Draft Amendment to the Recycled Water Policy
Responses to Comments on the May 7, 2012

Letter Number	Entity	Representative	Documentation
1	General Public	Joseph Cotruvo	Submitted reference for Caffeine and Triclosan
2	Toxicology Regulatory Services For the DEET Task Force	Andrey I. Nikiforov, Consultant to the DEET Task Force	Mere, S., A. Nikiforov, S. Snyder. *Abstract Title; DEET in Water: Fundamental Study to Evaluate the Plausibility of Mimics.* 2012 North America Annual Meeting Poster Presentation.
3	Tufts University,	Laura Vandenberg	Article – Vandenberg, L., T. Zoeller, J.P. Myers. *Environmental Chemicals – Large Effect From Low Dose.* Environmental Health. San Francisco Medicine. June 2012.
4	Eastern Municipal Water District	Alfred Javier, Environmental Services Manager	None
5	City of Los Angeles Department of Public Works	Enrique C Zaldivar, Director of Bureau of Sanitation	
6	Alameda County Water District	Robert Shaver, Assistant General Manager –Engineering	
7	City of Santa Rosa	Miles A. Ferris, Utilities Director	
8	Orange County Sanitation District	James E. Colston, Environmental Compliance Manager	
9	Heal the Ocean	Hillary Hauser, Executive Director and James O. Hawkins, Associate	

		Researcher	
10	City of San Diego Public Utilities Department	Marsi A Steirer	
11	U.S Navy	Brian S Gordon, N45 Water Quality Manager (EV12)	
12	Groundwater Resource Association of California	Roy L. Herndon, Director	
13	Russian River Watershed Protection Committee	Brenda Adelman, Chair	-122210 RRWPC letter -Endocrine Review -Endocrine Society Email -Pete Myers Letter -1/11 — Linda Sheehan -6/27/12 Vandenberg Letter
15	TRI-TAC	Terri L. Mitchell, Chair Debbie Webster, Executive Office	
16	Santa Clara Valley Water District	Joan Maher, Deputy Operating Officer	
17	Sacramento Regional County Sanitation District	Terrie Mitchell, Legislative and Regulatory Affairs Manager	
18	Los Angeles Department of Public Works	Mark L. Sedlacek, Director of Environmental Affairs	
19	Inland Empire Utilities, Municipal Water District	Thomas A. Love P.E., General Manager	

20	California Association of Sanitation Agencies Association of California Water Agencies WateReuse	Roberta L. Larson – Executive Director Danielle Blacet – Senior Regulatory Advocate David Smith, Managing Director	
21	Heal the Bay Coastkeeper Alliance	Susie Santilena, Environmental Engineer Kirsten James, Director of Water Quality Sara Aminzadeh, Interim Executive Director Sean Bothwell, Staff Attorney	
22	Western Plant Health Association	Afiqur Khan, Director of Environmental & Regulatory Affairs	
23	General Public	Joyce Dillard	LACDPH Guidelines
24	Orange County Water District	Jason Dadakis, Director of Health and Regulatory Affairs	
25	Water Replenishment District of Southern California	Robb Whitaker, General Manager	
26	General Public	William Forkas	
27	Science Advisory Panel	Jörg E. Drewes, Chair	

Late Comment Letters

Entity	Representative	Comment
Raymond Basin Management Board	Anthony Zampiello, Executive Officer	Letter not considered
Southern California Alliance of Publically Owned Treatment Works	John Pastore, Executive Officer	Letter not considered

Draft Revised Recycled Water Policy

Comment Summary Number	Comment Numbers	Comment	Response	Location of Edit
	General			
1	6.2 Alameda County Water District	The funding provision in Item 11 of the Recycled Water Policy should be amended so that agencies can be eligible through 2014 or later for the purpose of developing salt and nutrient management plans. The State Water Board should also consider making funds available for agencies for Item 6.b. (3)(a) of the Policy to monitoring for recycled water constituents in their respective salt and nutrient management plans.	This issue is not within the scope of the proposed amendment of the Recycled Water Policy.	None
2	11.1 U.S Navy	Section 10.a.(1). It would be beneficial if the Policy identified or referenced the conditions meant by the statement "all uses of recycled water must meet the conditions of CDPH."	The language is a general statement that does not need clarification. A condition may mean a condition of project approval or a water recycling criterion.	None
3	11.2 U.S Navy	Section 10.a.(3) and 10.a.(4). Based on these statements regarding the knowledge of	There are peer reviewed and published analytical methods that can achieve the Science	None

		CECs and their risk, the Water Board should carefully consider which CECs have toxicological and analytical methods maturity such that monitoring will produce data of known precision and bias at the concentrations of health concern. Otherwise, monitoring is a waste of resources that may not be helpful to the overall objectives of increasing water quality and reuse.	Advisory Panel's recommended reporting limits for the CECs to be monitored. The Science Advisory Panel considered toxicological and analytical method maturity when selecting the CECs to be monitored.	
4	20.3 California Association of Sanitation Agencies (CASA) Association of California Water Agencies (ACWA) WateReuse	10.b (1)(b). Correct the public hearing date to December 2010.	The date has been changed in the proposed amendment.	Edit made to Section 10.b (1) (b).
5	20.4, 10.1	10.b.(2). We recommend the following change.	Although, the exact edit was not used, staff added language	Edit made to Section 10.b. (2).

	CASA ACWA WateReuse City of San Diego Public Utilities Department	"The panel or a similarly constituted panel shall update the report every five years from the date that an amendment to the Recycled Water Policy regarding CEC monitoring has gone into effect."	establishing a date for when the next science advisory panel report is due.	
6	9.8 Heal the Ocean	We recommend that the State Water Boards adopt a more aggressive timeline than the one proposed by the Panel. There should be a review of the list of indicator CECs every two years and the list of health based CECs every three years. While the review of the list of indicator CECs would be under the five year update of the entire report, as stated in the Policy, the significance of the indicator frame work to the success of the monitoring program necessitates the review of the list on a timelier basis.	Updating the list of indicators every two years would be ideal, but the State Water Board does not have resources do so at this frequency.	None
7	17.1 Sacramento Regional County	We recommend that the State Water Board, CDPH, and the Panel engage project manufacturers in future efforts related to evaluating CECs and	Comment noted. The commenter presents a good idea that will be taken in consideration when the next Science Advisory Panel meets.	None

	Sanitation District	their impact.		
8	18.2 Los Angeles Department of Public Works	The State Water Board should consider existing options outlined in Section 13267 of the Water Code to require that water recyclers gather information from sampling and analyses of recycled water to collect more information on CECs present in recycled water. This sampling could be performed on a quarterly basis until sufficient data have been collected to support conclusions regarding potential environmental and public health concerns over CECs.	Under section 13267 of the Water Code, the State Water Board has the authority to issue monitoring and reporting requirements. These requirements, however, cannot be duplicative of any requirements issued by the Regional Water Board, although they can be in addition to these requirements. Issuing CEC monitoring requirements at the State Water Board level may not result in the consistency that a statewide policy would provide, since Regional Water Boards would still have the authority to monitor for CECs not selected by the Science Advisory Panel.	None
9	23.1 Joyce Dillard	Recommend reconsidering recycled water as a by-product of storm water, with no further treatment, storage and reuse. The Amendment is absent of regulation, rather it is guidance; this puts the public at risk.	Storm water is not within the scope of the proposed amendment. The proposed amendment is regulation, as are all policies adopted by the State Water Board.	None

		What is the rationale of allowing a county or municipality to establish guidelines, without public input or Board of Supervisors approval, as a means of recycled water use? This is absent in the draft revised Policy. Landscape irrigation escapes monitoring in the draft amendment. Streamlined permitting was mentioned without addressing the main source of future recycled water which is storm water capture. Receiving water should be monitored due to input of landscape irrigation and storm water. In addition, disadvantaged communities are put at more risk by limiting monitoring with no logical explanation.	The Recycled Water Policy does not address establishment of guidelines by counties or municipalities. This comment is outside the scope of the proposed amendment. The proposed amendment does not require monitoring of CECs in recycled water used for landscape irrigation. The Science Advisory Panel found this monitoring to be unnecessary because of the low amounts of recycled water ingested with this use. Storm water runoff is not within the scope of the proposed amendment.	
10	13.1	The amendment to the Policy	Incidental runoff of recycled	None

	Russian River Watershed Protection Committee	does not address incidental runoff/storm water. We are concerned about tertiary wastewater runoff, especially into impaired water bodies. This runoff can carry herbicide and pesticide (endocrine disruptors) and added soil amendments applied to landscape when creek flows are low and assimilation of toxins. This in turn, affects ecosystems and has the potential to cause risk to human health.	water was addressed when the Recycled Water Policy was adopted. Re-opening this issue is not within the scope of the proposed amendment.	
11	4.1, 5.2 6.1, 7.1, 8.1, 15.2, 18.9, 20.1, 20.32 Eastern Municipal Water District City of Los Angeles Department of Public Works Alameda County Water District	Clarification is needed for monitoring locations pertaining to priority pollutants in recycled water used for landscape irrigation. Language should state; "[f]or landscape irrigation projects, priority pollutants shall be monitored twice per year at the recycling plant….."	The language has been changed to state that priority pollutants will be monitored at the recycling plant.	Edit made to Section 7.b. (4).

	City of Santa Rosa Orange County Sanitation District TRI-TAC Los Angeles Department of Public Works CASA ACWA WateReuse			
12	4.2, 20.2, 24.2, 18.10, 8.2, 15.3 Eastern Municipal Water District CASA ACWA WateReuse Orange County	The requirement for monitoring for priority pollutants twice a year is not needed. These priority pollutants have been monitored annually for many years, and only a few of these pollutants have been above the method detection limit and a smaller subset above or at the permit trigger limit. Therefore, the annual frequency of monitoring is sufficient for recycled water used for landscape irrigation	The monitoring frequency for priority pollutants has been changed so that it is similar to typical requirements for NPDES permits – once a year for facilities with design flows over one million gallons per day and once every five years for facilities with design flows of one million gallons per day or less.	Edit made to Section 7.b. (4).

	Water District Los Angeles Department of Public Works Orange County Sanitation District TRI-TAC	projects. Some common suggestions were: 1) Monitoring should be reduced or eliminated based on the most recent five years of historical data. 2) The monitoring frequency should change for all recycled water projects and not only for disadvantaged communities. 3) Monitoring frequency should be based on initial monitoring results. 4) An indicator compound should be used for monitoring to identify a family of compounds with similar physiochemical and biodegradable characteristics.		
13	20.2, 24.2 CASA ACWA	8. b. (2). Recommend the following revision. "Groundwater recharge projects shall include monitoring of recycled water for priority pollutants twice per	The commenter makes a valid point. Staff, however, is not proposing to make this change. The analyses for priority pollutants cover multiple priority pollutants	None

	WateReuse Orange County Water District	year. Monitoring shall be reduced or eliminated from priority pollutants that have not been detected in the untreated wastewater or recycled water used for recharge based on the most recent five years of historical data."	under single methods, so savings would occur only if all priority pollutants covered under a method are found to not be detected	
14	18.10 Los Angeles Department of Public Works	Recommend that priority pollutant testing frequency be the same for all recycled water project regardless of the type of community the project is located. If the frequencies are to be twice per year and a disadvantaged community cannot afford the sampling, grants should be made available. Testing only once every two years does not allow for the same knowledge on a timely basis as it does for the other communities.	The monitoring frequency for priority pollutants has been revised to be consistent with NPDES monitoring requirements. Funding mechanisms are not within the scope of this amendment.	See change in response to comment summary number 12.
15	8.2, 15.3 Orange County Sanitation District TRI-TAC	Recommend revising the permit streamlining provisions for priority pollutant monitoring to specify that reduced monitoring applies to all small communities, not just small disadvantage communities, and should consider moving of reducing this monitoring requirement for all small	See response to comment summary number 12.	See change in response to comment summary number 12.

		communities. In the event such monitoring is required, request that the Policy provide small communities an opportunity to reduce their monitoring frequency for priority pollutants based on initial monitoring results.		

Comments in the Draft Amendment to the Recycled Water Policy – Attachment A

General

Comment Summary Number	Comment Number	Comment	Response	Policy Changes
	General			
16	12.4, 15.1, 24.1 Groundwater Resource Association of California TRI-TAC Orange County Water District	We recommend that the proposed Amendment be revised such that the CEC provisions of the Recycled Water Policy and the CDPH draft recycled water recharge regulation are closely aligned, with respect to surface and subsurface monitoring locations. Maintaining consistency between these two regulatory documents pertaining to recycled water recharge will reduce confusion and inefficiency.	Staff is implementing the direction in the Recycled Water Policy, which required the establishment of a Science Advisory Panel and the establishment of monitoring requirements for CECs based on the Science Advisory Panel recommendations. Staff recognizes that regulation of groundwater recharge/reuse facilities is an area where the Water Boards and CDPH have similar responsibilities and that CDPH is drafting water recycling criteria that will also have monitoring requirements for CECs. The proposed amendment has been modified in places to provide more discretion and input from CDPH. However,	None

			staff has decided to move forward with its proposed amendment based on the recommendation of the Science Advisory Panel and not to try to mirror the CDPH draft, which may change substantially as it goes through the public review process. After the CDPH regulations are approved by the Office of Administrative Law, State Water Board staff will evaluate if there is a need to amend the Recycled Water Policy to make the requirements consistent.	
17	5.6, 20.31 City of Los Angeles Department of Public Works CASA ACWA WateReuse	The Amendment does not need to be revised to include the three CCL3 CECs listed in the Science Advisory Panel report. Based on data from other agencies (e.g., information obtained from the Los Angeles Department of Water and Power groundwater replenishment project) 1, 2, 3,-trichlororpropane, hydrazine and quinolone were below detection based on their MDL and MRL. These constituents	Staff concluded that it is not necessary to add these three constituents to the list of CECs to be monitored, because agencies have been and are continuing to monitor for them. If the monitoring shows a need to continue monitoring these CECs, they can be added on the next update to the Recycled Water Policy.	None

		would not have a MC/MTL greater than 1. Recommend stating the rationale for not include this in Attachment A.		
18	21.1 Heal The Bay Coastkeeper Alliance	The list of CECs to be monitored should include contaminants from U.S.EPA's Candidate Contaminant List 3, and the list of CECs proposed by CDPH.	The proposed amendment implements the recommendations of the Science Advisory Panel. The CECs not included on the monitoring list: (1) did not have robust analytical methods, (2) did not have toxicity data, or (3) monitoring data showed that they are not present at concentrations in recycled water at levels of concern to public health. All the CECs on the USEPA Candidate Contaminant List 3 were considered for inclusion on the monitoring list. The proposed amendment does not include the monitoring of the CECs proposed by CDPH. CDPH, however, can recommend CECs for monitoring on a case-by-case basis. If recommended, the Regional Water Boards will include them in the monitoring program.	None
19	6.3	Add language to ensure that	The Water Board recognizes	None

	Alameda County Water District	agencies performing local groundwater management protection replenishment will receive copies of monitoring data generated from recycled water projects including landscape irrigation projects. This provision would not apply in the case where such agency is the owner and operator of the recycled water project.	the need to share data among entities. Currently, hard copy data is submitted to the Regional Water Boards. The Water Board's long-term goal is to move towards an electronic data submittal system and to then make this electronic data available to the public. The State Water Board, however, cannot require the submittal of data into this system until the system is in place.	
20	8.11, 9.7, 15.12, 18.1, 20.41 Orange County Sanitation District Heal the Ocean TRI-TAC Los Angeles Department of Public Works CASA ACWA	Water Board should provide input on how the other expert panel recommendation will be implemented in preparation for the next expert panel meeting. The expert panel recommended: 1) a more thorough review of CECs; 2) development of procedures to estimate predicted concentrations of CECs; and 3) development of a process to compile, summarize and evaluate patterns and trends. We encourage the Board to direct resources at the other expert panel recommendations to collect the information that will be critical for use by the	The State Water Board has directed resources towards developing bioanalytical methods for screening for CECs that may be present in recycled water at concentrations of concern to public health. It has limited resources to carry out other Science Advisory Panel recommendations. Staff would be willing and interested, however, to discuss ways of obtaining additional resources for these tasks.	None

	WateReuse	next panel convened pursuant to the Policy.		
21	9.7 Heal the Ocean	Develop a secondary monitoring list populated with results of a more thorough review of available measured environmental concentration (MEC) and predicted environmental concentration (PEC) data and with the CECs listed in Table 5.3 as recommended by the Science Advisory Panel.	Staff has concluded that existing data is adequate to exclude some CECs from additional monitoring. It recognizes that there may be other CECs present in recycled water that may warrant monitoring, but are not being proposed for monitoring because of lack of analytical methods or lack of MTLs. Data will be reviewed on a five year schedule and at that time additional CECs may be proposed for monitoring.	None
22	16.1 Santa Clara Valley Water District	Completed and current study results should be considered in the periodic review of monitoring requirements for recycled water projects, including irrigation projects to help guide the decision of which CECs to monitor and the appropriate monitoring locations.	The monitoring program will be revised based on the most recent CEC information every five years as stated in the Water Recycling Policy.	None
23	21.3 Heal the Bay Coastkeeper Alliance	Effluent dominated surface water should be monitored, in addition to groundwater; impacts of CECs in surface water must be addressed. The Amendment does not provide	Pilot monitoring of effluent dominated receiving waters was proposed in a report developed by a second science advisory panel focusing on CECs in aquatic	None

		recommendations for monitoring receiving water other than groundwater, which is a major shortcoming. Monitoring should be required for all designated constituents both in effluent and in the receiving water.	ecosystems. The recommendations of the Ecosystems Panel are available at http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/cec_ecosystems_rpt.pdf.	
24	26.1 William Forkas	Change the amendment to monitor all recycled waters for CECs. Biological effects on ecosystems should be considered to the exposure of CECs to humans and wildlife through bioaccumulation. This is of concern, if the recycled water used for landscape irrigation is used to fill scenic ponds.	The Science Advisory Panel assessed CECs and identified CECs that have the potential to pose a risk to human health. The Science Advisory Panel considered ingestion as an exposure route and concluded that CECs in recycled water used for landscape irrigation posed a low risk to human health, because of the small amount of recycled water that would be ingested. The Science Advisory Panel did not evaluate potential effects of CECs on wildlife that may drink water from an impoundment or that live in an impoundment or bioaccumulation potential within an impoundment. The science for determining	None

			the potential environmental and human health risks posed from CECs is still advancing. Bioaccumulation can be one of the issues explored with future science advisory panels. But at this time, the science does not support the need to require water recyclers to conduct the monitoring being proposed by the commenter.	
25	22.2 Western Plant Health Association	Incorporate established standards to ensure consistency in regulatory assessment, enforcement, and to minimize cost to the public and private sectors.	Comment noted. This is a statewide policy intended to provide consistency in establishing monitoring requirements for CECs in recycled water used for groundwater recharge and landscape irrigation.	None
26	22.3 Western Plant Health Association	The Water Board should direct staff to address the CECs through adoption and enhanced coordination with other state and federal agencies on existing programs that address recycled water, rather than developing a new highly costly program.	The State Water Board has been coordinating with other California state agencies. The Science Advisory Panel composed a stakeholder group consisting of water agencies, water recyclers as well as state and federal agencies to provide input and information in the development of their recommendations. The Panel also brought in a national perspective to these CEC	None

			issues, since it included members from outside of California. For recycled water, staff considers the proposed monitoring to be necessary to ensure protection of public health, a practice in which California is the national leader.	
27	20.5 CASA ACWA WateReuse	Replace "health-relevant CECs" with "health-based CECs. The term "health-relevant may have additional implications from the public perception of monitoring programs.	Language has been changed throughout Attachment A.	The language "heath-relevant CECs have been changed to "health-based CECs" in Attachment A.
28	3.1 Tufts University	The panel should reconsider their suggestion that exposure of human and wildlife populations to EDCs, including pharmaceuticals, should not be concerning if the concentration of these chemicals are "low". Relying on the centuries old adage that "the dose makes the poison" is not sufficient to protect public health.	The Science Advisory Panel recognized the uncertainty in interactions that result from additive, synergistic and antagonistic effects. These effects were captured in the safety factors that were applied in deriving the MTLs. The approach is similar to USEPA's approach in deriving drinking water MCLs. In addition, these interactions may be measureable through the bioanalytical assays that are currently being developed and validated.	None
29	9.3	A future science advisory	The existing analytical	None

	Heal the Ocean	panel should examine and make recommendations on addressing antibiotics in recycled water. Any monitoring program for CECs must take antibiotics into account. While the CDPH list includes antibiotics in Group B and Group D, the proposed monitoring requirement contains no such focus.	techniques to assess antibiotic resistance produce inconsistent results. Antibiotic issues, however, could be considered when valid and consistent analytical methods are available.	
30	19.1 Inland Empire Utilities, Municipal Water District	CDPH should continue to be allowed to determine the approach needed to provide an equivalent level of public health protection on a case-by-case basis.	The commenter is correct that an option for the State Water Board is to implement monitoring proposed by CDPH. When the Recycled Water Policy was adopted, however, the major stakeholders agreed that the State Water Board would establish monitoring requirements for CECs in recycled water based on the recommendations of a science advisory panel.	None

CECs and Surrogates

Comment Summary Number	Comment Number	Comment	Response	Policy Changes
31	21.4 Heal the Bay Coastkeeper Alliance	Surrogate parameters should not be used in lieu of CEC monitoring for groundwater recharge. It is not appropriate that where surrogates and health-relevant CECs are to be monitored; more frequent monitoring is required for surrogates. Severely limiting monitoring will reduce rather than encourage consumer confidence in the use of recycle water. In addition, clarify whether landscape irrigation is meant to include agriculture.	Daily monitoring of CECs is not cost effective. It is more appropriate to monitor surrogates more frequently to assess whether the treatment is working to remove trace organic compounds. Landscape irrigation does not include agriculture. A definition of landscape irrigation has been added in a footnote.	Added footnote number 1 to the Recycled Water Policy.
32	1.1 Joseph Cotruvo	Triclosan and caffeine are of little toxicological relevance and their exposure from other sources are several orders of magnitude greater than from treated reuse water, so linking them as a toxicological concern is not supported. These chemicals should be used to determine effectiveness of treatment.	Under the Science Advisory Panel's developed framework and the data sources cited in the Science Advisory Panel Report, triclosan and caffeine emerged as health indicators. The Science Advisory Panel Report provides detailed rationale for selection of these CECs.	None

		Concentrations of these contaminants in wastewater do not approach a level of health concern, much less water treated for potable reuse.		
33	1.2 Joseph Cotruvo	Clarify the distinction between CECs used to evaluate operations versus those which pose health risks.	Performance-based CECs are indicator compounds designed to identify whether the treatment units are operating properly. Health-based CECs are compounds that have been determined to have the potential to pose a risk to human health (toxicological relevance). Staff believes this is adequately explained in Attachment A.	None
34	2.1 Toxicology Regulatory Services For the DEET Task Force	The State Water Board should not mandate DEET monitoring before a suitable analytical methods that is uniquely-specific for DEET in environmental matrices is developed and fully validated. The current analytical methodologies, data from water monitoring programs for DEET, will likely lead to false conclusions that will simply confound interpretation of results from the monitoring program for CECs.	EPA Method 1694 for Pharmaceuticals and Personal Care Products in Water, Soil, Sediment, and Biosolids by HPLC/MS/MS can achieve the RL for DEET.	None

35	6.1 Alameda County Water District	The Water Board should consider monitoring requirements and maximum limits for NDMA and 1, 4 – Dioxane in recycled water used for landscape irrigation projects. This request is based on USEPA's Unregulated Contaminant Monitoring Rule 3 requirements, which call for monitoring of 1, 4- Dioxane at levels as low as 0.07 ppb. This level is considerably lower than both the 3 ppb notification level and wastewater concentration that was considered by the expert panel.	The Science Advisory Panel concluded that the risk to public health posed by CECs in recycled water used for landscape irrigation water is minimal, because of the low amounts of recycled water ingested (~20 milliliters). USEPA's Unregulated Contaminant Monitoring Rule 3 pertains to drinking water, where the amount of water ingested is much higher. Therefore, monitoring for 1, 4 Dioxane and NDMA in recycled water used for landscape irrigation is not necessary to protect public health.	None
36	9.6 Heal the Ocean	The Water Board should add those chemicals recommended by CDPH to monitoring in recycled water for surface spreading.	The proposed amendment allows CDPH to recommend additional CECs to monitor on a case-by-case basis.	None
37	20.6 CASA ACWA WateReuse	Section 1. The panel did not elect to define surrogates in terms of direct correlation to CEC removal. Recommend the following language change. "A surrogate is a physical or chemical property, such as	Language has been changed as recommended.	Edit made to Section 1, second paragraph.

		chlorine residual or electrical conductivity that can be used to measure the efficiency of trace organic compounds removal by the treatment process."		
38	20.9, 27.1 CASA ACWA WateReuse Science Advisory Panel	Footnote 5 and Table 6. A two-week travel time may not be practical to definitively collect a sample at every recharge project. Recommend the following language change. Foot note 5 "For evaluating removal of CECs, the treatment zone for soil aquifer treatment is from the surface of the application area through the unsaturated zone to groundwater, including groundwater after SAT and within a 30-day travel time distance through an aquifer downgradient of the surface application area." Table 6, Foot note 2 "Treatment process: Soil Aquifer treatment. The stated expected removal differentials (5) are an example and need to be finalized during the initial testing phase for a given site."	Although edits have not been made exactly as proposed, the proposed amendment has been edited to state that the allowable travel time in groundwater is thirty days, instead of two weeks. A footnote 1 has been added to Tables 3, 4, and 5. Table 6 has been change to Table 5. Footnote 2 has been changed to footnote 3, and the language has been revised as recommended.	Edits made to Sections 2.1.1 and 2.2.1. Add Footnote 1 to Tables 3, 4, and 5.

39	20.7 CASA ACWA WateReuse	Section 1. Soil aquifer treatment (SAT) is not a passive treatment process. Recommend the following language change. "In addition, soil aquifer treatment is a natural treatment process that provides a level of removal of CECs."	Language has been changed to say "natural", instead of "passive".	Edit made to Attachment A, Section1, third paragraph.
40	5.1, 24.3 City of Los Angeles Department of Public Works Orange County Water District	Section 1, Page 2, ¶ 4. CEC monitoring requirements for groundwater recharge reuse projects implementing treatment processes that provide control of CECs by processes other than soil aquifer treatment for RO/AOPs shall be established on a case-by-case basis by the Regional Water Boards per "CDPH's written recommendation " rather than "in consultation with CDPH."	The proposed amendment is consistent with the Water Code. The Water Code states that the Regional Water Boards shall issue water recycling requirements and consult with CDPH when doing so. Staff believes the Regional Water Boards must be given some discretion to implement a CDPH recommendation, because they are responsible for their orders. The State Water Board has a memorandum of understanding with CDPH, which provides appeal procedures should Regional Water Board staff not agree with a CDPH recommendation. In practice, Regional Water	None

			Board staff have consistently accepted and implemented the CDPH recommendation.	
41	8.5, 15.6, 20.8, 24.4 Orange County Sanitation District TRI-TAC CASA ACWA WateReuse Orange County Water District (OCWD)	Section 1, Page 4. Designate CDPH as the lead for determining appropriate CECs for treatment processes not addressed by the expert panel, until a future expert panel is convened and makes appropriate recommendations that would be considered by the Water Board as amendments to the Policy. Recommend to change language to "in consultation with CDPH" to per "CDPH's written recommendations."	The proposed amendment is consistent with the Water Code. The Water Code states that the Regional Water Boards shall issue water recycling requirements and consult with CDPH when doing so.	None
42	4.3 , 20.35 Eastern Municipal Water District CASA ACWA WateReuse	CDPH should be the lead for groundwater recharge projects and in establishing CEC monitoring requirements for those projects that use alternative treatment processes, and not individual Regional Water Quality Control Boards.	The proposed amendment is consistent with the Water Code. The Water Code states that the Regional Water Boards shall issue water recycling requirements and consult with CDPH when doing so.	None

43	21.1 Heal the Bay Coastkeeper Alliance	Table 1. The Regional Water Boards should be granted discretion to add CECs to the list of constituents for monitoring based on region-specific considerations. Twenty-four constituents from the Los Angeles Water Board for ocean ambient monitoring are not included in the Amendment.	The monitoring requirements are based on recommendations from the Science Advisory Panel. Staff believes that these recommendations should be implemented to ensure statewide consistency.	None
44	12.1 Groundwater Resource Association of California	Limit CEC monitoring for groundwater recharge projects to be constituents recommended by the expert panel.	The proposed amendment prohibits the inclusion of additional CECs, except when requested by CDPH, requested by a project proponent, or required by an adopted regional salt and nutrient management plan. Staff believes that removing CDPH authority to recommend additional CECs to monitor would be inconsistent with the Water Code, which requires CDPH to provide recommendations for water recycling facilities to protect public health.	None
45	16.2 Santa Clara Valley Water District	1.1, ¶ 1, second sentence - add the italicized text. "The Regional Water Boards shall not issue requirements	Language has been changed to address the comment although not exactly as requested by the commenter.	Edit made to Section 1.1, first paragraph.

		for monitoring of additional CECs, beyond the requirements provided in this Policy, except when recommended by CDPH or when requested by the owner or operatory of the groundwater recharge reuse project *or in accordance with an adopted regional salt and nutrient management plan."*		
46	9.1 Heal the Ocean	The State's CEC list must correlate with the CDPH proposed indicator list. The current monitoring list completely omits five of the indicator groups (A, B, C, E, and I), listed in CDPH's proposed framework.	CDPH has circulated draft regulations for groundwater recharge reuse facilities. The regulations include some monitoring for CECs. For groundwater recharge reuse by subsurface application, the draft regulation proposes to require occurrence studies on the project's municipal wastewater. These studies would be used to identify and select at least nine indicator compounds. Under the draft regulations, the project sponsor would submit an occurrence study protocol, the subsequent results, and a list indicator compounds, to CDPH for review and approval.	None

			The CDPH draft regulations, therefore, are similar in concept, but different in execution from the proposed amendment. CDPH would require the project proponent to submit a set of indicator CECs for approval. Under the proposed amendment to the Policy, indicator CECs have been preselected by the Science Advisory Panel. Staff does not disagree with the CDPH proposal. The direction provided by the Recycled Water Policy, however, has been to establish requirements based on recommendations from the Science Advisory Panel.	
47	9.2 Heal the Ocean	Adopt a performance indicator CEC monitoring program that is similar to that proposed by the CDPH frame work for both surface and subsurface application. The list for subsurface application of recycled application of recycled water includes only two of the groups: caffeine from Group D, and DEET from Group G. Subsurface	The Science Advisory Panel selected indicator CECs it considered to be adequately representative and appropriate for the two types of groundwater recharge systems addressed by the proposed amendment.	None

		application projects, as in direct injection, should not have fewer requirements than surface application project. These types of recycled water use should have to meet performance standards for all nine of the CDPH performance indicator groups.		
48	9.4 Heal the Ocean	All chemicals included in the CDPH Notification List for monitoring should be included in the proposed CEC monitoring program. The exclusion of the vast majority of these chemicals from the Panel's Final Report is an unacceptable omission. Any lack of data on these chemicals does not provide a legitimate excuse for their exclusion, and in fact, adds weight to the case for their addition to the State's final monitoring program. The CDPH Notification List is designed to provide guidance on chemicals that are a health concern. Any chemical that is connected to suspected health concerns and has limited data associated with it is exactly the kind of chemical that should be	The Science Advisory Panel established a rational scientific process for determining whether monitoring a CEC would provide information necessary to protect public health. Using this method, it found it unnecessary to continue monitoring some CECs. Nevertheless, the proposed amendment allows the Regional Water Boards to implement CDPH recommendations for additional monitoring on a site-specific basis. The Regional Water Boards have consistently implemented CDPH recommendations.	None

		included in the CEC monitoring Program.		
49	5.4, 8.7, 15.8, 20.10, 20.37, 24.5 City of Los Angeles Department of Public Works Orange County Sanitation District TRI-TAC CASA ACWA WateReuse Orange County Water District	Incorporate CEC analytical methods that CDPH used in the November 2011 draft regulations. Recommend the following language change. "If the USEPA has promulgated an analytical method(s) for analysis of a CEC or a surrogate in 40 CFR Part 136 or 141, then the CEC or surrogate shall be analyzed in conformance with such analytical method unless the project sponsor and the Regional Water Board agrees that an alternative test method can be used. If an EPA-promulgated method is not available, as project sponsor will propose a method for use in a project's CDPH approved Operations Plan."	The edit was made as requested. However, the language is not exactly as proposed by the commenter.	Edit to Section 1.1, after Table 1.
50	21.5 Heal the Bay Coastkeeper Alliance	CEC testing should not be limited to currently approved analytical methods. The CEC monitoring list should be based solely on the need for monitoring, not the current availability of analytical	Scientifically validated analytical methods are necessary to accurately detect and quantify CECs. Otherwise, money would be spent collecting misleading, inaccurate data.	None

		methods. Requiring necessary contaminant monitoring and a reasonable timeframe for method development is a sounder course to achieve the Policy's goals and directions.		
51	11.8 U.S Navy	1.1 –¶ 4. Define what statute the "approved" analytical method should be under (CWA or SCWA).	The word "approved" was deleted from the proposed amendment. A definition is now not necessary.	None
52	18.4 Los Angeles Department of Public Works	1.1.2 Clarify language to indicate that "approved USEPA methods" only refers to methods that have been promulgated by USEPA, and where no method is promulgated, an alternate method as submitted by a project sponsor may be used when reviewed and approved by the State or Regional Boards.	The word "approved" was deleted from the proposed amendment. The language now states that the analytical method must be peer reviewed and published.	Edits were made to Section 1.1, paragraph 4.
53	22.1 Western Plant Health Association	The Water Board should utilize the same ELAP-accredited laboratories program for recycled water as federal water quality standards to assure consistency in the testing and analysis process.	Water Code section 13176 requires the analysis of any material to be performed by a laboratory that has accreditation from the Environmental Laboratory Accreditation Program. This section would apply to the analysis of CECs required by	None

			the proposed amendment.	
54	11.4 U.S Navy	Table 1. The method reporting limit (MRL) needs to be specifically defined, how it is determined, and if it corresponds to a method detection limit, practical quantitation limit, or an impending regulatory limit. This is often a source of confusion in analytical reports.	The term "method reporting limit" has been changed to "reporting limit". Reporting limit is defined by USEPA as the minimum value of the calibration range. Staff does not believe it necessary to add a definition to the proposed amendment.	None
55	11.5 U.S Navy	Table 1. The method reporting limits for each CEC should be the lowest calibrated standard for each respective method or the quantitation limit, whichever is higher. The detection limit should not be used for minimum reporting limits due to the uncertainty at these levels.	The term "method reporting limit" has been changed to "reporting limit". The reporting limit as defined by USEPA is the minimum value of the calibration range within each batch analyzed. Staff agrees that values between the detection limit and reporting limit should not be used, because these are estimated values/ concentrations. Although staff agrees with the commenter, it does not believe it necessary to add this information to the proposed amendment, since it is provided in other sources.	None
56	11.6	Table 1. To maximize	The Science Advisory Panel	None

	U.S Navy	consistency, specify what methods should be used. For example, multiple methods exist for NDMA analysis, not all of them with comparable detection limits. In addition, no EPA methods for sucralose and DEET can be found.	selected CECs for which analytical methods are available, including analytical methods for DEET and sucralose. Staff did not specify analytical methods to give the water recyclers the ability to select a method that provides the best result for a facility and is available at a nearby laboratory. If no EPA approved method is available, other analytical methods may be used.	
57	11.7 U.S Navy	1.1, ¶ 3. In specifying the performance for "proven reliability" – should the laboratory performing such test be accredited to any specific standards?	The term proven reliability has been deleted. See comment summary number 54.	Edit made to Section 1.1.
58	11.9 U.S Navy	1.2, ¶ 3. Appropriate methodologies, reporting limits (RLs), and performance criteria should be included for surrogate methods.	Methodologies for measuring surrogates were not placed in the proposed amendment because they are available in "Standard Methods for Examination of Water and Wastewater" (www.standardmethods.org). Reporting limits are not necessary for surrogates, since these parameters are well above the limits of	None

			detection. The proposed amendment requires selection of surrogates to monitor process performance. The commenter is correct that the proposed amendment does not require a specified removal rate for surrogates, such as requiring electrical conductivity or TOC to be reduced by a specific percentage through the reverse osmosis/advanced oxidation processes. Staff does not know of an industry standard for these removal rates and believes they are project-specific.	
59	6.2, 7.2, 8.6, 15.7, 20.11, 20.36 Alameda County Water District City of Santa Rosa Orange County Sanitation District (OCSD)	Clarify the process for selecting surrogates for monitoring. It is not clear how surrogate selection occurs; this could potentially allow Regional Water Boards the discretion to increase the number of surrogates that must be monitored for groundwater recharge projects and landscape irrigation. If the Board intends to allow for fewer or different surrogates to	The language has been edited to clarify the surrogate selection process, although not exactly as proposed.	Edit made to Section 1.2, after Table 2.

	TRI-TAC CASA ACWA WateReuse	be used and that not the entire expert panel recommended surrogate may be necessary, then some clarification in the language is needed. Recommended language: "Table 2 presents the list of surrogates to be considered for monitoring treatment of recycled water used for groundwater recharge reuse and landscape irrigation" "Surrogates shall be selected in consultation with CDPH and the Regional Water Board in Table 2 on a case-by-case basis and shall be appropriate for the treatment process or processes. For example, chlorine residual is not an appropriate surrogate for projects that do not use chlorine-based compounds for disinfection."		

2.0 Monitoring Locations

Comment Summary Number	Comment Number	Comment	Response	Policy Changes
60	5.3, 8.3, 15.4, 20.33 City of Los Angeles Department of Public Works Orange County Sanitation District TRI-TAC CASA ACWA WateReuse	Subsurface, surface and irrigated monitoring requirements for CECs, surrogates and their monitoring locations should conform with the panel recommendations and harmonized with the CDPH groundwater recharge regulations, rather than having conflicting monitoring requirements.	Attachment A has been edited to state that monitoring locations are to be selected in consultation with CDPH.	The description of the location of monitoring wells has been edited in the narrative and in the tables.

61	18.5, 27.2 Inland Empire Utilities, Municipal Water District Science Advisory Panel	Remove "discharge" for those projects that involve subsurface application of recycled water and for the following sections: Section 2.1.2, 2.2.2 - Item 3, Table 3, monitoring locations point location for subsurface application, Table 4 monitoring point subsurface application, Table 5, monitoring point for subsurface application, and Section 4.1.2.	The word "discharge" has been changed to "application".	Edits made to Section 2.1.1 and Section 2.2.2. Edits made to Tables 3, 4, and 5. Edit made to Section 4.1.2.
62	18.3 Los Angeles Department of Public Works	2.2.2. Remove the reference to specific treatment units and state that sampling should occur between treatment units or after each treatment unit as necessary and prior to discharge. The sample location should be coordinated with CDPH's most current draft of the groundwater replenishment reuse regulation to ensure consistent requirements across all aspects of the recycled water regulatory arena.	The proposed amendment is written to apply specifically to facilities that apply filtered, disinfected, oxidized recycled water to a spreading area or facilities that inject recycled water treated by reverse osmosis and advanced oxidation into aquifers. As stated in the proposed amendment, monitoring programs for facilities using other treatment trains will be determined on a case-by-case basis. The Science Advisory Panel only addressed these treatment trains and staff concluded that the recommendations should not be applied more broadly.	None

63	18.6 Los Angeles Department of Public Works	2.2.2. Remove "RO/AOP" and simply state that the water will be sampled prior to recharge. This will allow the Policy to be more flexible in light of future or changing regulatory requirements on the types of treatment that are necessary for the Groundwater Recharge Reuse.	For indicator CECs, samples are required before and after the treatment units to determine the removal percentages for the CECs. Sampling only at the point of recharge will prevent this information from being collected.	None
64	20.14, 24.6 CASA ACWA WateReuse Orange County Water District	2.2.2. Sample location (1) is vague and not consistent with the suggestion from the panel. The other two locations should be selected in consultation with CDPH. Recommend changing the language to: (1) At a point selected in consultation with CDPH that represents feedwater to the RO/AOP treatment process; and (2) At a point selected in consultation with CDPH that represents treatment by RO prior to treatment by AOPs; or (3) Following treatment by AOPs prior to	The language has been changed in 2.2.2 and Tables 3, 4, and 5, although the edit is not the same as proposed by the commenter. Staff simplified the language to state that the monitoring points are: (1) Prior to treatment by RO/AOPs; and (2) Following treatment by RO/AOPs prior to release to the aquifer. The intermediate sampling was removed as recommended in other comments.	Edits made to Section 2.2.2 and Tables 3, 4, and 5.

		discharge to the aquifer."		
65	19.2 Inland Empire Utilities, Municipal Water District	Table 3, 4, 5 - footnote 1. The travel time should be based on the findings determined during the startup period. The "two week" travel time is too specific and restrictive and the time travel time to the compliance lysimeter varied significantly by basin.	Language has been changed in Attachment A. Travel time in groundwater for surface application was changed from two weeks to 30 days.	Edits made to Tables 3, 4, and 5.
66	20.12, 27.2 CASA ACWA WateReuse Science Advisory Panel	Section 2.1.1 The sample locations are not in line with the Panel's recommendations. 1) The amendment specifies locations. The Panel, however, recommended that locations and monitoring criteria for selection and use of the sampling locations are site-specific and need to be defined on a case-by-case basis and to supplement CDPH's regulations. 2) Two POMs are not consistent with the panel's guidance, nor are they practicable for all groundwater recharge projects.	Language has been changed in Attachment A, although not exactly as proposed. The language now says: For surface application practices, performance indicator CECs shall be monitored in recycled water and groundwater at the following locations. 1) Following tertiary treatment prior to application to the surface spreading area; 2) At monitoring well locations designated in consultation with CDPH within the distance groundwater travels	Edits made to Section 2.1.1, Tables 3, 4, and 5.

		3) Monitoring for tertiary-treated water prior to SAT should be conducted prior to application of the recycled water to the spreading area, not simply at the point of discharge of the recycled water. 4) It may be infeasible to collect sufficient sample volume from a lysimeter for a CEC analysis, in particular NDMA. Recommend the following language change. "For groundwater recharge reuse projects implementing surface application of recycled water, health-relevant CECs shall be monitored at these locations: 1) Following tertiary treatment prior to application to the surface spreading area; and 2) At monitoring well locations consistent with CDPH regulations	from the application site in 30 days. Location three and the footnote have been deleted as requested by the commenter.	

		for groundwater recharge projects. 3) Delete #3. 4) Footnote should be deleted.		
67	20.13 27.2 CASA ACWA WaterReuse Science Advisory Panel	2.2.1. Recommend the following language changes based on Comment 20.9 and 20.12. "For surface application, performance indicator CECs shall be monitored at these locations: 1) Following tertiary treatment prior to application to the surface spreading area; and 2) At a monitoring location after SAT and within a 30-day travel time through an aquifer downgradient of the surface application area. 3) Delete Surrogates shall be monitored in recycled water and groundwater at these	Language has been changed in Attachment A, Section 2.2., to mirror the edit made to Section 2.1.1.	Edits made to Section 2.2.1., Tables 3, 4, and 5.

		locations: 1) Following tertiary treatment prior to application to the surface spreading area; and 2) After SAT, but at no point farther than 30 days downgradient of the SAT treatment process.”		

3.0 Phased Monitoring Requirements

Comment Summary Number	Comment Number	Comment	Response	Policy Changes
68	11.3 U.S Navy	Clarify if initial monitoring includes the evaluation of baseline/background concentrations of CECs. Many of the CECs may occur from the soil and/or recharge conditions. From a mass-balance approach, this is very important in understanding the natural occurrence of health-relevant CECs and/or the true benefits of performance indicators.	The commenter brings up a valid point. Section 4.1.1 has been edited to require consideration of background concentrations.	Edits made to Section 3.1 and 4.1.1.
69	18.9 Los Angeles Department of Public Works	We request that agencies that have completed a pilot demonstration within the conditions prescribed in the Panel's report followed by CDPH approved testing protocols and yielded acceptable results for pilot and startup projects, are not required to conduct additional pilot and /or startup monitoring and that the project sponsor may proceed with full-scale operation.	The proposed amendment is consistent with this recommendation. See Section 3.1, paragraph 3 of Attachment A.	None
70	12.3	Allow for inclusion and	The proposed amendment is	None

	Groundwater Resource Association of California	consideration of CEC data collected during previous phases of activity, e.g., demonstration or pilot testing, in establishing initial and baseline conditions.	consistent with this recommendation. See Section 3.1, paragraph 3 of Attachment A.	
71	12.2 Groundwater Resource Association of California	Provide an approach whereby CEC monitoring requirements may be periodically reviewed and adjusted based on previous data.	The phased monitoring approach allows monitoring adjustments between the phases based on data collected in the previous phase.	None
72	21.6 Heal the Bay Coastkeeper Alliance	The CEC monitoring list itself should be reviewed on a biennial basis initially, since the science, number of new chemicals, and pharmaceuticals coming on the market are changing so rapidly.	Staff recognizes that information on CECs can change rapidly. But requiring updates on CEC monitoring requirements every two years does not allow enough time for a science advisory panel to evaluate the data and for staff to prepare an amendment of the monitoring requirements in the Recycled Water Policy. As stipulated in the Recycled Water Policy, the review will take place every five years. This will allow enough time for a science advisory panel to adequately review the data and update the MTLs as well as other information as appropriate.	None

73	20.16 CASA ACWA WateReuse	3.1 – Footnote 9. Revise the footnote to reflect the appropriate POMs for each type of groundwater recharge project in comments 20.9, 20.12, 20.14, and 20.15. Recommended language "Unit processes that have been selected in consultation with CDPH and the Regional Water Boards for monitoring in accordance with this Policy to evaluate treatment or removal of CECs."	Staff considers this level of specificity to be unnecessary in this sentence, which is a topic sentence for an introductory paragraph.	None
74	5.5, 8.8, 15.9, 20.17, 20.38, 24.7 City of Los Angeles Department of Public Works Orange County Sanitation District TRI-TAC CASA ACWA	3.1, ¶ 3. The Amendment should allow credit for historical, piloting and research data to satisfy or offset initial assessment, baseline, and standard operational monitoring. Proposed language change is "for existing groundwater recharge reuse projects or agencies that have conducted or sponsored pilot testing or other relevant research regarding CEC indicators and surrogate occurrence and/or performance, total or partial credit for historical monitoring,	The proposed language was not inserted, although staff did some minor editing of the third paragraph in Section 3.1. It also added a footnote ten to provide some additional clarification of when the initial assessment can be skipped.	Edit made to Section 3.1. Addition of footnote 10.

	WateReuse Orange County Water District	piloting, or research data should be used to modify the initial assessment phase requirements of this Policy for health-based and performance CECs and surrogates, including selection of constituents and monitoring frequency. In cases where all of the initial assessment requirements are satisfied using historic, piloting, or research data, projects are eligible for baseline monitoring requirements (Section 3.2). In cases where the initial assessment monitoring is satisfied, an agency would be eligible for the baseline monitoring phase; in cases where the initial assessment and baseline monitoring are satisfied, as agency would be eligible for the standard monitoring phase (Section 4)."		
75	25.1 Water Replenishment District of Southern California	3.1, ¶ 3. Add a footnote after the word "equivalent" that states "to be considered equivalent, data from prior assessment need not replicate the exact frequency and duration of the initial assessment phase	A footnote has been added as requested.	Footnote 10 added.

		requirements specified in Table 3, if the overall robustness and size of the available data are deemed sufficient to adequately characterize the surrogates and treatment performance under consideration." Very few projects, if any, will have monitoring data replicating the exact same frequency and duration (weekly for first three months, then monthly for next nine months). Therefore, since surface application projects with a long, demonstrated history of successful operation that have been using recycled water for groundwater recharge for 50 years, enabling characterization of the recycled water both before and after its release to the spreading ground, should be allowed to be used in the assessment, instead of the stated monitoring frequency requirement.		
76	20.18 CASA	3.1 ¶ 4The current language leaves CDPH out of the decision making process for	A sentence has been added to Section 3.1, which requires the Regional Water Board to	Edit made to Section 3.1.

	ACWA WateReuse	the appropriate response action and is not consistent with the panel's recommendation. Replace text with the revised language below. "Monitoring results shall be evaluated following each sampling event to allow timely implementation of any response action. If evaluation of monitoring results indicates that an indicator CEC exceeds the suggested threshold, the recharge agency should consult with CDPH and the Regional Water Board to identify the need for and extent of increased monitoring to confirm the presence of the CEC(s), source identification studies, and/or toxicological studies. If warranted, increased monitoring may involve removal studies or modification of plant operation."	consult with CDPH, before changing the monitoring and reporting program.	
77	8.9, 15.10, 20.39 Orange County Sanitation	Clarify how CECs and surrogates are selected and monitoring frequencies determined for standard operation monitoring. The	Staff added one clarifying sentence to describe the process for selecting surrogates. Staff decided not to add additional information	Edit made to Section 3.2.

	District TRI-TAC CASA ACWA WateReuse	Amendment should explicitly allow for new and updated MTLs to be used to evaluate data as well as to inform decisions regarding the need for continued monitoring and/or appropriate response actions. In cases where the continued collection of data is no longer yielding useful information for health-based or performance based parameters, the Amendment should provide an off ramp to allow for data collection to cease. All monitoring programs should be monitored over time, and adjustments made to ensure that scarce resources are used to collect useful information, and where appropriate non-essential monitoring should be reduced or eliminated.	on determining monitoring frequencies for surrogates, believing these should be determined on a project-specific basis and that the proposed amendment should not be more prescriptive in this area. The MTLs are to be updated every five years as new information becomes available and the Recycled Water Policy is amended. To ensure statewide consistency, staff did not propose that the Regional Water Boards prescribe the MTLs. Section 3.3 states that "the list of health-based CECs required for monitoring may be revised if the monitoring results reach the threshold level presented in Table 7." Hence, the proposed amendment provides an off ramp in the standard operation monitoring phase for health-based CECs.	

78	20.15, 27.3 CASA ACWA WateReuse Science Advisory Panel	3.1 Initial Assessment. The requirement misinterprets the purpose of the initial CEC monitoring. In particular, the information will be used to establish the expected removal rates for CEC performance indicators and surrogates for baseline and subsequent monitoring. The panel recommendation allowed for assessment in the unsaturated zone or groundwater; this language implies all projects would have to assess unsaturated zones, which is not feasible. In addition, it is infeasible to collect sufficient sample volume to evaluate all CECs using a lysimeter in unsaturated zones. Recommend the following language change. " The purposes of the initial assessment phase are to (1) identify the occurrence of health-relevant CECs, performance indicator CECs and surrogates in recycled water and for surface application projects in	Language has been changed in Attachment A to state that a purpose of the initial assessment is to "specify the expected removal percentages for indicator CECs and surrogates."	Edit made to Section 3.1.

		groundwater as set forth in Attachment A. (2) determine the effectiveness of treatment of the unit processes, (3) define the project-specific performance indicator CECs and surrogates to monitoring during the baseline phase, and (4) establish expected removal percentages for performance indicator CECs and surrogates."		
79	4.4 Eastern Municipal Water District	The Regional Water Boards should not have the discretion to increase surrogate monitoring beyond those that are listing in Table 2 of Attachment A of the draft amendment, for both groundwater recharge and landscape irrigation projects	The language in Tables 3, 4, and 5 for surrogate monitoring frequency has been revised to make it project-specific. The Regional Water Boards have the discretion to prescribe the monitoring frequency after receiving a recommendation from CDPH.	None
80	7.3, 7.4, 7.6 City of Santa Rosa	For Landscape Irrigation (Tables 3, 4, and 5). Monitoring frequency for turbidity and chlorine residual should be changed to "daily or online", rather than "continuous measurements".	The language "continuous" was changed to "online" in Section 1.2. Surrogate monitoring frequency is no longer specifically prescribed in Tables 3, 4, and 5.	Edit made to Section 1.2.
81	9.12 Heal the Ocean	A more robust program for monitoring CECs in recycled water for irrigation should be used, including adding NDMA	While human exposure to recycled water used for landscape irrigation can occur through incidental contact or	None

		on the irrigation monitoring list. Based on the Panel's original calculations (Draft Report), NDMA was found to have a MEC/MTL ratio above 1 for irrigation, which warranted monitoring. However, for the Final Report, the Panel revised the formula for calculating the MTL (irrigation) by reducing the estimated water ingestion by human from water in irrigation. This calculation lowered the MEC/MTL ratio by an order of magnitude causing NDMA ratio to fall below 1.	accidental consumption of recycled water, the Science Advisory Panel concluded after completing its risk assessment that a monitoring program for CECs is not warranted for recycled water used for landscape irrigation.	
82	11.11 U.S. Navy	3.1 Paragraph 2. Define "measureable removal".	Staff does not believe that "measurable removal" needs to be defined in Attachment A. Analytical methods are accurate to within a certain percentage range. If the difference between the influent concentration and effluent concentration is within this range, then the removal has not been measured.	None
83	9.9 Heal the Ocean	Adjust the monitoring frequency for all CECs in order to ensure a more conservative approach to the monitoring program. In order to establish an accurate reading of CECs	To stay consistent with the Science Advisory Panel recommendations, the monitoring frequency for CECs will be quarterly for project start-ups decreasing to semi-	None

		in recycled water, monitoring frequency for all CECs should be monthly, instead of quarterly as stated in the proposed monitoring requirements. Future phases should conduct monitoring on a semi-annual basis at a minimum.	annually or annually for mature operational phases. More frequent monitoring would increase monitoring costs, which are significant for CECs.	
84	11.10 U.S Navy	Section 3 - Phase Monitoring. Specify how the monitoring decision points will be set and documented for each phase. For example, this section stipulates that the list of constituents to be measured be refined based upon the monitoring results and findings of the previous phase. Explain the process for documentation of this refinement.	The Regional Water Board will issue a monitoring and reporting program. The monitoring and reporting program will require the submittal of a report at the completion of each phase. In the report, the project proponent will propose modifications to the monitoring program.	None
85	18.7 Los Angeles Department of Public Works	Table 3, 4, and 5. Weekly sampling should be changed to quarterly. Weekly sampling would not be expected to show large differences in the data analysis and this is consistent with the Panel's findings.	Language has been changed in Attachment A stating that monitoring frequency shall be determined by the Regional Water Boards in consultation with CDPH.	Edits made to Tables 3, 4, and 5.
86	18.8 Los Angeles Department of Public Works	Initial and baseline sampling should be combined into one - three year timeframe. While this will remove a portion of the sampling and analysis burden	Staff believes that both phases as recommended by the Science Advisory Panel are necessary, so that CECs and surrogates monitored and their	None

		on the recycled water project, it will still serve the purpose of gathering the needed information.	frequency can be adjusted between the phases based on the data collected.	
87	20.19 CASA ACWA WateReuse	3.2, ¶ 1. Instructions for selection of performance indicator CECs should not be based on detection alone. Replace third sentence with "[p]erformance indicator CECs that exhibit reduction by unit processes and/or provide an indication of operational performance shall be selected for monitoring during the baseline monitoring phase." Replace ¶ 2 with "For existing groundwater recharge reuse projects or agencies that have conducted or sponsored pilot testing or other relevant research regarding CEC indicators and surrogate occurrence and/or performance, credit for historic monitoring, piloting, or research data should be used to modify the baseline monitoring requirements for health-based and performance indicator CECs and	The sentence on performance indicator CECs has been edited as requested by the commenter. Staff does not believe that the additional language proposed regarding using historic data to justify moving on to standard operating requirements is necessary. The commenters' proposed language is more specific, but the meaning is not inherently different.	Edit made to Section 3.2.

		surrogates, including selection of constituents and monitoring. In cases where the initial assessment and baseline monitoring are satisfied, a project would be eligible for the standard monitoring phase (Section 4).		
88	20.20 CASA ACWA WateReuse	3.2, ¶ 3. Replace text with the revised language below. The current language leaves CDPH out of the decision making process for the appropriate response action and is not consistent with the panel's recommendation. "Monitoring results shall be evaluated following each sampling event to allow timely implementation of any response actions. If evaluation of monitoring results indicated that an indicator CEC exceeds the suggested threshold or that expected treatment performance based on the initial assessment phase is not attained, the recharge agency should consult with CDPH and the Regional Water Board to identify the need for and extent	Language has been changed to reference the respective roles of the Regional Water Board and CDPH, although not exactly as the commenter requested. A sentence was added, stating that "If additional monitoring is required, the Regional Water Board shall consult CDPH and revise the Monitoring and Reporting Program as appropriate."	Edit made to Section 3.2.

		of increased monitoring to confirm the presence of CEC(s), source identification studies, and/toxicological studies. If warranted, increased monitoring may involve removal studies or modification of plant operation."		
89	20.21 CASA ACWA WateReuse	3.2, ¶ 4 and 3.3, ¶ 1 and 3. Health-based CECs, and monitoring refinements based on the minimum threshold should consider updated MTLs that are available in the literature from legitimate research. For performance CECs that are no longer detected at concentrations that render them useful for evaluating performance, the monitoring should be refined. The language is not clear with regard to how modifications can be made to the requirements in Table 5 for the standard operation monitoring. Recommend the following changes. 3.2 ¶ 4 "Following the baseline	The MTLs will be updated every five years as recommended by a future Science Advisory Panel. Some changes have been made to clarify that a health-based CEC may be removed from the monitoring program after the baseline monitoring phase. .	Edit made to Section 3.3.

		operation monitoring phase, monitoring requirements shall be re-evaluated and subsequent requirements for the standard operation of a project shall be determined on a project-specific basis in consultation with CDPH. Modifications may include reductions in constituents and sampling frequency, including discontinuing monitoring, or the requirement to conduct only one round of monitoring every five years." 3.3, ¶ 1 "Based on the finding of the baseline monitoring phase, monitoring requirements for health-relevant CECs, performance indicator CECs, and surrogates may be refined from the requirements in Table 5 to established project-specific requirements for monitoring the standard operating conditions of a groundwater recharge reuse project. The list of health-based CECs required for monitoring may be revised if monitoring results show that		

		the ratio of the measured concentration to the monitoring trigger level is less than or equal to 0.1 based on the monitoring trigger levels presented in Table 6. Or updated monitoring trigger levels based on valid research. The list of health-based CECs may also be revised or monitoring may be discontinued should the data no longer be considered relevant based on consultation with CDPH. Performance indicator CECs and surrogates detected during the baseline phase and that exhibited reduction by a unit process and/or provided an indication of operational performance shall be selected for monitoring of standard operations. Modifications to the list of performance indicator CECs and surrogates may be made or monitoring can be discontinued should the data no longer be considered relevant based on consultation with CDPH. 3.3, ¶ 3 – Recommend the		

		following language change. "For those CECs and surrogates selected for standard operations monitoring, monitoring for health-based CECs and performance indicator CECs shall be conducted on a semi-annual basis. The frequency may be adjusted to annual monitoring if, the project demonstrates consistency in treatment efficacy in removal of CECs, treatment operational performance, and appropriate recycled water quality.[10] Monitoring frequency for CECs and surrogates for standard operation monitoring are presented in Table 5."		
90	20.22 CASA ACWA WateReuse	Table 3 (Initial Assessment), Footnote 1 and 2. <u>Surface Application</u> Monitoring frequency for surrogates should be deleted from the table. Instead, state that monitoring locations shall be selected in consultation with CDPH and the Regional Water Board.	The proposed amendment has been edited to state that the monitoring frequency for surrogates shall be determined on a project-specific basis. Some edits were added to section 1.2 to clarify roles in surrogate selection. Otherwise, staff believes the	Edits made to Table 3. Also see response to comment summarynumbers 66, 67, and 68.

		Selection of surrogates: If the Board intends to allow for fewer or different surrogates to be used and that not the entire expert panel recommended surrogates may be necessary, then some clarification in the language is needed. Recommended language: "Table 2 presents the list of surrogates to be considered for monitoring treatment of recycled water used for groundwater recharge reuse and landscape irrigation" "Surrogates shall be selected in consultation with CDPH and the Regional Water Board in Table 2 on a case-by-case basis and shall be appropriate for the treatment process or processes. For example, chlorine residual is not an appropriate surrogate for projects that do not use chlorine-based compounds for disinfection." <u>Subsurface Application</u>	language is clear. The surrogates in Table 2 are to be considered for monitoring, but others may also be used, subject to approval by the Regional Water Board in consultation with CDPH. In the tables, "continuous" has been struck, since the frequency for surrogates is no longer specified.	

		Delete specific monitoring locations for performance-based CECs and surrogates from the table. Instead, state that monitoring locations shall be selected in consultation with CDPH and the Regional Water Board. Monitoring frequencies for TOC – Delete daily monitoring frequency for the first 400 hours of operation, and instead state that the frequency shall be selected in consultation with CDPH and the Regional Water Board. Continuous Monitoring – Change the term "continuous" the table and use "on-line monitoring". Online monitoring should be allowed to be used for TOC. Landscape Irrigation – Monitoring frequency for these parameters should be changed to "daily or online." For some smaller plants, it may be more practical to conduct daily rather than continuous.		
91	20.23	Table 4 (Baseline Monitoring),	Language for locations and	Edits made to Table 4. Also

	CASA ACWA WateReuse	Footnotes 1 and 2. <u>Surface Application</u> Selection of performance indicator CECs - Delete monitoring frequency for surrogates from the table. Instead, state that monitoring location shall be selected in consultation with CDPH and the Regional Water Board. <u>Subsurface Application</u> Delete specific monitoring location for performance-based CECs and surrogates from the table. Instead, state that monitoring location shall be selected in consultation with CDPH and the Regional Water Board. Monitoring frequencies for TOC - Delete monitoring frequency in the table. Instead state that the frequency shall be selected in consultation with CDPH and the Regional Water Board. Continuous Monitoring – –	frequencies for surrogates in Table 4 has been edited to state that they are to be selected on a project-specific basis.	see response to comment summary numbers 66, 67, and 68.

		Change the term “continuous” the table and use “on-line monitoring”. Online monitoring should be allowed to be used for TOC. Landscape Irrigation – Monitoring frequency for these parameters should be changed to “daily or online.” For some smaller plants, it may be more practical to conduct daily rather than continuous.		
92	20.24 CASA ACWA WateReuse	3.3, ¶ 2. “Monitoring locations for the standard operation phase shall be the same as the locations used for the baseline monitoring phase.” See comments 20.9, 20.12, 20.13, 20.14, 20.22, and 20.23.	Staff is not sure how the earlier comments relate to this language.	None
93	20.25 CASA ACWA WateReuse	3.3, Table 5, Footnotes 1 and 2. <u>Surface Application</u> Monitoring locations for CECs and surrogates and Footnotes 1 and 2 Selection of CECs and	The monitoring frequencies for surrogates have been changed to “based on findings of the baseline assessment phase”. The proposed amendment has been edited to state in Table 4 “at monitoring well locations designated in consultation with CDPH for performance and	Edits made to Table 4.

		surrogates – Delete monitoring frequency for surrogates in the table. Instead, state that monitoring locations shall be selected in consultation with CDPH and the Regional Water Board. <u>Subsurface Application</u> Delete monitoring locations for performance-based CECs and surrogates in the table. Instead, state that monitoring locations shall be selected in consultation with CDPH and the Regional Water Board. Monitoring frequencies for TOC - Delete monitoring frequency in the table. Instead, state that the frequency shall be selected in consultation with CDPH and the Regional Water Board. Continuous Monitoring – – Change the term “continuous” the table and use “on-line monitoring”. Online monitoring should be allowed to be used for TOC Landscape Irrigation –	indicator CECs.” References to specific surrogates have been deleted.	

		Monitoring frequency for these parameters should be changed to “daily or online.” For some smaller plants, it may be more practical to conduct daily rather than continuous.		

4.0 Evaluation of CEC and Surrogate Monitoring Results

Comment Summary Number	Comment Number	Comment	Response	Policy Changes
94	8.10, 15.11, 20.29, 20.40 Orange County Sanitation District TRI-TAC CASA ACWA WateReuse	4.2, Table 7. Response to health-based CEC results should be based on consultation with CDPH and Regional Board, and not a mandatory framework. The responses in Table 7 reflect the "guidance" offered in the expert panel report; however, the expert panel recommended that specific actions be developed in consultation with the regulatory agencies on a case-by-case basis. Recommend the following language changes. Page 17 "The recycled water producer or groundwater recharge reuse agency shall evaluate health-relevant CEC monitoring results to determine the appropriate response actions. The producer or recharge agency shall conduct the	The language in Table 7 has been edited to require additional monitoring if the MEC/MTL ratio is greater than ten and less than or equal to 100. If the ratio is higher, the proposed amendment requires the project proponent to contact the Regional Water Board and CDPH to discuss additional actions. Staff believes that this will provide appropriate flexibility to deal with varying issues.	Edits made to Section 4.2.

		evaluation by comparing the measured CEC concentration (MC) to their respective monitoring trigger levels [11] (MTL) listed in Table 6 to determine MC. The MTL ratios to the thresholds presented in Table 7. The recycled water producer or groundwater recharge reuse agency shall confer with CDPH and the Regional Water Board regarding appropriate response actions taking into consideration the basis of the (initial) MTL; what is known and what is not known about the particular chemical, the chemical's potential health effects at the given concentration, the source of the chemical, as well as possible means of better control to limit its presence, treatment strategies if necessary, and other appropriate actions. Table 7 presents examples of potential response actions corresponding to the thresholds." Footnote 11- "Monitoring		

		Trigger Level (MTL): Health-relevant screening level value for a CEC for a particular water reuse scenario. MTLs were established in, *Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water – Recommendations of a Science Advisory Panel*, dated June 25, 2010. MTLs from valid research may be used to evaluate CEC data in lieu of the MTLs in Table 6." Table 7. Change title to "Potential Response Action".		
95	20.30 CASA ACWA WateReuse	4.2 ¶ 1. Revise the language to clarify the applicable monitoring location being assessed. For surface application, the location should be post-SAT; for subsurface application, the location should be final product water. Recommend the following language change. "The recycled water producer or groundwater recharge reuse agency shall evaluate health-relevant CEC monitoring	Language was added to provide clarification, although not exactly as proposed by the commenter.	Edit made to Section 4.2.

		results to determine the appropriate response actions. For surface application, the results should be evaluated for groundwater collected after SAT and within a 30-day travel time distance through an aquifer down-gradient of the surface application area. For subsurface application projects, results should be evaluated for the final recycled product water."		
96	9.5 Heal the Ocean	Incorporate CDPH's response level for the Drinking Water Notification List into the proposed monitoring requirements. Given the fact that chemicals (RDX, TBA, 1, 2, 3, TCP, TNT, NDPS, 1,4-Dioxane, NDMA, and NDEA) pose a cancer risk and that CDPH identified them as important enough to apply individual response levels, the State Water Board should not apply the more arbitrary response level framework across all of these CECs. There is no sense in ignoring the valuable work done by CDPH to more accurately evaluate and respond to the	This framework was developed and recommended by the Science Advisory Panel. Staff supports the framework and finds it a logical method to assess risk and evaluate whether a constituent should be monitored. The proposed amendment, however, allows CDPH to recommend additional CECs to monitor. If it does so, the Regional Water Board would add these CECs to the monitoring requirements.	None

		health risk posed by the presence of such hazardous CECs.		
97	9.10 Heal the Ocean	Table 7. Adjust threshold levels and response actions to reflect the specific risks associated with each health based CEC. There is not sufficient justification for these thresholds and response actions. Table 7 applies a single arbitrary framework over all the health-based CECs. Considering that there are only a few health-based CECs on the proposed monitoring list, it would be difficult for the State Water Board to review the health risks associated with each CEC, and subsequently propose specific response actions for each. While review of all response actions and associated thresholds in Table 7 is critical, close review and attention is needed for Parts E and F.	The Science Advisory Panel selected conservative thresholds because of the limited toxicological information available. Staff believes that there is no need to adjust them to make them more conservative. The proposed amendment lists several response actions that can be taken for high levels of CECs relative to the thresholds. These are to be evaluated by the Regional Water Board and CDPH to determine the appropriate response to a high level.	None
98	16.3 Santa Clara Valley Water District	Table 7. Clarify that the response actions (based on health relevant CECs and MC/MTL ratio) apply to monitoring results from either recycled water or groundwater.	The table was simplified. A single response now may require the project proponent to contact the Regional Water Board and CDPH. The appropriate action, however, is	Edits made to Table 7.

		It is not clear if a single result would trigger the indicated response for Actions B through F.	to be determined after consideration of the circumstances.	
99	16.4 Santa Clara Valley Water District	Concern that many of the proposed response actions identified are not adequately protective of groundwater. For example. 1) With MTL of 10 ppt, NDMA could be detected up to 1,000 before an immediate resample would be required (Action D). This is well above the concentration at which CDPH recommends source removal for NDMA (300 ppt). However no additional downstream monitoring is required to ensure drinking water is protected. 2) Under Action E, the implementation of a source identification and additional monitoring would only be required if NDMA was detected between 1,000 and 10,000 ppt.	The MTLs are very conservative, and are used only for the purpose of prioritizing CECs for monitoring. If MTLs are exceeded, this does not necessarily indicate the existence of public health risk. Immediate action (e.g., investigations), beyond rechecking the data and resampling, should not be applied until the MEC/MTL ratios are greater than 100.	None

		Immediate conference with the Regional Water Board and CDPH is not required until the MC/MTL is over 1,000 ppt, which for NDMA would correspond to a concentration over 10,000 ppt.		
100	16.5 Santa Clara Valley Water District	Review response actions to ensure that they are adequately proactive, responsive, and protective of the beneficial use of groundwater. An additional downstream monitoring should be required under Action C as this could correspond to CEC concentrations well above Notification Levels. Potential additional downstream monitoring locations should be identified prior to project startup to ensure timely access is needed. Timely notification to the Regional Water Board and CDPH under Actions D and E is also needed.	Under response action C, the proposed amendment requires resampling if the MEC/MTL ratio is between one and ten. Staff does believe that additional action is necessary at this level, because the MTLs are conservation values. A notification level is not a limitation and water purveyors may distribute water that exceeds a notification level.	None
101	9.11 Heal the Ocean	The monitoring requirements need to clarify which monitoring locations will be used in evaluating the	Language was added in Section 4.2 of Attachment A to provide more clarification.	Edit made to Section 4.2.

		corresponding response actions for the suites of CECs. For example, is not clear whether monitoring will be done prior to soil aquifer treatment or afterwards for surface spreading. This is a consequential omission since the MEC/MTL ratio can change significantly between different monitoring locations.		
102	11.12 U.S. Navy	4.1 – Removal Differential Equation. If the removal differential is to be reported as percent, the equation should be multiplied by 100. Also, the ambient concentration in the aquifer prior to application of the recycled water should be included in this equation.	The proposed amendment has been edited to require the collection of background samples before project operation and to account for the background concentration when calculating the removal percentage.	Edit made to Sections 4.1 and 3.1.
103	11.13 U.S. Navy	4.1.1 - Define “other sources” and how the dilution is calculated.	Section 4.1.1 has been edited to delete “other sources” and state “dilution water, such as potable water applied to the application site, storm water applied to the application site, or native groundwater.	Edit made to Section 4.1.1.
104	11.14 U.S. Navy	Table 6. Describe the decision process if analytical detection capabilities are unable to meet the monitoring results and expected removal efficiencies and/or health-relevant trigger	The CECs were selected for their propensity to be present in recycled water at concentrations that can be monitored. Additional language has been added,	Edits made to Sections 3.2 and 3.3.

		levels.	however, to explain what to do if a CEC performance indicator proves to be poor performance indicator. If a health-based CEC is not found during the initial and baseline monitoring phases, it can be deleted from the monitoring program as explained in Section 3.3, third sentence "The list of health-based CECs required for monitoring may be revised if monitoring results meet the conditions of the minimum threshold levels presented in Table 7."	
105	19.6 Inland Empire Utilities, Municipal Water District	Table 6. This table or section should explicitly state that, "if a CEC in recycled water is "non-detect" and/or does not exceed the MTL specified in Table 6, analysis of a sample from subsurface (unsaturated zone and groundwater) monitoring locations should not be required." For CECs that are "non-detect" and/or below the MTL, the monitoring frequency of the recycled water should remain as annually, unless the CEC is detected and/or	The proposed amendment allows the discontinuance of monitoring CECs that are consistently not detected. This is expressed in Section 3.3 and Table 7.	None

		exceeds the MTL, which would then prompt testing in the subsurface monitoring locations.		
106	20.27 CASA ACWA WateReuse	4.1.1, ¶ 1. The language is not consistent with the panel Report and the recommended location for performance monitoring. Monitoring locations should be determined in consultation with CDPH and the Regional Water Boards. Recommend the following language change. "For groundwater recharge reuse by surface application, the removal differential shall be determined by comparing the recycled water quality prior to release to the groundwater spreading basin and at a location selected in consultation with CDPH and the Regional Water Board after SAT and within a 30-day travel distance through an aquifer downgradient of the surface application area taking into account any effect from the presence of dilution water.	Language has been modified in Attachment A, although not exactly the same as proposed by the commenter. It now states that: For groundwater recharge reuse by surface application, the removal percentage shall be determined by comparing the quality of the recycled water applied to a surface spreading area to the quality of groundwater at monitoring wells. The distance between the application site and the monitoring wells shall be no more than the distance the groundwater travels in thirty days from the application site. The location of the monitoring wells shall be designated in consultation with CDPH. The removal percentage shall account for any effects from the presence of dilution water, such as potable water applied to the application site, storm water applied to the application	Edit made to Section 4.1.1.

		"For evaluating removal of CECs, the treatment zone for soil aquifer treatment is from the surface of the application area through the unsaturated zone to groundwater after SAT and within a 30-day travel time distance through an aquifer downgradient of the surface application area."	site, or native groundwater."	
107	8.4, 15.5, 20.26, 20.34 Orange County Sanitation District TRI-TAC CASA ACWA WateReuse	Page 8. Modify or verify that the goal of the initial CEC monitoring assessment is to establish project-specific expected removal rates. The expert panel recognized that removals would be unique for each project and recommended an initial monitoring phase to establish expected removals for use during subsequent monitoring phases. Recommend the following language change. 4.1 ¶ 2. "The expected removal differentials for performance indicator CECs and surrogates for each groundwater recharge reuse project will be established as part of the initial	Language was changed in response to the comment.	Edits made to Section 4.1.

		phase of monitoring. One example of removal differentials from Drewes et al. (2008) for each application scenario and their associated treatment processes (i.e., soil aquifer treatment or RO/AOPs) is presented in Table 6. The expected removal differentials established for each project will be used to evaluate treatment efficacy and operational performance." Recommend that Table 6 include the following footnote for the column Expected "Removal Differential (%)": "Footnote x - the removal differentials presented in this table are from the work by Drewes et al. (2008), and provide an example of performance for that specific research. Project specific removal differentials will be developed for each groundwater recharge project as part of the initial monitoring phase.		
108	20.28	4.1.2, ¶ 1. The language is vague with regard to the	Staff believes that the existing language is clear. "Before	None

	CASA ACWA WateReuse	location for collecting the pre-advanced treatment sample. Recommend the following language change. "For groundwater recharge reuse using subsurface application, the removal differential shall be determined by comparing recycled water quality in the feedwater before RO/AOPs and after treatment prior to release to the aquifer."	treatment by RO/AOPs" means the same as "feedwater before RO/AOPs".	