

Task 1.3 - SSALTS Study Area Characterization

Task	Comment No.	Date Received	Comment Source	Deliverable	Comment	Response
1.3	1	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB)	Study Area Characterization	The case studies presented in the report represent projects in several stages of development. Some are conceptual while others are in operation. The status of each should be made clear.	<p>Changes were made to appropriate Study Area Sections to describe their current status as follows:</p> <ul style="list-style-type: none"> • City of Dixon: The described methods in the study have been implemented. No major changes were made to address this comment. • City of Tracy: The change in source water has been implemented and is already indicated in the Section. • Hilmar Cheese Company: Clarification was added that at the time of writing, technical issues regarding the deep well injection were still being worked out. Currently HCC is trucking all brine to EBMUD. • Industrial Food Processing: This unique section talks about all industrial food processing in general. • Red Rock Ranch: Text was added to Section 6.5.3 to indicate the current operational status of RRR (currently they are on stand-by waiting for sufficient irrigation water from Westland's Water District). • Grasslands RTMP: Text was added at the beginning of the Section to describe that the RTMP is a pilot program. • Stevinson Water District: The described projects and water management activities have been implemented (and are currently ongoing) and is already indicated in the Section. • Tulare Lakebed: Minor edits were made throughout the section to clarify the current status of the MUN de-designation. • Westside Region: Any needed clarification was added to the various projects in the Westside Region to clearly state their current stage of development. • San Luis Ocean Disposal: In the opening paragraph, it was indicated that this project was a proposed project that was never accepted. The phrase "(and therefore not yet constructed)" was added to the paragraph to clearly state that this project has not been implemented.
1.3	2	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB)	Study Area Characterization	Some of these projects have been reviewed by the Regional Board while others have not (e.g. the Westside). This means that even the existing projects may not comply with requirements in our Basin Plan. Recently-developed WDRs adopted by the Board have focused on salinity impacts to receiving waters more than in the past, so if a project's WDRs are over 5 years old they may not reflect the current regulatory approach to dealing with salt. Hopefully the report will be able to indicate whether the technical approaches discussed are likely to stand the test of time.	Section 12 of the Phase 1 report analyzes and describes the relative sustainability of each Study Area.
1.3	3	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB)	Study Area Characterization	These case studies range from individual facilities to regional management operations. The key questions are (1) does the project comply with current Basin Plan requirements and other regulations and will it continue to do so over the long term (200 years)? A subset of this issue is the question of what changes to the Basin Plan are needed to allow continued operation of superior salt management approaches. (2) If the local management of salt does not provide a complete solution, what additional steps have to eventually be taken? And (3) where does the salt end up? For example, Red Rock Ranch concentrates salt, but is not designated as a disposal site. Where will the salt go?	<p>(1) Current compliance with the Basin Plan are described in the sections. Any clarification needed will be addressed (as described for each section in other comment responses). The future long-term compliance (50 years) is described in Section 12 of the Phase 1 SSALTS report.</p> <p>(2) Phase 2 of the SSALTS project will look at any additional steps that may need to be taken to create a "complete" alternative.</p> <p>(3) Several of the study areas do not address "where the salt goes" (i.e., Red Rock Ranch and Industrial Food Processors). Any necessary clarification will be added to each Study Area section to address what happens to the salt. In addition Section 12 of the Phase 1 report will summarize the salt disposal methods for each of the study areas. In addition, the long-term sustainability of these salt disposal methods is analyzed in Section 12.</p>

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1.3	4	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB)	Study Area Characterization	The impact of the projects on groundwater quality is often not discussed. This is understandable given the available information, but this is a key element in evaluating the feasibility (and sustainability) of these operations.	Current impacts on groundwater quality were addressed when information was readily available for the particular Study Area. Future potential impact on groundwater quality will be described in Section 12 of the Phase 1 report.
1.3	5	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	The RWQCB would like CDM Smith to look at both short-term and long-term impacts of the current projects, asking the questions of "what are we going to do with the salt in the long-term?" They requested that we remind our readers of the overall picture and where salt is going in each study area.	Section 12 of the Phase 1 report will describe short-term and long-term impacts of each of the Study Areas.
1.3	6	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	The RWQCB would like the report to acknowledge that just because a study area has a WDR that is over 8 years older, is not reflective of how the RWQCB would issue a WDR now, under the current regulatory climate. If the case study wasn't regulated by RWQCB, it does not mean that the project would be approved by the RWQCB. Any renewal or new permits issued would probably be more stringent in how salt is dealt with. The current regulatory status of each of the projects should be made clear in the report.	<p>Potential future regulatory changes in regards to the sustainability of these Study Areas will be described in Section 12.</p> <p>Changes were made to appropriate Study Area Sections to describe their current regulatory status as follows:</p> <ul style="list-style-type: none"> • City of Dixon: No changes were made - currently under R5-2008-0136 as described in the section. • City of Tracy: No changes were made - currently under R5-2012-0115 as described in the section. • Hilmar Cheese Company: No changes were made - currently under R5-2010-0008 as described in the section. • Industrial Food Processing: Current regulatory status would depend on individual food processors. • Red Rock Ranch: Information in the IRLP was added to Section 8.3.3. • Grasslands RTMP: Clarity as to the regulatory status was added in the last paragraph of Section 7.3.3. • Stevinson Water District: Information in the IRLP was added to Section 8.3.3. It is unknown in agricultural growers in the Stevenson Water District are part of a coalition or obtaining a WDR as an individual grower, or a mixture of the two. • Tulare Lakebed: Language was added in regards to the current regulatory requirements for the evaporation basins. • Westside Region: Any needed clarification for the various projects in the Westside Region are described was added to clarify their current regulatory status. • San Luis Ocean Disposal: As this is a concept there is no regulatory status for this project because it has not been implemented. Additional information about the IRLP has been added in Section 11.3.3.
1.3	7	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	Real-Time Management: This project is more of a concept than a current project. It is not in place and the RWQCB would need to review and approve the project if it were to happen.	This was clarified in last paragraph of Section 7.3.3.
1.3	8	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	Westside: Many elements of this Plan would not be approved by the Board (including pumping saline groundwater for use in irrigation. This Plan has not been reviewed or adopted by the Board.	The Study Area Section (10.5) has been revised so that the discussion does not revolve around the Plan necessarily but more about what is currently being done or planned.
1.3	9	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	Westside: Westland's Drainage District never drained to the San Joaquin River, although initially using the San Luis Drain, the district became a closed system in the end. Currently the salt is accumulating in the groundwater.	Thank you for this information. The text in the Study Area Section was clarified.
1.3	10	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	Westside: Grasslands had historically discharged through wetlands to the San Joaquin River.	Thank you for this information. The text in the Study Area Section was clarified.

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1.3	11	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	Westside: Add discussion on the 1996 Basin Plan amendment	Language was added in Section 10.3.3
1.3	12	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	Westside: Break the section into Westside (a closed system) and Grasslands (an open system which releases to the River downstream of the Merced River. The District is looking at becoming a closed system).	This comment was incorporated in Section 10.5
1.3	13	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	RRR: Currently there are 2 or 3 IFDM operators (including Rainbow Ranch). The IFDM concept has never really taken off and the SSALTS TM should describe why this concept has not taken off and what a new WDR for the project might look like (including impacts of selenium to wildlife).	Potential regulatory requirements for the implementation of an IFDM system will be discussed in Section 12 of the Phase 1 report. Language about how IFDM is transitioning into to more of a Regional Reuse process has been added to Section 6.8.1.
1.3	14	04/03/13	Jeanne Chilcott & Rudy Schnagl (CVRWQCB) - Meeting Notes	Study Area Characterization	Tulare Lake: The use of evaporation basins has decreased as a result of RWQCB regulations to prevent the degradation of groundwater. Also any attempts to increase the volume of existing basins are having a difficult time	Thank you for this information. This comment was made prior to the release of the Tulare Lakebed Study Area Section. This was taken into consideration throughout the writing of the Study Area.
1.3	15	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	HCC would prefer the section not focus on past regulatory and enforcement issues that the company has faced. HCC would prefer the section focus on current operations and what the company has been doing since the permit was issued in 2010. These regulatory issues are sensitive to the company.	Although CDM Smith kept many changes to the HCC Section made by Mr. Fleischer, large deletions of text regarding past regulatory and enforcement issues were not incorporated. CDM Smith felt that this information was important to provide the regulatory context under which HCC made specific changes. It also provides other industrial food processors with information as to potential future regulatory issues that may occur.
1.3	16	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	Currently the HCC section has generic information, which is not representative of the HCC. Burt F will provide specific information to include in revisions for the section.	Thank you for this information. CDM Smith has incorporated HCC specific information as provided by Mr. Fleischer throughout the section.
1.3	17	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	The main regulatory barrier has been the Basin Plan, which requires an discharge EC of 900 uS/cm.	This information will be discussed in Section 12 and subsequent phase of the SSALTS project.
1.3	18	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	Another barrier has been disposal of wastewater using deep well injection. The compatibility of the injected concentrate and the formation zone has created precipitates that are currently plugging the well. There is ongoing efforts to resolve this problem. Currently HCC's wastewater is not injected into the ground. All wastewater is being trucked to EBMUD.	This information was added to Section 4.5.3 and 4.8.
1.3	19	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	HCC would like the section to clarify that the aquifer that the concentrate would be injected into has a higher salinity than the concentrate.	This information was added in Section 4.7.
1.3	20	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	The ancillary effects of trucking the concentrate to EBMUD are the fuel costs and air quality effects. HCC generates approximately 125 to 130 thousand gallons of concentrate per day that is currently being trucked to EBMUD. HCC reports their shipments to EBMUD to the RWQCB through their monthly WDRs	Thank you for this information. CDM Smith considered these environmental impacts in Section 12.
1.3	21	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	The long-term sustainability of the treatment system is what concerns HCC. Currently the treatment system needs to be operated 24 hours/day, 7 days/week, 365 days/year to meet the WDR requirements. Potential hiccups could cause violations with the permit.	Thank you for this information. CDM Smith incorporated these sustainability concerns in Section 12.
1.3	22	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	The composition of HCC's wastewater changes daily, and is highly dependent on the number of cleaning in places (CIPs) that occur in a day from the three plants (Cheese, Lactose, and Protein).	This information was added in Section 4.5.
1.3	23	05/24/13	Burt Fleischer (Hilmar Cheese Company)	Study Area Characterization	The Basin Plan is currently based on "old science" from 1996, and the RWQCB has not considered whether or not it is still appropriate and accurate. Revisions to the Basin Plan should look at crops individually by area basins. Some crops can handle higher EC's. In addition, the future Basin Plan should look at each entity individually, not just falling back to an EC of 900 for everyone. No one can control the volume of salt entering into the basin, which is greater than the volume leaving the basin; and therefore salt is accumulating. The RWQCB seems to be more focused on regulating industries, which are a small contribution to the salt in the valley (<1%). However the regulations are set up as a one-size fits all.	Thank you for this information. CDM Smith will use this information in subsequent Phases of the SSALTS project.
1.3	24	05/23/13	Jose Faria (DWR)	Study Area Characterization	Jose F will provide more detailed comments at a later date.	Thank you for your revisions.
1.3	25	05/23/13	Jose Faria (DWR)	Study Area Characterization	The costs of implementation of IFDM at RRR are slightly off. Jose F will update these numbers. Particularly there are updated cost estimates on the solar evaporator. Jose F will send a copy of the report by Shwabe from UC Riverside that updates these costs.	Thank you for the information you provided.

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1.3	26	05/23/13	Jose Faria (DWR)	Study Area Characterization	IFDM is being looked at more as more of a regional project rather than at individual farms. IFDM helps regions meet discharge goals. For example Grasslands is looking to implement this next year. Westland's is also looking into regional IFDM.	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	27	05/23/13	Jose Faria (DWR)	Study Area Characterization	An updated SB 1372 allows the solar evaporator to be built and used for regional use.	Thank you for the information you provided. It has been added to Section 6.8.2
1.3	28	05/23/13	Jose Faria (DWR)	Study Area Characterization	It is expected that future regulatory changes will reduce water supply by 20% and there is not enough water to farm land. In response, crops are changing to permanent (almonds, citrus, pistachios)	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	29	05/23/13	Jose Faria (DWR)	Study Area Characterization	A report about Rainbow Ranch from the 2000's took a look at mass loading into the project.	Thank you for this information. It was incorporated into Section 6.5.3 and will be considered in the development of Section 12.
1.3	30	05/23/13	Jose Faria (DWR)	Study Area Characterization	Salt accumulation is continuing to be an issue. Even with Regional IFDM, you must look at ways to recycle the salts which could be used to offset costs of the project. Approximately 40% of solar evaporator salts is actually gypsum. Using technology (an example company is New Sky), the salt from solar evaporators could be converted to Sulfuric Acid and Caustic Soda (from the sodium sulfate), gypsum, and table salt (from the sodium chloride). Sulfuric acid is used in industrial processes, while caustic soda could be used in glass bottle productions. A small pilot plant is anticipated in Tulare Lake to research further if this is possible. Costs are still being worked out	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	31	05/23/13	Jose Faria (DWR)	Study Area Characterization	In the next 5 years, regional IFDM is expected to occur in Grasslands. For Westland's it could be in 10 to 20 years.	Thank you for this information. We will use this to develop Section 12 as well as for future use in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	32	05/23/13	Jose Faria (DWR)	Study Area Characterization	Jose F still believes that the brine line is the ultimate solution, however there is no recycling.	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	33	05/23/13	Jose Faria (DWR)	Study Area Characterization	Yoram Cohnen from UCLA is researching how to desalt brackish water on the Westside using RO. There are issues with membrane fouling as a result of varied salinity. A SMART system would monitor the salinity in the incoming water and make needed adjustments.	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	34	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	The City of Dixon SSALTS section should include a discussion that the City looked at all options to meet regulatory requirements. Such options included pollution trading, RO treatment on the effluent, blending with stormwater, and nanofiltration of the well head. These options were analyzed and potential impacts on city sewer rates were looked at. It was assumed that 30% of the chloride would need to be removed based on the estimate from the CDO.	Additional information on the options looked at by the City was included in Section 2.2.
1.3	35	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	Eliminating sources of salt is the cheapest alternative, however it only removes so much salt. Eliminating salt was estimated to cost approximately \$3 per household per month for a 30 % reduction.	Thank you for this information. CDM Smith added this to Section 2.6.
1.3	36	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	The second phase after eliminating sources of salt would be to then dilute effluent with stormwater or high quality surface water which is estimated to cost approximately \$10 per household.	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	37	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	The City of Dixon is planning to develop activated sludge which is planned to reduce salt concentrations by 50% by reducing evaporative losses (which is essentially dilution). With this action, the City is expected to be in full compliance with the CDO. This is a midrange (in terms of cost) solution with an estimated cost of \$40 per household per month.	Thank you for this information. CDM Smith added this to Section 2.8.

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1.3	38	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	The potential alternative of bringing in a new source of water (surface water) or treating water at the well head are very expensive alternatives. Treating water at the well head was estimated to cost \$70 to \$80 per household per month.	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	39	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	For a medium size Central Valley city it was determined that the cost for the range of alternatives varied from: <Reduce Source Salt \$> < Dilution \$\$> <Limit Evaporative Loses \$\$\$><Salt Removal/Treatment \$\$\$\$><New Source or Treatment of Water Source \$\$\$\$>	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	40	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	The 20% decrease in water use as described in the CA Water Plan would correlate to an approximate increase of 25% in salinity.	Thank you for this information. CDM Smith will use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	41	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	The water softener band got about 15% reduction in Chloride (~50% of water softeners = ~15% reduction in chloride)	Thank you for this clarification CDM Smith added this to Section 2.5.5.
1.3	42	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	\$1 million dollars in 20 year present worth = \$1 per household per month	Thank you for this information. CDM Smith may use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	43	05/17/13	Joe DiGiorgio (Stantec for City of Dixon)	Study Area Characterization	The biggest sources of salinity is the Sac River (from Shasta) and the Merced River (from Yosemite) which equate to almost 70% of the total load.	Thank you for this information. CDM Smith may use this information in Phase 2 "Develop Potential Salt Management Strategies" of the SSALTS project. During this phase, CDM Smith will be looking at alternative salt management strategies for the Study Areas.
1.3	44	06/03/13	Roger Reynolds	Study Area Characterization	Stevinson Water District: Is the problem addressed here really a salt problem or a water management problem?	This study area was added at the recommendation of the CV-SATLS TAC. CDM Smith agrees that this study area does not seem to provide a solution for salt management, and is primarily a water management solution. This clarification was added to Section 8.2.
1.3	45	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	CLFP's main comment is that this report does not put food processing discharges into context. According to the 2008 study by Howitt, et al, food processors account for a very small portion of the annual salt load in the Central Valley. They estimated that food processors accounted for 2.08% in the Sacramento Basin, 4.01% in the San Joaquin Basin, and 3.17% in the Tulare Basin. Wineries made an additional very small contribution. Howitt's modeling forecasts indicated little changes in these percentages by 2030.	The following text has been added, "According to the 2008 study by Howitt, et al., food processors account for a relatively small portion of the annual salt load in the Central Valley. The 2005 annual salt loading estimate for food processors accounted for 2.08% in the Sacramento Basin, 4.01% in the San Joaquin Basin, and 3.17% in the Tulare Basin." The 2008 report was a final draft; the cited table, Table 3.1.9, does not appear in the Final report published in March 2009.
1.3	46	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Industrial Food Processing: Incorporate editorial comments throughout the Study Area Section	The editorial comments provided by the CLFP were incorporated throughout the Study Area.
1.3	47	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Regarding Table 5-1: This table should also show fixed dissolved solids (FDS; minerals) because the organic dissolved solids are not relevant to residual salinity in groundwater.	The scope of this SSALTS technical memorandum was to review readily available information and reports. Absent additional information, the text has not been changed.
1.3	48	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Regarding Table 5-2: This is too restrictive for most crops, 1,000 – 1,100 may be more reasonable for most crops in most areas.	The information was cited from a Regional Board publication and addresses sensitive crops. A footnote has been added, "More salt-tolerant crops can utilize irrigation waters with ECs greater than 1000 □m Irrigation Water Salinity and Crop Production. Agriculture and Natural Resources Publication 8066)." □m
1.3	49	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Regarding Table 5-3: How does this compare to the total annual salt load for the Valley? It is important to put this into context.	The following footnote was added to Table 5-3, "The 2005 annual salt loading estimate for food processors accounted for 2.08% in the Sacramento Basin, 4.01% in the San Joaquin Basin, and 3.17% in the Tulare Basin (Howitt et al., 2008)."

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1.3	50	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Why single out wineries and tomato processing for detailed discussion? What about nuts, dairy, meat and other large contributors as mentioned in Section 5.4?	Fruit and vegetable canning was the largest discharger of salt in the Central Valley based on the survey conducted by HCC (2007) of 160 Central Valley food-processing facilities. Wineries are an industrial sector that has been proactive regarding salt management. These two industrial sectors were chosen to be proxies for the food processing industry, in reviewing source control measures, treatment and disposal options.
1.3	51	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Regarding the sentence "'Stabilization of wines following clarification can be accomplished through an ion exchange process.': Very few wineries even do this. It makes it sound like all wineries. Maybe, Wine Institute has data on how frequent. Our clients don't seem to do much. Wine ion exchange is a focus of this paragraph without any data to support the discussion.	The text has been revised to cite the source of this information as follows: "As described in the HCC (2007), stabilization of wines following clarification can be accomplished through an ion exchange process."
1.3	52	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Providing data from only one plant is not very helpful and could be misleading.	The scope of this SSALTS technical memorandum was to review readily available information and reports. Absent additional information, the text has not been changed.
1.3	53	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Regarding Table 5-6: Where are the benefits? Should be compared with losses in \$/kgal.	The scope of this SSALTS technical memorandum was to review readily available information and reports. Absent additional information, the text has not been changed
1.3	54	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	Regarding "Regulatory Barriers": Might be good to note the limited regulatory resources to timely review regulatory submittals and applications to help dischargers manage salt loads.	Commented noted. At this time, there was no revision to this text as there is no source to cite regarding timely reviews by the Regional Board.
1.3	55	06/14/13	Rob Neenan (CLFP)	Study Area Characterization	All in all, this document seems to be out of date – the significant references data [sic] from 2007 and earlier.	The scope of this SSALTS technical memorandum was to review readily available information and reports. Absent additional information, the text has not been changed.
1.3	48	04/26/13	Jeanne Chilcott (CVRWQCB)	Study Area Characterization	<p>General: We've been struggling with all the case studies to try to understand how they will provide a basis for determining "where to put the salt". It may be that we're jumping ahead in the project, so we went back to the original scope (attached) and looked at Task 1.3. The Task (paraphrased) is to take a "study area" and identify current salt issues, practices dealing with the issue, regulatory activities and overall sustainability(sustainability is Task 1.4). Many of the case studies seem to have narrowed that focus (e.g. Tulare Lake Bed). Some of the chosen study areas are actually specific discharges (e.g. Hilmar Cheese) so the narrow focus is understandable. However, we're concerned that overall, none of the reviews really leave the reader understanding the magnitude of the issue. In the long run, we would hope that there will be a process that can screen the studies and categorize them as follows with specific reasons cited.</p> <ul style="list-style-type: none"> • helps with local salt problems, but has secondary adverse impacts to receiving waters • just making the water quality problem worse and changes are needed asap • suitable for short-term management pending development of additional regional storage/disposal/offset methods. • expected to be sustainable over the long term (200+ years). 	This comment was taken into consideration throughout development and revisions of the Study Areas Sections as well as the development of Section 12 which looks at the long-term sustainability of the study areas.

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1.3	49	04/26/13	Jeanne Chilcott (CVRWQCB)	Study Area Characterization	<p>Stevinson Water District: The discussion focuses on the piping of supply lines for agriculture and development of expanded holding facilities to reduce seepage to groundwater and time releases of flow to the San Joaquin River, respectively. But, none of those activities are controlling salt load to the area. Plus, although dairies are mentioned as the primary industry, there is no mention of the additional loading from that industry. The reality is that the district will continue to utilize its water rights for Merced River water and reduce groundwater pumping that had augmented the supply water. (Why pay to pump poorer quality water?) So, I'm not seeing where the ultimate salt load to poor quality perched groundwater is decreasing—unless you're assuming that the pumping was redistributing salt from the confined aquifer to the perched aquifer and now better quality water is being utilized. Surface flow loading is also not decreasing—just being retimed (unless the above assumption about the confined aquifer higher salinity loads being assumed removed hold true). They are removing salt from the area by releasing loads to the river—but as the report notes, it is unclear whether their system release as much as it gains. (By the way, please do not use the phrase that they are utilizing "assimilative capacity" within the river when it appears that they are just holding the water until there are flows in the LSJR. At this time, there is no management program in place on the river to coordinate releases from water agencies that have the capacity to time their discharges.)</p> <p>While the district clearly has salt issues, it is unclear what CV-SALTS has to learn from this case study. Has the piping of the supply lines produced any noticeable improvements of any kind? Have the expanded holding facilities had the anticipated impact on the movement of groundwater from the west, as expected? Again, we may be jumping ahead in the project, but these are overarching questions that must be addressed.</p>	<p>CDM Smith agrees with this comment. This study area was added at the recommendation of the CV-SALTS TAC. Clarification was added in Section 8.2 stating that the study area is primarily a water management program with a small component of salt source control (replacement of earthen ditches with pipeline to reduce seepage to the groundwater).</p>
1.3	50	04/26/13	Jeanne Chilcott (CVRWQCB)	Study Area Characterization	<p>Industrial Food Processing: Industrial Food Processing: This section was very difficult to review and I would strongly suggest that Rob Neenan look at the document. The document touches on a huge issue with a very broad brush, and does not fully flesh out the significant problem: these are very site specific issues and 90% of the evaluated processing facilities appear to have groundwater impacts. These are end of pipe discharges. In theory, these type of discharges are controllable—but at what cost? There is almost certainty that if the facilities were required to go to the extent that Hilmar had to, industries would move out of state and large sectors of agriculture would be stranded and unsustainable. Salt Capacity notes that the sites need individual review, but then lumps them together to talk about potential for a 50% reduction. Since these are site specific issues, that type of lumping (reducing by 30,000 metric tons annually) really has no context on whether that reduction really means anything. The sustainability review will be critical, but will be difficult to conduct with such diverse issues over a broad scale. You may want to focus on one area with a diversity of processors for the more detailed review.</p> <p>11.3.4: Potential groundwater pollution is regulated by the Regional Boards. > > 11.4: Is the ICM using FDS and if not should it be? > > Table 11-3: Did the report state the number of each of the types of facilities (for perspective)? > > 11.5.4: The process described appears to be moving salt, not reducing it. > > 11.7: Specific site conditions need to include groundwater quality and rate of lateral movement. > > 11.8: This is the section that should be expanded to include the increasingly stringent regulatory requirements as more and more of the facilities are demonstrating impacts to local groundwater (or do you cover that in sustainability?)</p>	<p>General: Rob Neenan has taken a look at the Section and has provided his comments.</p> <p>11.3.4: (Now 5.3.4) This was corrected 11.4: (Now 5.4) CDM Smith is unsure what exactly the ICM is using Table 11-3: (Now Table 5-3) Unfortunately no, the HCC SEP did not provide this information 11.5.4: This section has been removed 11.7: (Now 5.7) This has been added. 11.8: (Now 5.8) This discussion will be described in Section 12 of the Phase 1 report.</p>

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1.3	51	04/26/13	Jeanne Chilcott (CVRWQCB)	Study Area Characterization	<p>Tulare Lake: As stated above, this section highlights where the report appears to veer away from original scope of reviewing the activities within an area to focusing on one component. The Tulare Lakebed is intensively farmed. In order to maintain the high production agriculture, freshwater is imported and tile lines lower the shallow groundwater. The tile water must be moved offsite and has a myriad of issues including excess salt. To maintain ag, the tile water is moved to evaporation basins. There has been significant regulatory oversight of those basin's since the 1980's—none of which is discussed in the current report. It is the need for expansion of those facilities and the required update of existing WDRs that spurred TLDD to initiate the process to dedesignate (not de-list) MUN. The ILRP regulations came later. The focus of the study appears to be on the MUN dedesignation as the solution which does not address potential construction/management of evaporation ponds as a viable salt storage option.</p> <p>Specific comments:</p> <ul style="list-style-type: none"> > 1) Overall comment – section 9.8 first sentence replace “delisting” with “dedesignation” here and anywhere else it appears after the first reference in section 9.5. > 2) Page 3 table 9-1—note that MCL is for consumer acceptance levels. > 3) Page 3 paragraph 1 seems to imply evaporation basins should not be utilized. However, one of the reasons TLDD is pursuing MUN dedesignation is to construct additional evap ponds. > 4) Page 3 paragraph 2 sentence one, recommend saying that the salinity “likely” makes this water unusable for ag. We’re evaluating whether it should be dedesignated now. > 5) Section 9.3.4 This section does not appear to have done the evaluation described in Step 3 starting on page 2-6 of the Workplan (see attached). Particularly not reviewing TLDD WDRs for existing ponds. > Section 9.8: The section leaves the impression that regulation of salt is the regulatory barrier. This comment relates back to the fact that this whole write-up appears focused on the MUN dedesignation as the project--no evaporation ponds or other management alternatives. 	<p>General: An additional Section (9.5.2) was added to the Study Area describing the construction of additional evaporation basins that would occur if the de-designation were to be completed.</p> <ul style="list-style-type: none"> 1) This substitution was made. 2) The change was made. 3) A sentence was added to the last paragraph of Section 9.2 to address this comment. 4) This change was made. 5) Information on Order 93-136 for the TLDD's three Evaporation Basins was added to Section 9.3.4. <p>Section 9.8: Minor changes were made to indicate that the MUN beneficial use is the regulatory barrier to the ultimate goal of the construction of additional evaporation ponds.</p>