2016</td><td>74</td><td>146</td></tr> <tr><td>February 2016</td><td>83</td><td>139</td></tr> <tr><td>March 2016</td><td>96</td><td>138</td></tr> <tr><td>April 2016</td><td>106</td><td>137</td></tr> <tr><td>May 2016</td><td>115</td><td>138</td></tr> <tr><td>June 2016</td><td>122</td><td>138</td></tr> <tr><td>July 2016</td><td>125</td><td>134</td></tr> <tr><td>August 2016</td><td>135</td><td>125</td></tr> <tr><td>September 2016</td><td>158</td><td>133</td></tr> <tr><td>October 2016</td><td>166</td><td>142</td></tr> <tr><td>November 2016</td><td>196</td><td>140</td></tr> <tr><td>December 2016</td><td>200</td><td>141</td></tr> <tr><td>January 2017</td><td>220</td><td>146</td></tr> <tr><td>February 2017</td><td>228</td><td>157</td></tr> <tr><td>March 2017</td><td>233</td><td>143</td></tr> <tr><td>April 2017</td><td>236</td><td>131</td></tr> <tr><td>May 2017</td><td>243</td><td>134</td></tr> <tr><td>June 2017</td><td>244</td><td>134</td></tr> <tr><td>July 2017</td><td>247</td><td>129</td></tr> <tr><td>August 2017</td><td>254</td><td>125</td></tr> <tr><td>September 2017</td><td>255</td><td>129</td></tr> <tr> <td>Monthly Range^[2]</td><td>---</td><td>136.4 ± 7.4</td></tr> </tbody> </table> <p>Table Notes:</p> <p>[1] All data collected from grab samples.</p> <p>[2] Data range is based on one standard deviation and results from data collected between October 2015 and September 2017.</p> <p>The City's proposed effluent limit of 991 lb/day is based on a larger mixing zone with a compliance point at 1,100 feet downgradient from the percolation pond area, and the reduction of chloride in the effluent to 117 mg/L. As discussed immediately above (see Response to Comment 1-4.B), a mixing zone of 1,100 feet is not authorized by the Basin Plan and would not be protective of beneficial uses. Further, the City's stated intent of reducing the chloride in the effluent to 117 mg/L is not supported by the effluent quality data. There is also no data to support the City's belief that it can consistently achieve 125 mg/L either through the SRWS Buy Back</p>	Period	Accumulated Number of SRWS Removed	Effluent (mg/L)	April 2015	0	135	May 2015	0	134	June 2015	0	132	July 2015	0	136	August 2015	0	134	September 2015	0	129	October 2015	23	132	November 2015	46	133	December 2015	58	129	January 2016	74	146	February 2016	83	139	March 2016	96	138	April 2016	106	137	May 2016	115	138	June 2016	122	138	July 2016	125	134	August 2016	135	125	September 2016	158	133	October 2016	166	142	November 2016	196	140	December 2016	200	141	January 2017	220	146	February 2017	228	157	March 2017	233	143	April 2017	236	131	May 2017	243	134	June 2017	244	134	July 2017	247	129	August 2017	254	125	September 2017	255	129	Monthly Range ^[2]	---	136.4 ± 7.4
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		<p>Program or any other means. With that said, the WDRs must include requirements such that the current groundwater quality objective of 110 mg/L is achieved. The City references Resolution No. R4-2008-012 as support for its proposal for 117 mg/L. However, Resolution No. R4-2008-012 was an amendment to the Basin Plan establishing site-specific objectives for the Upper Santa Clara River. The Regional Board is considering WDRs for the SPWRF, not a Basin Plan amendment.</p> <p>With the exception of the SRWS Buy Back Program, the City has no other plan to reduce the chloride concentration in the effluent. Rather, its primary efforts to achieve chloride compliance is through its intended Recycled Water Use Program, which would reduce the chloride loadings to the percolation ponds by diverting effluent to other recycled water use locations where the groundwater aquifer has a sufficient capacity for chloride loadings. The proposed effluent limit and CDO was developed based on the City's Recycled Water Use Program proposal.</p> <p>Lastly, an annual average limitation is not appropriate for the discharge and is further not supported by the Basin Plan. There is no indication in the Basin Plan that the Regional Board intended the groundwater quality objective to be expressed as an annual average. Further, the soil has very limited capacity to attenuate chloride as both soil and chloride are negatively charged. And the City's Chloride Model demonstrates that the SPWRF's effluent is the dominant flow in the groundwater. The incoming groundwater to the 150 foot mixing zone area will not provide significant attenuation to the chloride concentration. The City's proposed annual average also does not provide timely evaluation for protection to agricultural use of groundwater.</p>
	D. In addition, the requested effluent limit is consistent with the Lower Santa Clara River SNMP and the State Recycled Water	The Lower Santa Clara River Salt and Nutrient Management Plan (SNMP), or any SNMP for that matter,

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	<p>Policy. Specifically, the SNMP determined that assimilative capacity existed in the West of Peck Road Basin where the SPWRF is located. It was estimated that the SPWRF discharge contributed less than 15% of the chloride load to the basin. This load contribution was determined assuming a SPWRF effluent chloride concentration of 150 mg/L or 2350 lb/day. Current chloride loads are significantly lower at 2003 lb/day in 2016.</p>	<p>does not change the groundwater quality objectives in the Basin Plan. Further, the City's comparison between the assimilative capacity of a specific basin and loadings discharged to a relatively small percolation pond area is misleading. The Regional Board agrees that the West of Peck Road Groundwater Basin may have sufficient assimilative capacity for recycled water application. However, groundwater data collected near the percolation pond area indicates that the percolation pond area is a hot spot with groundwater chloride concentrations exceeding the Basin Plan's groundwater quality objective of 110 mg/L. The City will need to conduct groundwater sampling at locations where recycled water use is proposed as a baseline to determine local assimilative capacity.</p>
	<p>E. The City is committed to implementing its Recycled Water Program and filling a critical need for reliable water supply for local agriculture. Implementation of the Recycled Water Program could result in further chloride reductions because some of the reuse is expected to occur in other basins with greater assimilative capacity. In addition, the City's Recycled Water Program is consistent with the Recycled Water Policy in that planned uses will result in limited, if any, degradation to groundwater. The planned recycled water uses are for irrigation where water will be applied at agronomic rates reducing impacts to groundwater and many of the uses will be in areas with more assimilative capacity (e.g., Oxnard Forbay, East of Peck Road) or no impact to groundwater (South Mountain).</p>	<p>Comment noted. The Statewide General Permit Order WQ 2016-0068-DDW for Recycled Water Use also requires that receiving water quality upon application of recycled water be consistent with water quality objectives specified in the Basin Plan.</p>
1-5	<p>Nitrogen</p> <p>The proposed effluent limit for 'ammonia+nitrate+nitrite' in Table 9 (Section II.B.) is based on a wasteload allocation for a TMDL for the Santa Clara River. Specifically, it is based on the non-point source allocation in the Santa Clara Nitrogen TMDL as discussed in Finding 33 of the Tentative WDR (p. 14). The Water Recycling Facility is a point source and, therefore, should not be subject to a non-point source allocation. Therefore, this limit is not applicable to the City's current discharge to groundwater.</p>	<p>The Facility's discharge is subject to the Santa Clara River Nitrogen TMDL. Based on the reading of the TMDL, there is no difference in the allocation between surface water and groundwater discharges in relation to the Facility. The TMDL specifically assigns thirty-day average wasteload allocations for total ammonia as nitrogen (2.0 mg/L) and nitrate plus nitrite as nitrogen (8.0 mg/L) to the Santa Paula POTW. For ammonia+nitrate+nitrite as nitrogen, this equates to 10 mg/L. This the same allocation that the TMDL establishes</p>

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	<p>The City requests that the effluent limit be based on the MCL for nitrate of 10 mg/L.</p>	<p>for load allocations for nonpoint sources. Accordingly, whether the Facility's discharge is subject to the wasteload allocations or load allocation, the effluent limit applicable to the Facility remains the same as 10 mg/L for combined ammonia+nitrate+nitrite.</p> <p>The Regional Board also notes that the City's current WDRs for the Facility includes an ammonia+nitrate+nitrite effluent limit of 10 mg/L. Monitoring data indicates the City is able to meet the current effluent limit and offers no evidence it will be unable to do so in the future.</p>
1-6	<p>Total Coliform and Turbidity</p> <p>A. The proposed effluent limits for total coliform (Section II.D) and turbidity (Section II.E.) are concerns for the City.</p> <p>The SPWRF is designed to meet a total coliform limit of 23 MPN/100 ml and the City is concerned that the effluent cannot consistently meet the proposed effluent limit of not exceeding 2.2 MPN/100 ml on 2 consecutive days. In addition, the SPWRF may have difficulty complying with the requirement to not exceed 23 MPN/100 ml more than once in a 30-day period. Based on data from October 2015 through August 2017, the discharge would have exceeded each of these requirements 7 times.</p> <p>There is no indication that current operations have an adverse impact on groundwater levels with respect to bacteria. As noted in the current WDR (Order No. R4-2007-0028) in Finding 10,</p> <p><i>"The disinfection level required for the treated wastewater discharged to the percolation/evaporation ponds will be according to the limits established in these WDR's. The disinfection level required for treated wastewater reuse will be in accordance with water recycling requirements established per Title 22 requirements."</i></p>	<p><u>The Regional Board agrees to maintain the City's current effluent limitations for total coliform as follows:</u></p> <p><u>Effluent shall, at all times, be adequately disinfected and oxidized and shall meet the following effluent limitations:</u></p> <ol style="list-style-type: none"> <u>1. the median concentration of total coliform bacteria shall not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed; and</u> <u>2. the number of total coliform bacteria shall not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.</u> <p><u>Samples shall be collected at a time when wastewater flow and characteristics are most demanding (e.g., during peak flows) on treatment facilities and disinfection processes.</u></p> <p><u>The Regional Board, however, notes that t</u> The Regional Board disagrees and finds the effluent limits for total coliform and turbidity appropriate if the City is going to be successful in its intended recycling efforts.</p>

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	<p>The City requests that the current limits be maintained of not exceeding 23 MPN/100 ml as a 7 day median and not exceeding 240 MPN/100 ml more than once in a 30-day period as is applicable for a discharge to groundwater.</p>	<p>The City plans to use the SPWRF's tertiary-treated and ultraviolet light disinfected effluent for recycled water applications including irrigation at a golf course and for irrigating crops. As on June 14, 2017, the City's proposed recycled water uses were enrolled under the statewide general water reclamation requirements (Order WQ 2016-0068-DDW). Section B.1.a of Order WQ 2016-0068-DDW states that recycled water distribution and use permitted under the General Order shall be in compliance with recycled water regulations. <u>In order for the City to be successful in its planned recycling efforts to comply with the chloride limitations, its effluent will need to meet the most stringent recycled water total coliform criteria so as to be available for all applicable recycled water applications. (including its subsequent revisions) contained in California Code of Regulations, title 22, sections 60001 — 60355. Section 60304 (Use of Recycled Water for Irrigation) specifies that recycled water used for surface irrigation, including irrigation at a golf course, shall be disinfected tertiary recycled water. Pursuant to Section 60301.230(b), disinfected tertiary recycled water shall not exceed the following total coliform criteria:</u></p> <ol style="list-style-type: none"> 1. <u>2.2 MPN/100 ml, 7-day median;</u> 2. <u>23 MPN/100 ml, 30-day;</u> 3. <u>240 MPN/100 ml, any sample.</u> <p><u>Based on the 5-year total coliform effluent data recorded between July 1, 2012 and June 30, 2017, the City would have had 63 exceedances of 2.2 MPN/100 ml, which is equivalent to 3.5% of all total coliform data. This indicates that the SPWRF is capable of consistently meeting the prescribed total coliform limitations.</u></p> <p><u>In order for the City to be successful in its planned recycling efforts to comply with the chloride limitations, its effluent must meet the most stringent recycled water total coliform criteria so as to be available for all applicable recycled water applications.</u></p>

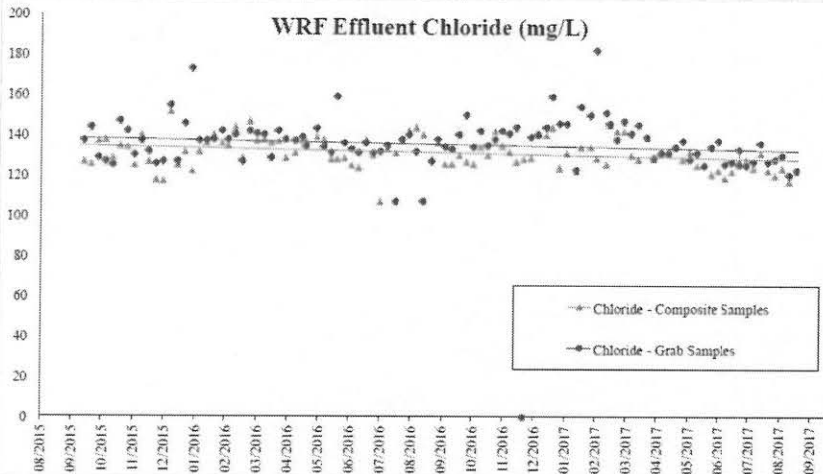
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	<p>B. The City requests that turbidity not be included as an effluent limit. While a Secondary MCL is listed for Turbidity in Attachment A-5 of the Tentative WDR, it is 5 NTU as opposed to the effluent limit of 0.2 and 0.5 NTU listed in Section II.E. Turbidity is an indicator of proper operation of the UV disinfection system and is an operational parameter that measures how particles reflect and absorb light. The wording of the turbidity effluent limit is taken directly from the definition of Filtered Wastewater in Attachment D of the Statewide General Order for Water Recycling Requirements (i.e., WQO 2016-0068-DDW) and from Section 60301.320 in Title 22 of the California Code of Regulations. Filtered wastewater is required to meet the requirements for disinfected tertiary recycled water (Title 22, Section 60301.230). These definitions and requirements are related to recycled water uses that are not the subject of the Tentative WDR and are covered under the Statewide General Order and Notice of Applicability issued by the Regional Board. The turbidity limits of 0.2 and 0.5 NTU are not applicable to protection of groundwater quality and should not be included in the WDR.</p> <p>The City requests that the turbidity specification be included in Section VI.L, Construction, Operation and Maintenance Requirements. Other regions include turbidity specifications in this section (e.g., Order No. R5-2016-0010, City of Turlock) or otherwise as a separate requirement that is not an effluent limit (e.g., Order No. R1-2014-0002, Russian River County Sanitation District).</p>	<p>The Regional Board agrees. Turbidity effluent limitation is necessary, as it is critical for the effectiveness of ultraviolet light for disinfection and ultimately to ensure proper disinfection of the effluent. The SPWRF utilizes six membrane bioreactors (MBRs), which are the combination of a membrane process such as microfiltration (MF) with a biological wastewater treatment process. The MBR is based on the conventional wastewater process, and the separation of microorganisms, organic matter, suspended solids, and turbidity is performed by filtration with membranes. The pore sizes of MF range from 0.1 to 10 µm. According to the SPWRF operator during a site inspection on December 28, 2015, the pore size of MF used at the SPWRF is less than 1 µm.</p> <p>Based on the 5-year turbidity effluent data recorded between July 1, 2012 and June 30, 2017, the City would have had 34 exceedances, which is equivalent to 1.86% of all turbidity data. This indicates that the SPWRF is capable consistently meeting the prescribed turbidity limitations.</p> <p>The turbidity requirement is critical for the effectiveness of ultraviolet light for disinfection. High turbidity of wastewater would interfere with the UV light and cause dysfunction of disinfection. The turbidity limits proposed in the tentative WDRs are based on Section 60301.320(b) when membrane technology is used to treat wastewater.</p> <p><u>However, the Regional Board agrees to revise the effluent limitations for turbidity in Section II.E. of the tentative permit, as follows:</u></p> <p><u>1. An average of 2 Nephelometric Turbidity Units (NTU) within a 24-hour period;</u></p>

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		<p><u>2. 5 NTU more than 5 percent of the time within a 24-hour period; and</u></p> <p><u>3. 10 NTU at any time.</u></p> <p><u>This is consistent with the City's existing turbidity requirements.</u></p> <p>In order for the City to be successful in its planned recycling efforts to comply with the chloride limitations, its effluent must meet the most stringent recycled water total coliform criteria so as to be available for all applicable recycled water applications. The City's ability to meet the total coliform criteria is dependent on an effective disinfection system. Therefore, the proposed turbidity effluent limits are appropriate and reasonable.</p>
1-7	<p>Title 22 MCLs</p> <p>Proposed effluent limits have been established for all Title 22 MCLs (II.F.). Without a finding of reasonable potential it is not appropriate to include effluent limits for all MCLs.</p> <p>The only constituent in Table A-4 of Attachment A (i.e., Organic Chemicals) that was detected above detection limits is bis(2-ethylhexyl phthalate) and it was not detected above the MCL. Of the detected constituents in Attachment A, the only constituents detected above an MCL are ones that have effluent limits assigned in Table 9 of the Order. Therefore, Section II.F. is redundant. The proposed groundwater limitations in Section III.C. and the monitoring requirements in Table 3 of Section IV.B. of the Monitoring and Reporting Program are sufficient to ensure protection of beneficial uses.</p> <p>The City requests that Section II.F. be removed.</p>	<p>Section II.F. will not be removed as requested. The Regional Board is not required to find reasonable potential prior to including effluent limits in state WDRs. The inclusion of effluent limits based on Title 22 MCLs for organic and inorganic compounds, radionuclides, and disinfection byproducts is a general practice for all WDRs for wastewater treatment facilities in order to protect receiving water quality, beneficial uses, and public health. The City plans to recycle its effluent for Title 22 non-potable applications, which include: 1) landscape irrigation at schools, parks, golf courses, and residential areas; 2) agricultural irrigations; 3) street sweeping; and 4) dust control, soil compactions, and construction uses. Pollutants contained in the recycled water, including those subject to MCLs, may eventually reach the groundwater and impact groundwater quality. Therefore, effluent limits based on Title 22 MCLs are appropriate.</p> <p>The Regional Board also notes that the City's current WDRs include effluent limits based on Title 22 MCLs. Monitoring data indicates the City is able to meet the current effluent limits and offers no evidence it will be unable to do so in the future.</p>

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		Further, Section II.F is not redundant to Section III.C, or the monitoring and reporting requirements specified in the Monitoring and Reporting Program. Section II.F is for effluent quality and Section III.C is for groundwater quality. Also, the City is confusing effluent and groundwater limitations with monitoring requirements. The monitoring requirements do not establish limits for the effluent or groundwater quality, rather they specify such things as sampling frequency and analysis. Therefore, these sections serve their own specific purpose and are not redundant to each other.
1-8	<p>Groundwater Limitations</p> <p>The groundwater limitations in Section III.B. state that the groundwater shall not exceed the stated limits. However, it is possible that the exceedances are not due to the SPWRF discharge. Section E.5. of the current WDR (Order No. R4-2007-0028) states that</p> <p><i>"The discharge of treated wastewater from the wastewater treatment plant shall not cause the receiving water to exceed the following limits"</i></p> <p>The City requests that the statement "the discharge <u>can not cause</u> an exceedance of a groundwater limitation" be added to Section III.B. consistent with the current WDR.</p>	<p>The Regional Board agrees to modify the first sentence of Section III.B as follows:</p> <p><i>"The discharge of treated wastewater from the SPWRF shall not cause an exceedance of the following groundwater limitations in Table 10 below."</i></p>
1-9	<p>Climate Change Plan</p> <p>Provision IV.C. requires the City to develop a Climate Change Plan. Given that the Regional Board's policy regarding Climate Change has yet to be adopted and with everything else the City needs to do to comply with the chloride limits, the City would prefer not to expend its limited resources on this Plan. While the State Water Board adopted Resolution 2017-0012 in March 2017 to promote proactive approaches to addressing the challenges posed by climate change, the Los Angeles Regional Board is still in the process of developing a specific approach. The Regional Board issued an initial Framework for Climate Change and Adaption in 2015 and is planning to issue a resolution articulating</p>	<p>The Regional Board will not remove this requirement as requested. Provision VI.C. (not IV.C.) requires the City to submit a Climate Change Plan to the Regional Board no later than 12 months after adoption of the Order. The Regional Board has begun including this standard requirement as permits are renewed. For example, this requirement was included in the Vista Canyon Water Factory WDRs/WRRs, adopted by this Regional Board on June 9, 2016.</p> <p>Further, the City attended the Climate Change Workshop held by this Regional Board in August 2017, which provided the City with concepts to develop the Climate</p>

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	the region's approach by the end of 2017. It is the City's understanding that no other permits have been issued in the Los Angeles Region with a requirement to develop a climate change plan. The City believes a regional effort would be more effective in addressing climate change and is concerned that the City does not have the resources to develop such a plan without guidelines and/or coordination with other communities.	Change Plan. The Regional Board believes the City will have ample time to develop the Climate Change Plan prior to the submittal deadline.
1-10	<p>Cease and Desist Order</p> <p>A. The interim chloride effluent limitations in Table 4 of the Tentative CDO include an effluent limit and a groundwater limitation. The City appreciates the protection provided by interim limits for both effluent and groundwater limitations. However, similar to our request regarding the groundwater limitation language in the Tentative WDR, the City requests that the groundwater limitations include a statement that "The SPWRF Discharge cannot cause an exceedance..."</p> <p>B. In addition, the City is concerned that consistent compliance with the interim groundwater limit of 133 mg/L is uncertain. The interim groundwater effluent limit was established based on the results of the groundwater mixing calculation for an effluent chloride concentration of 135 mg/L and an effluent flow rate of 2.2 MGD. While average monthly effluent concentrations have been generally decreasing, they are variable and ranged from 122-138 mg/L based on composite samples taken between October 2015 and June 2017. To account for natural variability in effluent concentrations, the City requests that the interim groundwater limit through November 2, 2020 be set at 136 mg/L based on the maximum effluent concentration observed since October 2015 of 138 mg/L.</p> <p>C. In addition, the City is concerned that the completion dates for the Groundwater Chloride Investigation and Well Protection</p>	<p>See Response to Comment No. 1-8. The Regional Board agrees to make consistent changes to the CDO.</p> <p>The interim groundwater limits are prescribed based on the Chloride Model prepared by the City. According to the Chloride Model, the City is confident that the model has incorporated conservative assumptions and will be able to allow mixing with incoming groundwater to achieve compliance with the interim and final groundwater limitations. Based on the review of the SPWRF's chloride monthly average effluent concentrations and groundwater data in the past two years (since the SRWS Buy Back Program was implemented in Oct. 2015 through Sep. 2017), the Regional Board agrees that the effluent chloride concentrations fluctuated greatly in a range between 125 mg/L and 157 mg/L, which resulted in the varying groundwater chloride concentrations from 121 mg/L to 136 mg/L. To allow time for the City to reduce chloride loadings to the percolation ponds, the interim groundwater limitations in the CDO have been revised to be 136 mg/L until December 7, 2020. This accommodates the fluctuation of the effluent chloride concentration.</p> <p>The Regional Board agrees to provide more time for the City to prepare the Groundwater Chloride Investigation</p>

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	<p>Workplan (i.e., March 1, 2018) in 3.B. of the Tentative CDO and for the Recycled Water Infrastructure Design (i.e., June 1, 2018) in 3.C. will not provide the City adequate time to complete these tasks.</p> <p>To complete the Groundwater Chloride Investigation and Well Protection Work Plan, the City needs to work with private well owners to establish agreements to gain access and conduct initial sampling and assessment of the wells in order to complete the assessments required. Negotiating agreements with the well owners may not be a trivial process and more time is needed to complete this process.</p> <p>Therefore, the City requests the date for completion be changed from March 1, 2018 to June 1, 2018. In addition, the City may need more than 60 days to implement the plan after receiving approval from the Executive Officer. Therefore, the City requests that the requirement be to implement the plan within 120 days from the Executive Officer's approval.</p> <p>D. For the Infrastructure Design, the City has provided proposed schedules for this in previous communications including a schedule provided on March 14, 2017 that included a milestone to initiate design of infrastructure for recycled water by June 2019. While the City has made good progress in discussions with the Farmers Irrigation Company (FICO) and United Water, time is needed to complete negotiations and finalize agreements. Therefore, the City requests that the original estimate of June 1, 2019 replace the current date of June 1, 2018. This will still allow the City to complete construction by June 1, 2022 as required by 3.e of the Tentative CDO.</p>	<p>and Well Protection Workplan. The deadline is revised to June 1, 2018 (CDO 3.B) and the workplan needs to be implemented within 120 days from the Regional Board Executive Officer's approval.</p> <p>The City shall submit the infrastructure design for recycled water delivery by December 1, 2018 (CDO 3.C), instead of June 1, 2018. This will allow time (39 months from Dec 1, 2018 through March 1, 2022) for the City to comply with the necessary regulatory requirements and obtain permits, and proceed with infrastructure construction.</p> <p>The infrastructure construction shall be completed by March 1, 2022 (CDO 3.E), instead of December 1, 2021. The City needs to evaluate, by June 1, 2022, whether the diversion of effluent for recycled water use can meet the 50% reduction requirement specified in the CDO Table 4, Interim Chloride Limitations. The construction needs to be completed at least 3 months prior to the evaluation deadline of June 1, 2022 to confirm 50% effluent reduction is achievable by December 7, 2022.</p>
1-11	Chloride monitoring	The Regional Board agrees to use 24-hour composite sampling instead of grab samples. Revisions were made in the MRP.

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	<p>Chloride samples are currently required to be collected as grab samples in Table 3 of the MRP (p.7). Composite samples are more representative of the water quality that may impact the beneficial uses of the receiving water. This is also consistent with the Influent Monitoring Requirements for chloride shown in Table 2. As shown in Figure 1, average monthly chloride values are less variable and are generally lower when based on composite samples than on grab samples.</p>  <p>Therefore, the City requests that the Type of Sample specified for chloride in Table 3 be changed to 24-hour composite.</p>	
1-12	<p>Temperature Monitoring</p> <p>The MRP requires continuous monitoring of influent and effluent temperature (Table 2 on p.6, Table 3 on p.7). However, there is no water quality standard associated with temperature for discharges to groundwater. The City requests this requirement be removed.</p>	<p>The Regional Board agrees to remove this requirement from the MRP.</p>
1-13	<p>Groundwater Monitoring Frequency</p> <p>C.3. in the MRP requires the City to submit a workplan proposing a modified groundwater network. As noted in this requirement, it is likely that existing wells that are not located on City property</p>	<p>The Regional Board disagrees. The groundwater quality beneath and downgradient of the percolation ponds is immediately affected by the discharge to the percolation ponds. Further, the groundwater limitations in Section III are expressed as monthly average limitations. Therefore,</p>

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	<p>may need to be used for compliance determinations based on the applicable distances from the percolation pond. Even with agreements between the City and the well owners, monthly access to these properties may be difficult. In addition, changes in groundwater quality occur over longer timeframes and monthly measurements are not needed to adequately characterize groundwater quality. Quarterly water quality sampling frequency mandated by the existing WDR/MRP for the eight on-site monitoring wells has shown to be sufficient for tracking water quality trends in groundwater. Therefore, the City requests that the monthly monitoring frequencies in Table 4 be changed to quarterly.</p>	<p>monthly groundwater sampling is necessary to determine compliance with the groundwater limitations and to provide timely responses to exceedances caused by the discharge.</p> <p>Moreover, in regards to chloride, it is critical to have sufficient groundwater quality data to validate the City's Chloride Model predictions.</p> <p>In its workplan, the City shall only propose existing groundwater monitoring wells where it has or will have monthly access to sample.</p>
1-14	<p>CLARIFICATIONS AND CORRECTIONS</p> <p>WDRs, Finding 12 (p.4)</p> <p>The Santa Clara River is to the southeast not the southwest. The text of this finding should be revised to read:</p> <p><i>"Depth to groundwater within the shallow aquifer at the site ranges from approximately 15 to 49 feet below ground surface. Groundwater gradients slopes gently away from the Santa Clara River towards the west-northwest. During wet years, groundwater may rise to within 10 to 11 feet of the ground surface in the southeast area (along the Santa Clara River)."</i></p>	<p>The text of this finding is modified as follows:</p> <p>"Depth to groundwater <u>within the shallow aquifer</u> at the site ranges from approximately 15 to 4149 feet below ground surface. The flow direction of groundwater adjacent to the SPWRF percolation ponds varies greatly but generally away from the percolation ponds. During wet years, groundwater may rise to within <u>10</u>ten to <u>11</u>eleven feet below ground surface in the area along the Santa Clara River."</p>
1-15	<p>WDRs, Finding 13 (p.4)</p> <p>First sentence: MW-7 should be replaced by MW-7a</p>	<p>The reference to MW-7 has been changed to "MW-7a."</p>
1-16	<p>WDRs, Finding 15 (p.6)</p> <p>Chloride concentration data should be added to Table 4 for MW-3 and MW-5 as shown below:</p> <p>Table 4 - Annual Average Chloride Concentration in Groundwater (mg/L)</p>	<p>The Regional Board updated the data as requested. However, this additional data continues to indicate that the SPWRF's discharge has impacted groundwater quality.</p>

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	<table><tr><th>Period</th><th>Downgradient MW-5</th><th>Downgradient 03N21W21G03S</th><th>Upgradient MW-3</th></tr><tr><td colspan="4">Prior to Discharge from SPWRF</td></tr><tr><td>2003</td><td>---</td><td>113</td><td>---</td></tr><tr><td>2004</td><td>---</td><td>111</td><td>---</td></tr><tr><td>2005</td><td>115</td><td>117</td><td>92</td></tr><tr><td>2006</td><td>114</td><td>112</td><td>88</td></tr><tr><td>2007</td><td>108</td><td>110</td><td>85</td></tr><tr><td>2008</td><td>87</td><td>100</td><td>78</td></tr><tr><td>2009</td><td>74</td><td>92</td><td>96</td></tr><tr><td>Range</td><td>99.6 +/- 16.3</td><td>107.9 ± 8.6</td><td>87.8 +/- 6.1</td></tr><tr><td colspan="4">= updated</td></tr></table>	Period	Downgradient MW-5	Downgradient 03N21W21G03S	Upgradient MW-3	Prior to Discharge from SPWRF				2003	---	113	---	2004	---	111	---	2005	115	117	92	2006	114	112	88	2007	108	110	85	2008	87	100	78	2009	74	92	96	Range	99.6 +/- 16.3	107.9 ± 8.6	87.8 +/- 6.1	= updated				
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1-17	<p>WDRs, Finding 16 (p.7); CDO Finding 5.c. (p.3)</p> <p>This finding refers to a Notice of Violation issued on March 20, 2017. However, due to the use of an incorrect address, the City has not received this NOV. The date of issuance should be revised.</p>	<p>The date of issuance of the NOV is March 20, 2017 and will not be revised. Further, the Regional Board has evidence the City did, in fact, receive it. This NOV was mailed to the following addressee and address with <i>certified mail and return receipt requested</i>:</p> <p>Mr. Jaime Fontes, City Manager City of Santa Paula 970 Ventura Street Santa Paula, Ca 93061</p> <p>The Regional Board received the return receipt signed by the City on March 27, 2017.</p>																																												
1-18	<p>WDRs, Finding 17.c (p.7)</p> <p>The statement “A reliable decreasing trend for chloride has not been observed in the effluent” should be deleted from this finding. Table 5 begins in October 2015 and effluent chloride is based on grab samples. Earlier data from 2015 should be added to Table 5 to cover a period before the water softener rebate program was implemented and composite chloride data should be presented. In addition, composite data, which is more reflective of actual water quality, should be included in the table. While the chloride levels fluctuate, the general trend of chloride effluent concentrations has been decreasing as shown in Figure 1.</p>	<p>The Regional Board disagrees that the statement should be deleted. Based on effluent data, the Regional Board believes the statement to be accurate. We note that there is not a reliable decreasing trend whether composite or grab samples are used.</p> <p>In the City’s comment letter on page 6, the City states that the monthly average chloride effluent concentration is variable and ranges widely between 122 mg/L and 138 mg/L based on composite samples. Although the average chloride effluent concentration may at times show a decreasing trend, it is not yet reliable or stable, and the results cannot be correlated with the removal of SRWS units.</p>																																												

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	<p>In addition, consistent with the request above to collect composite instead of grab samples, the City requests that composite chloride data be used in Table 5.</p> <table border="1"> <thead> <tr> <th>Period</th><th>Accumulated Number of SRWS Removed</th><th>Effluent (mg/L)</th></tr> </thead> <tbody> <tr><td>October 2015</td><td>23</td><td>132</td></tr> <tr><td>November 2015</td><td>46</td><td>133</td></tr> <tr><td>December 2015</td><td>58</td><td>129</td></tr> <tr><td>January 2016</td><td>74</td><td>128</td></tr> <tr><td>February 2016</td><td>83</td><td>138</td></tr> <tr><td>March 2016</td><td>96</td><td>138</td></tr> <tr><td>April 2016</td><td>106</td><td>133</td></tr> <tr><td>May 2016</td><td>115</td><td>138</td></tr> <tr><td>June 2016</td><td>122</td><td>127</td></tr> <tr><td>July 2016</td><td>125</td><td>127</td></tr> <tr><td>August 2016</td><td>135</td><td>139</td></tr> <tr><td>September 2016</td><td>158</td><td>129</td></tr> <tr><td>October 2016</td><td>166</td><td>129</td></tr> <tr><td>November 2016</td><td>196</td><td>136</td></tr> <tr><td>December 2016</td><td>200</td><td>135</td></tr> <tr><td>January 2017</td><td>220</td><td>131</td></tr> <tr><td>February 2017</td><td>228</td><td>134</td></tr> <tr><td>March 2017</td><td>233</td><td>136</td></tr> <tr><td>April 2017</td><td>236</td><td>133</td></tr> <tr><td>May 2017</td><td>243</td><td>129</td></tr> <tr><td>June 2017</td><td>244</td><td>122</td></tr> <tr><td colspan="2"></td><td>132.2±4.5</td></tr> </tbody> </table>	Period	Accumulated Number of SRWS Removed	Effluent (mg/L)	October 2015	23	132	November 2015	46	133	December 2015	58	129	January 2016	74	128	February 2016	83	138	March 2016	96	138	April 2016	106	133	May 2016	115	138	June 2016	122	127	July 2016	125	127	August 2016	135	139	September 2016	158	129	October 2016	166	129	November 2016	196	136	December 2016	200	135	January 2017	220	131	February 2017	228	134	March 2017	233	136	April 2017	236	133	May 2017	243	129	June 2017	244	122			132.2±4.5	<p>Effluent chloride concentrations in Table 5 were the monthly average of the grab sample analytical results. The purpose of Table 5 is to show the change in effluent chloride concentrations, if any, relative to the number of SRWS removed. As mentioned in Response to Comment 1-4.C, both grab sample results and composite sample results indicated that the effluent chloride concentrations were not stable and did not present a reliable decreasing trend correlated with the number of SRWS removed. However, Table 5 (in Response to Comment 1-4.C on Page 7/26) in the WDRs has been updated to include more recent data of SRWS removed and effluent chloride concentrations before and after the implementation of the SRWS Buy Back Program.</p>
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1-19	<p>WDRs, Finding 20 (p. 9); CDO Finding 9 (p. 5)</p> <p>A. The model does not assume future degradation of groundwater, as this is only one of the potential result based on input parameters. Input of effluent chloride concentrations below 110 mg/L would result in improvement in groundwater quality. The following modifications to the language are recommended for clarity.</p> <p><i>“The City developed and utilized a simple spreadsheet mixing model, the Groundwater Chloride Transportation Model (Chloride Model), to analyze the effect of future effluent discharges on groundwater over time at various distances from the percolation pond. The City’s modelling assumed existingsome degradation of groundwater with respect to</i></p>	<p>The Regional Board agrees to use “Chloride Model” where model is mentioned in the findings as requested, but declines to modify or remove the other language suggested in this comment. The Chloride Model does assume some future degradation and thus the statement is accurate. The Regional Board agrees that the input of an effluent chloride concentration below 110 mg/L would result in improvement of groundwater quality. However, the baseline for the application of the state antidegradation policy (Resolution No. 68-16) is generally the highest water quality achieved since 1968. The Regional Board has groundwater data from at least 2003 prior to the SPWRF discharging to groundwater. This data indicates that chloride concentrations upgradient of the current SPWRF were under 100 mg/L.</p>																																																																					

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	<p><i>chloride within a limited range of mixing zone radius below and adjacent to the SPWRF, measured from the boundaries of the percolation pond. This distance is the shortest where SPWRF effluent disposed to the percolation pond can mix with groundwater and result in receiving water chloride concentrations of 110 mg/L or less. Groundwater within the mixing zone will exceed the chloride GQO of 110 mg/L. Mass-volume balance calculations along with Darcy's Law are used to account for travel in porous media. The Chloride Model mixing model simulates instantaneous and complete mixing of ambient groundwater with effluent seepage reaching the water table from the percolation pond using SPWRF data for flow and chloride effluent concentrations. It was conservatively assumed that any effluent discharge to the percolation pond would infiltrate into the underlying aquifer and not be diverted for other uses. Groundwater parameters within the Chloride Model spreadsheet model were selected based on recent monitoring reports in order to be representative of average conditions within the vicinity of the SPWRF. The Chloride Model mixing model assumes an initial volume of groundwater underlying the ponds possessing background chloride concentrations of 136 mg/L. The volume of the existing groundwater body is calculated as the product of the radius of interest (150-1200 feet), an assumed saturated thickness of potentially impacted groundwater (50 feet), and the porosity of the underlying sediments (assumed to be 0.2) based on the low end of published literature values for a sand and gravel mixture. Based on the regional groundwater quality data documented in the SNMP, regional groundwater inflow is assumed to have a chloride concentration of 91 mg/L."</i></p>	<p>The City's use of "existing" to describe current groundwater quality degradation is misleading as the elevated chloride concentration in the groundwater is caused by the discharge from the SPWRF.</p> <p>The allowable maximum extent of a mixing zone of 150 feet away from the percolation ponds is determined by the distance between the percolation ponds and the first encountered water supply well. Per the Basin Plan, groundwater influenced by the SPWRF discharges must comply with the groundwater quality objective prior to reaching water supply wells for protection of the most sensitive beneficial use, which is agricultural supply. The Chloride Model provides scenarios for compliance with the Basin Plan's groundwater quality objective at 150 feet away from the percolation ponds. Within the range of 150 feet from points of discharge, the groundwater chloride quality will continue to exceed 110 mg/L.</p> <p>The language "This distance is the shortest where SPWRF effluent disposed to the percolation pond can mix with groundwater and result in receiving water chloride concentrations of 110 mg/L or less. Groundwater within the mixing zone will exceed the chloride GQO of 110 mg/L." is revised as follows:</p> <p><u>"This distance is the maximum allowable distance where SPWRF effluent disposed to the percolation pond can mix with groundwater and result in receiving water chloride concentration of 110 mg/L or less in order to provide protection to groundwater beneficial uses at the first encountered water supply wells which are at 150 feet away from the percolation ponds. Groundwater within the mixing zone will exceed the chloride GQO of 110 mg/L."</u></p>
	<p>B. Also in Finding 20, the Chloride Model did not undergo revision. The conceptual model and underlying equations did not change throughout the entire process. Additional modeling scenarios were implemented.</p>	<p>The Regional Board understands that the assumptions and equations used in the Chloride Model did not change. The revision referenced in the WDRs and CDO refers to various scenarios and data generated under these</p>

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	<p><i>"On December 14, 2016, Regional Board staff met with the City to discuss the results of the Chloride Model, which evaluated compliance with the groundwater quality objectives beneath and adjacent to the three percolation ponds, for various discharge scenarios. Based on Regional Board staff's comments, the City implemented additional discharge scenarios in revised the Chloride Model, which was discussed in meetings held on February 8, 2017, February 17, 2017, July 24, 2017, and August 7, 2017."</i></p>	<p>scenarios. The WDRs and CDO have been revised accordingly.</p>
1-20	<p>WDRs, Finding 21 (p. 10); CDO Finding 10 (p. 6)</p> <p>A. It is presumptuous to state that 150 feet is a sufficient distance to allow mixing in the groundwater. One of the simplifying assumptions of the Chloride model is instantaneous and complete mixing within the underlying groundwater body, otherwise known as a bathtub model. However, groundwater does not necessarily mix uniformly. It is more accurate to state the 150 foot boundary used is based on the distance to the nearest supply well. The following modifications to the language are recommended.</p> <p><i>"The revised—Chloride Model simulated chloride concentrations in the receiving groundwater resulting from chloride mass loading reduction in the three percolation ponds. The Model predicted GQOs may be being achieved at 150 feet away from the percolation pond, the distance to the closest active water supply well as measured from the boundaries of the percolation pond a sufficient distance to allow mixing in the groundwater, when chloride concentrations are significantly reduced or when the total mass of chloride in the effluent sent to the three percolation ponds is significantly reduced. The initial mass of chloride is calculated based on the average chloride effluent concentration of 135 mg/L and the discharge rate of 2.2 MGD [95 percentile of monthly average effluent flows, resulting from data recorded between October 2015 (beginning of the SRWS Buyback Program) and June 2017], which results in 2,479 pounds</i></p>	<p>The City provided different scenarios based on the Chloride Model, which was discussed in meetings held on February 8, 2017, February 17, 2017, July 24, 2017, and August 7, 2017. The Regional Board agrees to strike out the word of "revised." Please also see the Response to Comment 1-19.B.</p> <p>The Regional Board agrees that the distance to achieve GQOs for chloride at 150 feet away from the percolation ponds is determined by the distance between the percolation ponds and the first encountered water supply well. Per the Basin Plan, groundwater influenced by the SPWRF discharges must comply with groundwater quality objective prior to reaching water supply wells for protection of the most sensitive beneficial use, which is agricultural supply. The Chloride Model also predicted that the GQOs can be met by reducing the chloride loadings to the percolation ponds. Such model prediction may be validated when more groundwater data are collected as required by the MRP. The statement of "a sufficient distance to allow mixing in the groundwater" has been deleted from the WDRs and CDO. See also Response to Comment 1-19.A.</p> <p>The comment on editorial discrepancy is accepted. The tentative WDRs and CDO will be revised accordingly.</p>

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	<p><i>total mass of chloride discharged per day. The reduction of chloride mass discharged to the percolation pond can be achieved by improving the effluent chloride concentration (e.g., source control or treatment), or diverting a significant amount of flow for recycled water uses, or a combination of both in order to protect water supply Wells 03N21W21G01S, 03N21W21G02S, and, 03N21W21G03S, approximately 150, 150, and 300 feet, respectively, away from percolation ponds. Water produced from these wells is primarily primary for agricultural irrigation use.</i></p> <p>B. <i>To achieve the chloride GQO of 110 mg/L in groundwater at least 150 feet away from the percolation pond, the City provided various effluent chloride concentration and allowable flow combinations (Table 6). Based on the hydrology and hydrogeologic condition at the SPWRF percolation ponds area, the higher the concentration of chloride in the effluent, the less volume and mass can be discharged to percolation ponds to comply with the chloride GQO in the Basin Plan. For example, if the chloride concentration in the effluent is 135 mg/L, only 0.07 MGD, which is equivalent to 79 pounds of chloride per day, could be discharged to the percolation pond to achieve the chloride GQO of 110 mg/L at 150 feet away from the percolation pond. If the chloride concentration in the effluent is reduced to 120 mg/L, then more flow (0.2 MGD) can be discharged to the percolation pond and achieve the chloride GQO 150 feet away from the percolation pond.</i></p>	<p></p> <p>The groundwater chloride results of the <i>revised Chloride Model</i> were based on the hydrology and hydrogeologic condition at the SPWRF percolation ponds area. Therefore, the statement of “Based on the hydrology and hydrogeologic condition at the SPWRF percolation ponds area,” is accurate and remains.</p>
1-21	<p>WDRs, Finding 22 (p.11); CDO Finding 11 (p.7)</p> <p>The statement that “<i>The mass based effluent limitation in this Order reflects the City's chosen compliance option</i>” is misleading and should be deleted. The City has requested that the effluent limitation be mass based if the effluent concentration is greater than 117 mg/L. Otherwise, an effluent concentration limit of 117 mg/L should apply.</p>	<p>The City is misreading the statement. The statement merely indicates the mass-based effluent limitation <i>reflects</i> the City's chosen compliance option, not that the City chose the mass-based effluent limitation. With the exception of the SRWS Buy Back Program, the City's primary efforts to achieve the chloride groundwater quality objective is through the Recycled Water Use Program, which would reduce the chloride loadings to the percolation ponds by diverting effluent to other recycled water use locations where the groundwater aquifer has a sufficient capacity for chloride. The City has no other plans to further reduce the chloride concentration in the</p>

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		effluent and discharges to the percolation ponds. The CDO is developed based on the City's Recycled Water Use Program.
1-22	<p>WDRs, Finding 23 (p.11); CDO Finding 12 (p.7)</p> <p>The date that the Notice of Applicability (NOA) was issued should be changed from June 14, 2017 to August 7, 2017. The NOA was delivered to an inactive email address and an incorrect mail address on June 14th. The City did not receive the NOA until August 7, 2017.</p>	<p>The date of issuance of the NOA is June 14, 2017 and will not be revised. Further, the Regional Board has evidence that the City did, in fact, receive it prior to August 7, 2017. The NOA was mailed to the following addressee and address with <i>certified mail and return receipt requested</i>:</p> <p>Mr. Jaime Fontes, City Manager City of Santa Paula 970 Ventura Street Santa Paula, Ca 93061</p> <p>The Regional Board received the return receipt signed by the City on June 21, 2017.</p>
1-23	<p>WDRs, Finding 35 (p. 15)</p> <p>The statement that the cost of installing a Reverse Osmosis system is \$3.4 million and annual Operating & Maintenance cost is \$670,000 is incorrect. The information provided by the City estimated this as the cost of the reverse osmosis unit alone but the whole system including equipment for brine disposal is estimated to cost \$26.6 million with the annual O&M cost being \$1.6 million. The statement should be revised to reflect this:</p> <p><i>"The cost for the City to install a RO system is estimated at <u>\$3.4 26.6</u> million with annual operating and maintenance costs of <u>\$670,000 \$1.6</u> million, including brine waste disposal."</i></p>	<p>The cost estimates included in the finding were previously provided by the City. However, the Regional Board agrees to update the cost estimates for the City to install, operate, and maintain a RO system as requested.</p>
1-24	<p>WDRs, Section IX. Effective Date (p.31)</p> <p>The date in this section should be changed from October 5, 2017 to November 2, 2017.</p>	<p>The date has been changed to December 7, 2017.</p>
1-25	<p>WDRs, Figure 4 (p.35)</p> <p>Change reference from MW-7 to MW-7a, which replaced MW-7.</p>	<p>The reference to MW-7 has been changed to "MW-7a."</p>
1-26	<p>MRP, I.A.1 (p.1)</p>	<p>The Regional Board agrees to revise the MRP as requested.</p>

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	The first Quarterly Monitoring Report is due January 30, 2018 for the fourth quarter (i.e., October to December 2017). The timing of execution of the MRP may be late in the quarter and therefore may not allow sufficient time to include all of the new required elements. The City requests that the report to be submitted by April 30, 2018 be the first report to fully incorporate the new permit requirements.	
1-27	MRP, IV.C.2 (p.10) First sentence: MW-7 should be replaced by MW-7a.	The reference to MW-7 has been changed to "MW-7a."
1-28	MRP, IV.C.3 (p.10) Third sentence: MW-7 should be replaced by MW-7a.	The reference to MW-7 has been changed to "MW-7a."
1-29	MRP, IV.C.4 (p.11) Table 4 – Groundwater Monitoring: 'Priority Pollutants in Attachment D' should instead say 'Remaining Priority Pollutants in Attachment D'. Also, table notes appear to be backwards.	The Regional Board agrees. The changes have been made.
1-30	CDO, Finding 2 (p.1) The second sentence should read: <i>"Based on the discharge records between July 2010 and June 2017, the effluent discharged from the SPWRF ranged between 1.36 <u>0.57</u> and 2.44 <u>3.97</u> MGD, with an average of 1.86 MGD."</i>	The flow rates referenced in this sentence were based on the monthly average and are accurate. However, to provide clarification, the second sentence has been revised as follows: <i>"Based on the discharge records between July 2010 and June 2017, the <u>monthly average</u> effluent discharged from the SPWRF ranged between 1.36 and 2.44 MGD, with an average of 1.86 MGD."</i>
1-31	CDO, Finding 4.A (p. 2) The second sentence should read: <i>"This has led to an escalation of the chloride concentrations in groundwater below and surrounding the three percolation ponds with a range of 424 <u>130</u> to 468 <u>178</u> mg/L and an average of 140 mg/L since July 2010."</i>	The groundwater chloride concentration range of 121 and 168 mg/L was based on the monthly samples collected by the City and documented in its quarterly monitoring reports submitted to the Regional Board. The City has not provided any rationale for why these numbers are inaccurate. Without such rationale, the Regional Board continues to believe the current range is the appropriate reference in the finding.
Kate M. Neiswender, on behalf of the Malzacher family		

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2-1	<p>This office represents the Malzacher family, owners of the Malzacher Ranch located directly down-gradient from the Santa Paula Water Recycling Facility. For years, the Malzachers have complained of illegal discharges from the Facility, and for years various regional and local authorities have dismissed their complaints as exaggerated or unfounded.</p> <p>Your recent CDO was predicted by the Malzachers when the Facility was expanded. The Malzachers appeared at multiple hearings, and sent letters to your office and others, asking that the Facility not be built as approved, because the chlorides were not being properly addressed. Expert testimony specifically warned the chlorides would leach into the water table and damage crops. The Ranch is already having to order specialized fertilizers to accommodate the high chloride levels and the Facility is not even at half-capacity. As the facility approaches its capacity without addressing the chloride issues, the Malzachers will lose their entire crop. The Malzachers are continuing to gather evidence of the Facility's effect on the groundwater; they have direct evidence by comparing the monitoring wells that are on Facility property, those up- gradient from the discharges, versus those down-gradient and adjacent to the Malzacher Ranch.</p> <p>What is surprising to us is that the Regional Board is issuing this CDO as if it thinks the operators of the Santa Paula Water Recycling Facility will comply. The Regional Board has seen decades of non-compliance with California law at the Facility. What is different this time?</p> <p>I attach a letter from the Malzacher Ranch to the Regional Board from five years ago, noting that chlorides in the groundwater had risen dramatically as of 2012. Today, nothing has been done to curb this problem. You issued a CDO to a facility with a long history of ignoring or providing only lip-service to California law. The Malzacher Ranch once again demands that the Facility comply with the law. We hope that this time - the Regional Board can and will do something to cure this problem.</p>	<p>The Regional Board understands the commenter's frustrations. However, the Regional Board has not dismissed the commenter's complaints "as exaggerated or unfounded." Following receipt of Ms. Malzacher's November 12, 2012 letter regarding the possible contamination caused by the discharge from the Facility, Regional Board staff investigated the effluent quality of the Facility and its potential impact to the groundwater quality. Regional Board staff routinely reviews the Facility's effluent and groundwater monitoring reports, has gathered groundwater monitoring data and well construction details from other agencies, and also requested groundwater monitoring data provided by the Malzacher Family. Regional Board staff also had conference calls and emails with the Malzacher Family on January 4, 7, 23, and 28, 2013 to discuss their concerns.</p> <p>The Regional Board recognizes the groundwater impact caused by the SPWRF's discharge of wastewater with elevated chloride concentrations. Regional Board staff have been working with the City of Santa Paula since 2013 urging the City to identify mitigation measures to address the elevated chloride concentration in the SPWRF's effluent and the chloride impacted groundwater in the vicinity of the percolation ponds. The City ultimately proposed a SRWS Buy Back Program and Recycled Water Use Plan to reduce chloride loadings to the percolation ponds. Diversion of effluent for recycled water use at different locations will reduce chloride loadings to groundwater, and therefore improve the groundwater quality. The WDRs and CDO have been prepared to ensure that the City is on track to implement the proposed plans such that the chloride loadings are reduced. In the event the City of Santa Paula fails to comply with the CDO or WDRs, the Regional Board may take appropriate enforcement actions.</p>

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		Further, the monitoring and reporting program will be revised to require the City to notify well owners within a 500 foot radius from the boundary of the percolation ponds when there is any exceedance of the effluent limitations and groundwater limitations.