Attachment **BA** to Resolution No. R4-2008-0xx 2006-016

Revision of the Implementation Plan for the TMDL for Chloride in the Upper Santa Clara River, Resolution 04-004

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on December 11, 2008August 3, 2006.

Amendments

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Chapter 7. Total Maximum Daily Loads (TMDLs) Upper Santa Clara River TMDL

This TMDL was adopted by: The Regional Water Quality Control Board on October 24, 2002.

This TMDL was remanded by: The State Water Resources Control Board on February 19, 2003

This TMDL was adopted by: The Regional Water Quality Control Board on July 10, 2003.

This TMDL was revised and adopted by: The Regional Water Quality Control Board on May 6, 2004.

This TMDL was approved by: The State Water Resource Control Board on July 22, 2004

The Office of Administrative Law on November 15, 2004

The U.S. Environmental Protection Agency on April 28, 2005

This TMDL was revised and adopted by: The Regional Water Quality Control Board on August 3, 2006.

This TMDL was approved by: The State Water Resource Control Board on May 22, 2007.

The Office of Administrative Law on July 3, 2007.

This TMDL was revised and adopted by: The Regional Water Quality Control Board on December 11, 2008.

This TMDL was approved by: The State Water Resource Control Board on xxx xx, 200x.

The Office of Administrative Law on xxx xx, 200x.

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL: Elements Santa Clara River Chloride
Problem	Elevated chloride concentrations are causing impairments of the water
Statement	quality objective in Reach 5 (EPA 303(d) list Reach 7) and Reach 6 (EPA
	303(d) list Reach 8) of the Santa Clara River (SCR). These reaches are on
	the 1998 and 2002 Clean Water Act (CWA) 303(d) lists of impaired water
	bodies as impaired due to chloride. Theis objectives for these reaches
	wereas set to protect all beneficial uses; agricultural beneficial uses have
	been determined to be most sensitive, and not currently attained at the
	downstream end of Reach 5 (EPA 303(d) list Reach 7) and Reach 6 (EPA
	303(d) list Reach 8) in the Upper Santa Clara River (USCR). Irrigation of
	salt sensitive crops such as avocados, and strawberries, and nursery crops
	with water containing elevated levels of chloride results in reduced crop
	yields. Chloride levels in groundwater in Piru Basin underlying the reach
	downstream of Reach 5 are also rising.

Element Table 7-6.1. Upper Santa Clara River Chloride TMDL: **Elements** Santa Clara River Chloride Numeric Target Numeric targets are equivalent to conditional site specific objectives (Interpretation of (SSOs) that are This TMDL has a numeric target of 100mg/L, measured the numeric water instantaneously and expressed as a chloride concentration, required to attain the water quality objective and protect agricultural supply beneficial quality objective, used to calculate use. These objectives are set forth in Chapter 3 of the Basin Plan. the load allocations) The numeric target for this TMDL pertains to Reaches 5 and 6 of the Santa Clara River and is based on achieving the existing water quality objective of 100 mg/L, measured instantaneously, throughout the impaired reaches. A subsequent Basin Plan amendment will be considered by the Regional Board to adjust the chloride objective based on technical studies about regarding chloride the chloride levels, including levels that are which protective of salt sensitive crops and endangered and threatened species, chloride source identification, and the magnitude of assimilative capacity in the upper reaches of the Santa Clara River and underlying groundwater basin. , provided that County Sanitation Districts of Los Angeles County choose to submit timely and complete studies in accordance with tasks 2 through 6 of Table 7.6.2. The TMDL special study, Literature Review Evaluation, shows that the most sensitive beneficial uses can be supported with rolling averaging periods as shown in the tables below. 1. Conditional Surface Water SSOs The conditional SSOs for chloride in the surface water of Reaches 4B, 5, and 6 shall apply and supersede the existing water quality objectives of 100 mg/L only when chloride load reductions and/or chloride export projects are in operation by the SCVSD according to the implementation section in Table 7-6.1. Conditional surface water SSOs for Reaches 4B, 5, and 6 of the Santa Clara River are listed as follows: Reach **Conditional Rolling Averaging Period** SSO for Chloride (mg/L)

150

150

117

130^a

65

4B

4B Critical

Annual

Annual

3-month 3-month b

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL:
	Elements
	Santa Clara River Chloride
	Conditions
	a. The conditional SSO for chloride in Reach 4B under critical
	condition applies only if the following conditions and implementation requirements are met:
	1. Water supply chloride concentrations measured in Castaic Lake are ≥ 80 mg/L.
	2. The Santa Clarita Valley Sanitation District (SCVSD) shall
	provide supplemental water to salt-sensitive agricultural uses that
	are irrigated with surface water during periods when Reach 4B
	surface water exceeds 117 mg/L.
	3. Beginning May 4, 2016, the net cumulative chloride loading
	above 117 mg/L (CNCl ₁₁₇) to Reach 4B of the SCR from the
	SCVSD Water Reclamation Plants (WRPs) is zero or less, where:
	$\underline{\text{CNCl}}_{117} = \underline{\text{Cl}}_{\text{(Above 117)}} - \underline{\text{Cl}}_{\text{(Below 117)}} - \underline{\text{Cl}}_{\text{(Export Ews)}}$
	Where:
	$\underline{\text{Cl}_{\text{(Above 117)}}} = [\text{WRP Cl Load}^1/\text{Reach 4B Cl Load}^2] * [\text{Reach}]$
	4B Cl Load _{>117} ³]
	$\frac{\text{Cl}_{(\text{Below }117)}}{\text{Cl Load} <= 117^4} = [\text{WRP Cl Load}^1/\text{Reach }4\text{B Cl Load}^2] * [\text{Reach }4\text{B}]$
	$Cl_{(Export EWs)}$ = Cl Load Removed by Extraction Wells
	¹ WRP Cl Load is determined as the monthly average Cl
	concentration multiplied by the monthly average flow
	measured at the Valencia WRP.
	² Reach 4B Cl Load is determined as the monthly average Cl
	concentration at SCVSD Receiving Water Station RF
	multiplied by the monthly average flow measured at USGS
	Gauging Station 11109000 (Las Brisas Bridge).
	Reach 4B Cl Load _{>117} means the calculated Cl load to Reach
	4B when monthly average Cl concentration in Reach 4B is
	above 117 mg/L.
	4 Reach 4B Cl Load _{<=117} means the calculated Cl load to Reach 4B when monthly average Cl concentration in Reach 4B is
	below or equal to 117 mg/L.
	ociow of equal to 117 mg/L.
	4. The chief engineer of the SCVSD signs under penalty of perjury
	and submits to the Los Angeles Regional Water Quality Control
	Board (Regional Board) a letter documenting the fulfillment of
	conditions 1, 2, and 3.

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL: Elements Santa Clara River Chloride		
	b. The averaging period for the critical condition SSO may be reconsidered based on results of chloride trend monitoring after the conditional WLAs of this TMDL are implemented.		
	2. Conditional SSOs for GroundwaterConditional groundwater SSOs are listed as follows:		
	Groundwater Conditional Rolling Averaging Basin Groundwater Period SSO for Chloride (mg/L)		
	Santa Clara Bouquet & San Francisquito Canyons		
	East Piru San Pedro 150 Annual Formation ^a		
	a This objective only applies to the San Pedro formation. Existing objective of 200 mg/L applies to shallow alluvium layer above San Pedro formation.		
	The conditional SSOs for chloride in the groundwater in Santa Clara-Bouquet & San Francisquito Canyons and the lower area east of Piru Creek (San Pedro Formation) shall apply and supersede the existing groundwater quality objectives only when chloride load reductions and/or chloride export projects are in operation by the SCVSD according to the implementation section in Table 7-6.1.		
Source Analysis	The principal source of chloride into Reaches 5 and 6 of the Santa Clara River is discharges from the Saugus Water Reclamation Plant (WRP) and Valencia WRP, which are estimated to contribute 70% of the chloride load in Reaches 5 and 6. These sources of chloride accumulate and degrade groundwater in the lower area east of Piru Creek in the basin.		
Linkage Analysis	Linkage between chloride sources and the in-stream water quality was established through a statistical analysis of the WRP effluent and water quality data at Blue Cut and Highway 99. A groundwater-surface water		

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL:			
	Elements			
		Santa Clara River Chl	oride	
	chloride sources and assimilative capacity basins underlying the effects of WRP disch groundwater under a assumptions includin order to determine apallocations (LAs). The linkage analysis through a combination reduction of chloride	nodel was developed to as in-stream water quality at of Reaches 4A, 4B, 5, an ose reaches. GSWI was the theorem of the following variety of future hydrological future discharges from expropriate wasteload allocompositions and the following formula wasteload allocompositions of SSOs for surface was levels from the Valencia	ssess the linkage between and to quantify the d 6 and the groundwater hen used to predict the to surface water and gy, land use, and water use the Newhall Ranch WRP in ations (WLAs) and load hial uses can be protected ter and groundwater and	
	to Reaches 5 and 6 for assimilative capacity Implementation Plan	hat additional assimilative com groundwater discharg is not well quantified. Co includes a hydrological s		
Waste Load Allocations (for point sources)	chloride load reduction by the SCVSD according to the screen according to the	not met, WLAs shall be ba	t projects are in operation on section in Table 7-6.1. If	
	The proposed waste: WRP and 100 mg/L expressed as a conce thereby accommodat Other NPDES dischaload allocation for the	Saugus WRP. The waste Intration limit derived from ing future growth. arges contribute a minor cluste point sources is 100m or discharges to Reach 4B	here 100 mg/L for Valencia load allocations are not the existing WQO, hloride load. The waste g/L.	
	Reach	Conditional Chloride SSO (mg/L)	Rolling Averaging Period	
	<u>4B</u>	<u>117</u>	<u>3-month</u>	

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL: Elements
	Santa Clara River Chloride 4B Critical 130 ^a 3-month ^b
	Conditions 150 S-month
	 a. The Conditional WLA under critical conditions applies only if the following conditions and implementation requirements are met: 1. Water supply chloride concentrations measured in Castaic Lake are ≥ 80 mg/L. 2. SCVSD shall provide supplemental water to salt-sensitive agricultural uses that are irrigated with surface water during periods when Reach 4B surface water exceeds 117 mg/L. 3. Beginning May 4, 2016, the cumulative net chloride loading above 117 mg/L (CNCl₁₁₇) to Reach 4B of the SCR from the Saugus and Valencia WRPs is zero or less, where: CNCl₁₁₇ = Cl_(Above 117) - Cl_(Below 117) - Cl_(Export Ews) Where: Cl_(Above 117) = [WRP Cl Load¹/Reach 4B Cl Load²] * [Reach 4B Cl Load²] * [Reac
	Cl Load <= 117 ⁴] Cl _(Export EWs) = Cl Load Removed by Extraction Wells
	¹ WRP Cl Load is determined as the monthly average Cl concentration multiplied by the monthly average flow measured at the Valencia WRP. ² Reach 4B Cl Load is determined as the monthly average Cl concentration at SCVSD Receiving Water Station RF multiplied by the monthly average flow measured at USGS Gauging Station 11109000 (Las Brisas Bridge). ³ Reach 4B Cl Load _{>117} means the calculated Cl load to Reach 4B when monthly average Cl concentration in Reach 4B is above 117 mg/L. ⁴ Reach 4B Cl Load _{<=117} means the calculated Cl load to Reach 4B when monthly average Cl concentration in Reach 4B is below or equal to 117 mg/L.

Element	Table 7-6.1 Elements	. Upper Santa Clara	River Chloride TMDL:
		Santa Clara Rive	r Chloride
	perjury		SCVSD signs under penalty of Board a letter documenting the 3.
	recons		eritical condition WLA may be chloride trend monitoring after DL are implemented.
	have final co		Saugus and Valencia WRPs will ass-based conditional WLAs for llows:
	WRP	Concentration-based Conditional WLA (12-month Average)	Mass-based Conditional WLA
		(mg/L)	(12-month Average) (pounds/day)
	Saugus Valencia	150 150	$\frac{Q_{Design}*150 \text{ mg/L}*8.34}{Q_{Design}*150 \text{ mg/L}*8.34} - \frac{AF_{RO}}{}$
	day (MGD),		RPs in unit of million gallons per ss loading adjustment factor for ies, where:
	If RO facilities months	es are operated at $\geq 50\%$	rated capacity ^a in preceding 12
		$AF_{RO} = 0$	
	If RO facilities months	es are operated at < 50%	rated capacity ^b in preceding 12
		$AF_{RO} = (50\% \text{ rated capace})$ <u>ChlorideLoadRO</u>	city – %RO Capacity) *
	RO, 90 b If op	0% of the time. eration of RO facilities at	SD of recycled water treated with <50% rated capacity is the result e control of SCVSD, then under

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL:		
	Elements		
		Santa Clara Ri	
			Officer of the Regional Board, the
		y be set to 0.	and an amount on after 2 MCD DO
	c Chloride load reduction is based on operation of a 3 MGD RO treatment plant treating recycled water with chloride concentration		
		<u> </u>	Chloride. Assumes operational
			O membrane chloride rejection rate
			ride load based on the following:
		$RO = 90\% \times [(Q_{RO} \times C)]$	(22- /)
	where		,
	$\overline{Q_{RO}} = RC$	O treatment flow in Mo	<u>GD (3 MGD)</u>
	$\underline{\underline{C}_{WRP}} = \underline{C}$	hloride concentration	in water supply + 50 mg/L
	· · · · · · · · · · · · · · · · · · ·		<u>e rejection (95% or 0.95)</u>
	8.34 = C	onversion factor (ppd/	/(mg/L*MGD))
	Other existing N	PDES discharges cont	ribute a minor chloride load. The
		A for these point sourc	
	Reach Concentration- Rolling Averaging Period		
		based	
		Conditional	
		<u>WLA for</u> Chloride (mg/L)	
	<u>6</u>	<u>150</u>	<u>Annual</u>
	<u>5</u>	<u>150</u>	<u>Annual</u>
	<u>4B</u>	<u>117</u>	<u>3-month</u>
Load Allocation	•		sources are not a major source of
(for non point	· · · · · · · · · · · · · · · · · · ·		ons LAs for these nonpoint sources
sources)	is 100 mg/L as b	elow:	
	Reach	Concentration-	Rolling Averaging Period
	<u>Ktati</u>	<u>based</u>	Rolling Averaging 1 eriou
		Conditional LA	
		for Chloride	
		(mg/L)	
	<u>6</u>	<u>150</u>	<u>Annual</u>
	<u>5</u>	<u>150</u>	<u>Annual</u>

Element		. Upper Santa	Clara River Chloride TMDL	:
	Elements	Santa Cla	ara River Chloride	
	<u>4B</u>	<u>117</u>	<u>3-month</u>	
	The condition	al I Ac chall annly	only when chloride load reductions	
			re in operation by the SCVSD according to the script a	
		* * *	Table 7-6.1. If these conditions are	_
	met, LAs are b	based on existing w	vater quality objectives of 100 mg/L	<u></u>
Implementation	Refer to Table	7-6.2.		
	Implementation Objectives for		Clara River Conditional Site Specifi	<u>'c</u>
	In accordance with Regional Board resolution 97-002, the Regional Board and stakeholders have developed an integrated watershed plan to address chloride impairments and protect beneficial uses of surface waters and groundwater basins underlying Reaches 4B, 5, and 6 of the Santa Clara River. The plan involves: 1) Reducing chloride loads and/or increasing chloride exports from the USCR watershed through implementation of advanced treatment (RO) of a portion of the effluent from the Valencia WRP. The advanced treated effluent will be discharged into Reach 4B or blended with extracted groundwater from the Piru Basin underlying Reach 4B and discharged into Reach 4A. The resultant brine from the advanced treatment process will be disposed in a legal and environmentally sound manner. 2) Implementing the conditional SSOs for chloride in surface waters and underlying groundwater basins of the USCR watershed provided in Chapter 3.			
	The watershed chloride reduction plan will be implemented through NPDES permits for the Valencia WRP and a new NPDES permit for discharge into Reach 4A. The conditional SSOs for chloride in the USCR watershed shall apply and supersede the regional water quality objectives only when chloride load reductions and/or chloride export projects are in operation and reduce chloride loading in accordance with the following table:			
	Water Su	pply Chloride ¹	Chloride Load Reductions ²	
	40) mg/L	58,000 lbs per month	
	<u>50</u>) mg/L	64,000 lbs per month	
	60) mg/L	71,000 lbs per month	
	70) mg/L	77,000 lbs per month	

Element	Elements	Clara River Chloride TMDL:
	Santa Cla	ra River Chloride
	<u>80 mg/L</u>	83,000 lbs per month
	<u>90 mg/L</u>	90,000 lbs per month
	<u>100 mg/L</u>	96,000 lbs per month
	¹ Based on measured chloride of	the State Water Project (SWP) water
	stored in Castaic Lake.	
		d on operation of a 3 MGD RO treatment
	-	es operational capacity factor of 90% and
		rate of 95%. Determination of chloride
	load based on the following:	
	$ChlorideLoad = 90\% \times [($	$Q_{RO} \times C_{WRP} \times 8.34) \times r] \times \binom{30 Days}{Month}$
	where r =	% chloride rejection (95%)
	$Q_{RO} =$	RO treatment flow (3 MGD)
	$\underline{\mathbf{C}}_{\text{WRP}} =$	SWP Cl + 50 mg/L
	Reach 4B will be implemented a WLAs for Reaches 5 and 6 will be. The implementation plan propose implementation, compliance for the implementation of the implementation.	as and Valencia WRPs will be
	Saugus WRP:	
		ocation for chloride is equal to the interim
	-	ler No. R4-04-004. The interim WLA for average. The interim WLA for sulfate is
		These interim WLAs shall apply as
		permit limits for discharges to the SCR
	- I	Saugus WRP instead of existing
		The final WLAs are equal to existing
	-	or TDS and sulfate in Table 3-10 of the
		may revise the final WLAs based on
	review of trend monitoring data a	as detailed in the monitoring section of

Element Table 7-6.1. Upper Santa Clara River Chloride TMDL: **Elements** Santa Clara River Chloride this Basin Plan amendment. the sum of State Water Project treated water supply concentration plus 114 mg/L, as a twelve month rolling average. At no time shall the interim wasteload allocation exceed 230mg/L. Interim Waste Load Allocation = Treated Potable Water Supply + 114 mg/L, not to exceed 230 mg/L. (114 mg/L is the maximum difference in chloride concentration between the State Water Project treated water and the Saugus WRP treated effluent over the last five years.) Valencia WRP: The interim WLA for chloride waste load allocation is equal to the interim limit for chloride specified in order No. R4-04-004. The interim WLA for TDS is 1000 mg/L as an annual average. The interim WLA for sulfate is 450 mg/L as an annual average. These interim WLAs shall apply as NPDES permit limits and WRR permit limits for discharges to the SCR and recycled water uses from the Valencia WRP instead of existing groundwater quality objectives. The final WLAs are equal to existing groundwater quality objectives for TDS and sulfate in Table 3-10 of the Basin Plan. The Regional Board may revise the final WLAs based on review of trend monitoring data as detailed in the monitoring section of this Basin Plan amendment. Newhall Ranch WRP: The Regional Board may consider assigning conditional WLAs for the Newhall Ranch WRP pending implementation of a chloride mass removal quantity that is proportional to mass based chloride removal required for the Valencia WRP.the sum of State Water Project treated water supply concentration plus 134 mg/L, as a twelve month rolling average. At no time shall the interim wasteload allocation exceed 230 mg/L. Interim Waste Load Allocation=Treated potable Water Supply + 134 mg/L, not to exceed 230 mg/L. (134 mg/L, is the maximum difference in chloride concentration between the State Water Project treated water and the Valencia WRP treated effluent over the last five years

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL: Elements
	Santa Clara River Chloride
	Supplemental Water released to Reach 6 of Santa Clara River:
	In order to accommodate the discharge of supplemental water to Reach 6, interim WLAs are provided for sulfate of 450 mg/L and TDS of 1000 mg/L as annual averages. The final WLAs are equal to the existing water quality objectives for sulfate and TDS in Table 3-8 of the Basin Plan. The Regional Board may revise the final WLAs based on review of trend monitoring data as detailed in the monitoring section of this Basin Plan amendment.
<u>Monitoring</u>	NPDES monitoring: NPDES Permittee will conduct chloride, TDS, and sulfate monitoring to ensure that water quality objectives are being met.
	Trend monitoring: The SCVSD and Reach 4A Permittee will conduct chloride, TDS, and sulfate trend monitoring to ensure that the goal of chloride export in the watershed is being achieved, water quality objectives are being met, and downstream groundwater and surface water quality is not degraded due to implementation of compliance measures. Chloride, TDS, and sulfate trend monitoring for groundwater shall be conducted by the SCVSD at the following locations measured at representative wells as determined by the Regional Board Executive Officer: (a) Shallow alluvium layer in east Piru Basin, (b) San Pedro Formation in east Piru Basin, and (c) groundwater basins under Reaches 5 and 6, which shall be equivalent or greater than existing groundwater monitoring required by NPDES permits for Saugus and Valencia WRPs. Chloride, TDS, and sulfate trend monitoring for groundwater shall be conducted by the Reach 4A Permittee at the following locations measured at representative wells as determined by the Regional Board Executive Officer: (a) Fillmore Basin, and (b) Santa Paula Basin. Chloride, TDS, and sulfate trend monitoring for surface water shall be conducted by the SCVSD for Reaches 4B, 5 and 6, while chloride, TDS, and sulfate trend monitoring for surface water shall be conducted by the Reach 4A Permittee for Reaches 3 and 4A. Chloride, TDS, and sulfate trend monitoring shall be conducted at a minimum of once per quarter for groundwater and at a minimum of once per month for surface water. Chloride, TDS, and sulfate trend monitoring shall be conducted at a minimum of once per quarter for groundwater and at a minimum of once per month for surface water. Chloride, TDS, and sulfate trend monitoring shall extend beyond the completion date of this TMDL to evaluate impacts of compliance measures to downstream groundwater and surface water quality. A monitoring plan shall be submitted by the SCVSD and Reach 4A Permittee to the Regional Board for Executive Officer approval within six months after the completion date of Task 10

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL:		
2101110110	Elements		
	Santa Clara River Chloride		
	for the installation of any monitoring wells and/or surface water		
	monitoring stations. Chloride, TDS, and sulfate trend monitoring in		
	Fillmore and Santa Paula Basins and in Reaches 3 and 4A will begin one		
	year after Executive Officer approval of the monitoring plan and upon		
	issuance of NPDES permit for the Reach 4A Permitee. This TMDL shall		
	be reconsidered if chloride, TDS, and sulfate trend monitoring indicates		
	degradation of groundwater or surface water due to implementation of		
	compliance measures.		
Margin of Safety	An implicit margin of safety is incorporated through conservative model		
Hangin of Sujery	assumptions and mass balancestatistical analysis. The model is an		
	integrated groundwater surface water model which shows that chloride		
	discharged from the WRPs accumulates in the east Piru Basin. Further		
	mass balance analysis shows that the chloride mass removed from the		
	Piru Basin exceeds the chloride loaded into the Piru Basin from		
	<u>implementation of the conditional SSOs.</u>		
Seasonal	During dry weather conditions, Three critical conditions are identified for		
Variations and	this TMDL. The driest six months of the year is the first critical condition		
Critical Conditions	for chloride because less surface flow is available to dilute effluent		
	discharge, <u>groundwater</u> pumping rates for agricultural purposes are higher, groundwater discharge is <u>lowerless</u> , poorer quality groundwater		
	may be drawn into the aquifer, and evapotranspiration effects are greater		
	than in wet in warm weather conditions. During drought, the second		
	critical condition reduced surface flow and increased groundwater		
	extraction continues through several seasons with greater impacts on		
	groundwater resources and discharges. Dry and critically dry periods		
	affecting the Sacramento and San Joaquin River Valleys reduce fresh-		
	water flow into the Sacramento-San Joaquin Delta and result in higher		
	than normal chloride concentrations in the State Water Project supply		
	within the California aqueduct system. These increased chloride levels		
	are transferred to the upper Santa Clara River. This critical condition is		
	defined as when water supply concentrations measured in Castaic Lake		
	$are \ge 80 \text{ mg/L}.$		
	These critical conditions were included in the GSWI model to determine		
	appropriate allocations and implementation scenarios for the TMDL. The		
	third critical conditions is based on the recent instream chloride		
	concentration increases such as those that occurred in 1999, a year of		
	average flow, when 9 of 12 monthly averages exceeded the objective.		
	Data from all three critical conditions were used in the statistical model		
	described. Hydrological modeling will be completed to evaluate whether		

Element	Table 7-6.1. Upper Santa Clara River Chloride TMDL: Elements	
	Santa Clara River Chloride	
	additional loading will impact the WQO or beneficial uses during non-	
	eritical conditions.	

T	Sable 7-6.2. Upper Santa Clara River Chloride TMDL	Completion
I	mplementation	Date
	Implementation Tasks	
		Effective Date of TMDL (05/04/2005)
	b) Should the instream concentration exceed 230 mg/L more than two times in the three year period, the discharger identified by the Regional Board Executive Officer shall be required to submit, within ninety days of a request by the Regional Board Executive Officer, a workplan for an accelerated schedule to reduce chloride discharges.	
2.	Progress reports will be submitted by CSDLAC to Regional Board staff on a semiannual basis from the effective date of the TMDL for tasks 4, 6, and 7, and on an annual basis for Task 5.	
2.	Progress reports will be submitted by SCVSD to Regional Board staff on a semiannual basis from the effective date of the TMDL for tasks 4, 6, and 7, and on an annual basis for Tasks 5 and 11.	Semiannually and annually
3.	Chloride Source Identification/Reduction, Pollution Prevention and Public Outreach Plan: Six months after the effective date of the TMDL, CSDLACthe SCVSD will submit a plan to the Regional Board that addresses measures taken and planned to be taken to quantify and control sources of chloride, including, but not limited to:	6 months after Effective Date of TMDL (11/04/2005)

Table 7-6.2. Upper Santa Clara River Chloride TMDL	Completion
Implementation	Date
Implementation Tasks	
execute community-wide outreach programs, which were developed based on the pilot outreach efforts conducted by CSDLAC the SCVSD , assess potential incentive/disincentive programs for residential self-regenerating water softeners, and other measures that may be effective in controlling chloride. CSDLAC the SCVSD shall develop and implement the source reduction/pollution prevention and public outreach program, and report results annually thereafter to the Regional Board. Chloride sources from imported water supplies will be assessed. The assessment will include conditions of drought and low rainfall, and will analyze the alternatives for reducing this source.	
4. CSDLAC The SCVSD will convene a technical advisory committee or committees (TAC(s)) in cooperation with the Regional Board to review literature develop a methodology for assessment, and provide recommendations with detailed timelines and task descriptions to support any needed changes to the time schedule for evaluation of appropriate chloride threshold for Task 6. The Regional Board, at a public hearing will re-evaluate the schedule for Task 6 and subsequent linked tasks based on input from the TAC(s), along with Regional Board staff analysis and assessment consistent with state and federal law, as to the types of studies needed and the time needed to conduct the necessary scientific studies to determine the appropriate chloride threshold for the protection of salt sensitive agricultural uses, and will take action to amend the schedule if there is sufficient technical justification.	12 months after Effective Date (05/04/2006)
5. Groundwater/Surface Water Interaction Model: CSDLAC The SCVSD will solicit proposals, collect data, develop a model in cooperation with the Regional Board, obtain peer review, and report results. The impact of source waters and reclaimed water plans on achieving the water quality objective and protecting beneficial uses, including impacts on underlying groundwater quality, will also be assessed and specific recommendations for management developed for Regional Board consideration. The purpose of the modeling and sampling effort is to determine the interaction between surface water and groundwater as it may affect the loading of chloride from groundwater and its linkage to surface water quality.	2.5 years after Effective Date of TMDL (11/20/2007)
6. Evaluation of Appropriate Chloride Threshold for the Protection of Sensitive Agricultural Supply Use and Endangered Species Protection: CSDLAC_The SCVSD will prepare and submit a report on endangered species protection thresholds. CSDLAC_The SCVSD will also prepare and submit a report presenting the results of the evaluation of chloride thresholds for salt sensitive agricultural uses,	2.5 years after Effective Date of TMDL (11/20/2007)

Implementation	er Santa Clara River Chloride TMDL Implementation Tasks	Completion Date
conditions and th	der the impact of drought and low rainfall e associated increase in imported water downstream crops utilizing the result of Task 5.	
Agriculture: CSE	Consideratives (SSO) for Chloride for Sensitive OLAC The SCVSD will solicit proposals and I analyses upon which the Regional Board may base andment.	2.8 years after Effective Date of TMDL (02/20/2008)
Objective by SSC	gradation Analysis for Revision of Chloride D: CSDLAC The SCVSD will solicit proposals and i-degradation analysis for Regional Board	
meet different hy CSDLAC The SO a report to the Re control measures	anning report on conceptual compliance measures to pothetical final conditional wasteload allocations. CVSD shall solicit proposals and develop and submit gional Board that identifies potential chloride and costs based on different hypothetical scenarios water quality objectives and final wasteload	
, L	d Consideration of a Basin Plan Amendment (BPA) ride objective by the Regional Board.	3.5 years after Effective Date of TMDL
Beneficial Uses: identify alternative	Alternative Water Supplies for Agricultural CSDLAC The SCVSD will quantify water needs, we water supplies, evaluate necessary facilities, and cluding the long-term application of this remedy.	<u>(12/11(05/04</u> /2008)
Conditional Was	asible Compliance Measures to Meet Final teload Allocations for Proposed Chloride Objective. CVSD will assess and report on feasible actions to meet the chloride objective established 10a).	
· · · · · · · · · · · · · · · · · · ·	on of and action taken on the Chloride TMDL and Wasteload Allocations for the Upper Santa Clara ional Board.	
conduct chloride.	g: The SCVSD and Reach 4A Permittee will TDS, and sulfate trend monitoring to ensure that the export in the watershed is being achieved, water	4 years after Effective Date of TMDL

Table 7-6.2. Upper Santa Clara River Chloride TMDL Implementation Implementation Tasks	Completion Date
	(05/04/2009)
12. a) Implementation of Compliance Measures, Planning: CSDLAC The SCVSD to-shall submit a report of planning activities which include but are not limited to: (1) identifying lead state/federal agencies; (2) administering a competitive bid process for the selection of EIR/EIS and Engineering Consultants; (3) Development of Preliminary Planning and Feasibility Analyses; (4) Submittal of Project Notice of	5 years after Effective Date of TMDL (05/04/2010)

Table 7-6.2. Upper Santa Clara River Chloride TMDL		Completion
In	nplementation	Date
	Implementation Tasks	
	Preparation/Notice of Intent; (5) Preparation of Draft <u>Wastewater</u> Facilities Plan and <u>Programmatic</u> EIR; (6) Administration of Public Review and Comment Periods; (7) Development of Final <u>Wastewater</u> Facilities Plan and <u>Programmatic</u> EIR and incorporation and response to comments; (8) Administration of final public review and certification process; and (9) Filing a Notice of Determination and Record of Decision.	
	b) Implementation of Compliance Measures, Planning: CSDLAC The SCVSD to shall provide a schedule of related tasks and subtasks related to Task 12a), and provide semi-annual progress reports on progress of planning activities, thereafter, until completion of Final Wastewater Facilities Plan and Programmatic EIR.	5 years after Effective Date of TMDL (05/04/2010)
13	The Regional Board staff will re-evaluate the schedule to implement control measures needed to meet Final conditional WLAs adopted pursuant to Task 10 d) and the schedule for Task 14. The Regional Board, at a public meeting will consider extending the completion date of Task 14 and reconsider the schedule to implement control measures to meet Final conditional WLAs adopted pursuant to Task 10 d). CSDLAC The SCVSD will provide the justification for the need for an extension to the Regional Board Executive Officer at least 6 months in advance of the deadline for this task.	6 years after Effective Date of TMDL (05/04/2011)
14	a) Implementation of Compliance Measures, Complete Environmental Impact Report: CSDLAC The SCVSD shall complete a Wastewater Facilities Plan and Programmatic Environmental Impact Report for advanced treatment facilities to comply with final effluent permit limits for chloride.	6 years after Effective Date of TMDL (05/04/2011)
	b) Implementation of Compliance Measures, Engineering Design: CSDLAC The SCVSD will begin the engineering design of the recommended project wastewater facilities.	6 years after Effective Date of TMDL (05/04/2011)
	c) Implementation of Compliance Measures, Engineering Design: CSDLAC The SCVSD will provide a design schedule of related tasks and sub-tasks, and provide semi-annual progress reports on progress of design activities, thereafter, until completion of Final Design. In addition CSDLAC will provide a construction schedule of related tasks and sub-tasks, and provide semi-annual progress reports on progress of construction activities, thereafter, until completion of recommended project wastewater facilities.	7 years after Effective Date of TMDL (05/04/2012)

Table 7-6.2. Upper Santa Clara River Chloride TMDL Implementation Implementation Tasks	Completion Date
d) Implementation of Compliance Measures, Construction: CSDLAC The SCVSD shall have applied and received all appropriate permits and have completed construction of the recommended project wastewater facilities.	9.511 years after Effective Date of TMDL (0511/04/20146)
e) Implementation of Compliance Measures, Start-Up: The SCVSD shall have completed start-up, testing and certification of the recommended project wastewater facilities.	10 years after Effective Date of TMDL (05/04/2015)
15. The Regional Board Executive Officer may consider conditional SSOs for TDS and sulfate for Reaches 4B, 5, and 6 based on results of groundwater-surface water interaction studies on accumulation of TDS and sulfate in groundwater, potential impacts to beneficial uses, and an anti-degradation analysis.	7 years after Effective Date of TMDL (05/04/2012)
16. The Regional Board staff will re-evaluate the schedule to implement control measures needed to meet final conditional WLAs adopted pursuant to Task 10 d) and the schedule for Task 14. The Regional Board, at a public meeting will consider extending the completion of Task 14 and reconsider the schedule to implement control measures to meet final conditional WLAs adopted for chloride pursuant to Task 10 d). The SCVSD will provide the justification for the need for an extension to the Regional Board Executive Officer at least 6 months in advance of the deadline for this task. The Regional Board will also consider conditional SSOs and final conditional WLAs for TDS and sulfate based on results of Task 15.	9.5 years after Effective Date of TMDL (11/04/2014)
17. The interim WLAseffluent limits for chloride shall remain in effect for no more than 101 years after the effective date of the TMDL. Conditional WQO-SSO for chloride in the USCR shall be achieved. The Regional Board may consider extending the completion date of this task as necessary to account for events beyond the control of the CSDLAC.	104 years after Effective Date of TMDL (05/04/20165)
17.18. The interim WLAs for TDS and sulfate shall remain in effect for no more than 10 years after the effective date of the TMDL. Final WLAs shall apply at the end of 10 years unless conditional SSOs and final conditional WLAs for TDS and sulfate are adopted as described in Task 16.	10 years after Effective Date of TMDL (05/04/2015)