# Responsiveness Summary – Site-Specific Ammonia Objectives
# Comment Due Date: May 14, 2007

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| 1. City of Burbank, Public Works Department (Burbank) |
| 2. County Sanitation Districts of Los Angeles County (LACSD) |
| 3. City of Los Angeles, Bureau of Sanitation (LA) |
| 4. Heal the Bay (HTB) |

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| 1.1 | Burbank | 5-08-07 | We fully support the amendment with one minor change and recommend the adoption of the Ammonia SSOs at the June Regional Water Board hearing. | Comment acknowledged. |
| 1.2 | Burbank | 5-08-07 | Although we support monitoring to ensure that the SSOs continue to be appropriate for the watersheds we have concerns with some of the language in the BPA. POTWs currently regularly monitor many constituents that impact the toxicity of ammonia. As a result, we suggest that the language should be revised to reflect the ongoing relevant monitoring and that any additional monitoring should be included and coordinated with existing NPDES permit monitoring. | Regional Board staff agrees that monitoring to ensure that the site-specific objectives (SSOs) continue to be appropriate should be coordinated with ongoing relevant monitoring by the Publicly-owned Treatment Works (POTWs). Regional Board staff have revised the Basin Plan amendment (BPA) language to be more clear that additional monitoring may be required, where deemed necessary by the Regional Board. |
| 1.3 | Burbank | 5-08-07 | Toxicity could be caused by constituents other than ammonia that are present in the waterbody. The current BPA language suggests that the ammonia SSOs could be reevaluated if toxicity is observed even if the toxicity was not caused by ammonia. We request that this language be modified as well. | Regional Board staff concurs. The BPA language has been revised to be clear that the SSOs may be reevaluated if toxicity due to ammonia is observed. |
| 1.4 | Burbank | 5-08-07 | Suggested language to address both issues is | See responses 1.2 and 1.3 and the Revised |

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| | | | presented below.<br><br>Receiving water monitoring may be required of dischargers subject to SSOs to ensure that the SSOs are as protective of beneficial uses as the regional objectives are intended to be. This monitoring shall be required through the discharger's NPDES permit monitoring and reporting program. If monitoring required by NPDES permits indicates toxicity due to ammonia below the SSOs or a change in the waterbody that could impact the calculation of the SSOs, including either its chemical characteristics or the aquatic species present, the Regional Board may reconsider the SSOs. | Proposed BPA. The Regional Board has not included the caveat "below the SSOs", since a key reason for monitoring is to confirm that the SSOs, as adopted, are protective. |
| 1.5 | Burbank | 5-08-07 | We would request that the additional monitoring requirements discussed in the Tentative Resolution on page 4 also be revised to provide coordination with the NPDES permits. Suggested revisions are shown below.<br><br>The Regional Board directs staff to propose, as staff deems appropriate, additional monitoring and reporting requirements in subsequent Board actions for dischargers discharging to the affected waterbody reaches within the Santa Clara, Los Angeles, and San Gabriel River watersheds. These additional monitoring and reporting requirements may be necessary to (1) evaluate whether the site-specific objectives are as protective of beneficial uses as the regional | Resolution 3 of the Tentative Resolution has been revised, consistent with the suggestion. See Revised Tentative Resolution. |

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| | | | objectives are intended to be, (2) ensure that downstream objectives are being achieved, and (3) support the Board's reconsideration of the site-specific objectives during the triennial review process. To the extent possible, proposed monitoring and reporting requirements should be coordinated with any Executive Officer approved TMDL Monitoring Plan and/or NPDES permit monitoring and reporting program, if available. | |
| 1.6 | Burbank | 5-08-07 | On page 13, an incorrect TAC member is listed. David Hansen should be replaced by Steve Bay from SCCWRP. | The Staff Report has been revised. |
| 1.7 | Burbank | 5-08-07 | Figure 5 on page 20 should be replaced with a site that has the ELS present designation during a portion of the year. LA1, in Los Angeles Reach 4, is ELS absent year round. | The data from LA1 apply to both Reaches 4 and 5 of the Los Angeles River. Reach 5 of the Los Angeles River is designated as ELS Present from April through September. See Table 5 of Staff Report. |
| 1.8 | Burbank | 5-08-07 | Table 8 on page 27 combines Los Angeles River Reach 4 and 5 into one row.<br><br>We request that Table 8 be revised to separate Reach 4 and 5 and only include example objectives for ELS absent for those reaches that are designated as ELS absent year round | Table 8 of the Staff Report has been revised as suggested. |
| 1.9 | Burbank | 5-08-07 | On page 30, we suggest the paragraph discussing nitrification/denitrification be revised, as follows for clarity:<br><br>The need for N/DN was prompted by the | A section has been added to the Revised Staff Report to discuss the need for the SSOs even when POTWs are operating under N/DN. See Revised Staff Report, section VIII.B. |

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| | | | requirements of the 1994 Basin Plan ammonia objectives. N/DN is capable of reducing ammonia to approximately 1.0-2.0 mg/L total ammonia as N. However, ammonia must be added back into the treatment system to reduce the formation of THMs during chlorination. | |
| 1.10 | Burbank | 5-08-07 | On page 31 at the bottom of the page, there appears to be a missing reference to the RWQCB's website. | The web address has been added to the Staff Report. |
| 1.11 | Burbank | 5-08-07 | The comments on page 33 and 34 should be deleted. | The comments have been deleted. |
| 1.12 | Burbank | 5-08-07 | Table 4 shows a large range of temperatures and pHs that do not typically occur in Los Angeles County waterbodies. We suggest that Table 4 be revised to just include temperatures and pHs typically found in the waterbodies by eliminating the column for pH 6.0 and the row for 5 C. | The Regional Board determined that the average temperature in all waterbodies in the Los Angeles Region is 19.14 degrees Celsius (based on data used in the 2002 303(d) List submittal). Ninety-five percent of all data falls between 10.92 and 27.35 degrees Celsius. Table 4 has been revised to show temperature conditions typical of the Los Angeles Region. Also, Table 4 has been revised to be consistent with the pH range shown in the Basin Plan for the regional 30-day average ammonia objectives (i.e. pH 6.5 to 9.0). |
| 2.1 | LACSD | 5-10-07 | The Districts fully support the proposed amendment and recommend the adoption of the ammonia SSOs Basin Plan Amendment (BPA) at the June 2007 Regional Board hearing. | Comment acknowledged. |

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| 2.2 | LACSD | 5-10-07 | Although we support monitoring to ensure that the SSOs continue to be appropriate for the watersheds we have concerns with some of the language in the proposed BPA.<br><br>Given the vast amount and comprehensive nature of monitoring currently being performed by the Districts in support of NPDES permits for the various WRPs, the requirement for additional monitoring seems unwarranted. In addition, the BPA will put the onus on the Regional Board permit writer to decide what additional monitoring is appropriate. The Districts suggest the provision be changed to read:<br><br>"Additional receiving water monitoring may ~~shall~~ be required of dischargers subject to SSOs to ensure that the SSOs are as protective of beneficial uses as the regional objectives are intended to be. This ~~additional~~ monitoring shall be required through the discharger's NPDES permit monitoring and reporting program ~~or other Board required monitoring programs~~. If ~~additional~~ monitoring *required by NPDES permits* indicates toxicity | See responses 1.2, 1.3 and 1.4. While setting monitoring requirements for discharge permits is generally under the purview of the Regional Board's permitting staff, Basin Planning staff will work with permitting staff to recommend appropriate monitoring requirements that will support an assessment of (1) whether the SSOs are as protective of beneficial uses as the regional objectives are intended to be and (2) whether downstream standards are being achieved. |

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| | | | *due to ammonia at concentrations below the SSOs or a change in the waterbody that could impact the calculation of the SSOs,* including either its chemical characteristics or the aquatic species present, the Regional Board may reconsider the SSOs." | |
| 2.3 | LACSD | 5-10-07 | Likewise, the Districts recommend that the additional monitoring requirements discussed in Resolution #3 of the Tentative Resolution be revised to provide coordination with the NPDES permits. The Districts suggest the language be revised as follows:<br><br>(last sentence) "To the extent possible, proposed monitoring and reporting requirements should be coordinated with any Executive Officer approved TMDL Monitoring Plan *and/or NPDES permit monitoring and reporting program,* if available." | See response 1.5 |
| 2.4 | LACSD | 5-10-07 | On Finding #15 of the Tentative Resolution, the Districts recommend the following change for clarification purposes:<br><br>(about 2/3 into Item #15) "The regional one-hour average objective will remain the applicable *one-hour* objectives for all freshwaters ..." | Finding 15 of the Tentative Resolution has been revised. |
| 2.5 | LACSD | 5-10-07 | The Districts want to point out to the Regional | The Regional Board has included a reference |

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| | | | Board that USEPA issued a new guidance that determined the appropriate allowable exceedance frequency based specifically on ammonia toxicity.<br><br>The Districts request that the Regional Board reference this guidance in its Staff Report and recommend its allowable exceedance frequency for ammonia. | to the draft US EPA guidance, "Modeling Framework Applied to Establishing an Allowable Frequency of Exceeding Aquatic Life Criteria" (December 2005, in draft), in the Revised Staff Report, section V.A. However, the guidance is still in draft form. When finalized, Regional Board staff will consider its application in the Los Angeles Region. |
| 2.6 | LACSD | 5-10-07 | There are separate SSOs for San Jose Creek and San Gabriel River Reaches 2 and 3. The Districts own, and operate one WRP, the San Jose Creek WRP, that discharges to both waterbodies. For ease of operating, reporting and compliance tracking, the Districts request that the applicable San Gabriel River SSO description be changed to "San Gabriel River, Reaches 2 and 3 (including all San Jose Creek WRP discharges)" so that all three discharges would be covered by one SSO. | Regional Board staff agrees that for the existing San Jose Creek WRP discharge point on San Jose Creek, it is appropriate to use the SSO for San Gabriel River Reaches 2 and 3. The San Gabriel River Reaches 2 and 3 SSO was developed with receiving water samples influenced by all three San Jose Creek WRP discharges, while the San Jose Creek SSO was developed only with receiving water samples influenced by the upstream Pomona WRP. Furthermore, both San Gabriel River Reaches 2 and 3 and San Jose Creek are considered ELS Present from April to September. The BPA and Staff Report have been revised. |
| 3.1 | LA | 5-14-07 | The Bureau supports the amendment and the adoption of the Ammonia SSOs at the June Regional Water Board hearing. | Comment acknowledged. |
| 3.2 | LA | 5-14-07 | Although the Bureau supports monitoring to ensure that the SSOs continue to be appropriate | See responses 1.2 and 1.4. |

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| | | | for the watersheds, we have concerns with some of the language in the BPA. Currently, POTWs regularly monitor many constituents that impact the toxicity of ammonia, and ammonia.<br><br>As a result, we suggest that the language be revised to reflect the ongoing relevant monitoring and that any additional monitoring should be included and coordinated with existing NPDES permit monitoring. | |
| 3.3 | LA | 5-14-07 | Toxicity could be caused by constituents other than ammonia that are present in the waterbody. The current BPA language suggests that the ammonia SSOs could be reevaluated if toxicity is observed, even if the toxicity was not caused by ammonia. The Bureau requests that this language be modified as well. | See responses 1.3 and 1.4. |
| 3.4 | LA | 5-14-07 | Suggested language to address both issues is presented below.<br><br>"~~Additional~~ R~~r~~eceiving water monitoring ~~shall~~ may be required of dischargers subject to SSOs to ensure that the SSOs are as protective of beneficial uses as the regional objectives are intended to be. This ~~additional~~ monitoring shall be required through the discharger's NPDES permit monitoring and reporting program ~~or other Board required monitoring programs~~. If ~~additional~~ monitoring required by NPDES permits indicates toxicity due to ammonia below | See responses 1.2 and 1.3 and the Revised Proposed BPA. |

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| | | | the SSOs or a change in the waterbody that could impact the calculation of the SSOs ~~toxicity,~~ including either its chemical characteristics or the aquatic species present, the Regional Board May reconsider the SSOs." | |
| 3.5 | LA | 5-14-07 | The Bureau would request that the additional monitoring requirements discussed in the Tentative Resolution on page 4 also be revised to provide coordination with the NPDES permits. Suggested revisions are shown below:<br><br>"The Regional Board directs staff to propose, as staff deems appropriate, additional monitoring and reporting requirements in subsequent Board actions for dischargers discharging to the affected waterbody reaches within the Santa Clara, Los Angeles, and San Gabriel River watersheds These additional monitoring and reporting requirements may be necessary to (1) evaluate whether the site-specific objectives are as protective of beneficial uses as the regional objectives are intended to be (2) ensure that downstream objectives are being achieved, and (3) support the Board's reconsideration of the site specific | See response 1.5. |

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| | | | objectives during the triennial review process. To the extent possible, proposed monitoring and reporting requirements should be coordinated with any Executive Officer approved TMDL Monitoring Plan and/or NPDES permit monitoring and reporting program, if available." | |
| 3.6 | LA | 5-14-07 | On page 13, an incorrect TAC member is listed. David Hansen should be replaced by Steve Bay from SCCWRP. | See response 1.6 |
| 3.7 | LA | 5-14-07 | Figure 5 on page 20 should be replace with a site that has the ELS present designation during a portion of the year. LA2, in Los Angeles Reach 4, is ELS absent year round. | See response 1.7 |
| 3.8 | LA | 5-14-07 | Table 8 on page 27 combines Los Angeles River Reach 4 and 5 into one row. The combination results in the appearance that Reach 4 is ELS present part of the year when other sections of the document clearly show that Reach 4 is ELS absent year round. We request that Table 8 be revised to separate Reach 4 and 5 and only include example objectives for ELS absent for those reaches that are designated as ELS absent year round (Los Angeles River Reach 4, Burbank Western Channel, San Gabriel River Reach 1, and Coyote Creek). | See response 1.8 |

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| 3.9 | LA | 5-14-07 | On page 30, we suggest the paragraph discussing nitrification/denitrification be revised as follows for clarity:<br><br>"The need for N/DN was prompted by the requirements of the 1994 Basin Plan ammonia objectives. N/DN is capable of ~~eliminating~~ reducing ammonia to approximately 1.0-2.0 mg total ammonia as N/1. However, ammonia must be added back into the treatment system to reduce the formation of THMs during chlorination." | See response 1.9 |
| 3.10 | LA | 5-14-07 | On page 31 at the bottom of the page, there appears to be a missing reference to the RWQCB's website. | See response 1.10 |
| 3.11 | LA | 5-14-07 | The comments on page 33 and 34 should be deleted. | See response 1.11 |
| 3.12 | LA | 5-14-07 | Table 4 shows a large range of temperatures and pHs that do not typically occur in Los Angeles County waterbodies. We suggest that Table 4 be revised to just include temperatures and pHs typically found in the waterbodies by eliminating the column for pH 6.0 and the row for 5 C. | See response 1.12 |
| 3.13 | LA | 5-14-07 | The Bureau request clarification on how the revised ammonia objectives will be included in the NPDES Permits for Los Angeles-Glendale and Donald C. Tillman water Reclamation Plants. The ammonia compliance schedules provided in the Bureau's permits are based on | The Board may reconsider a TMDL at any time. Staff will work with the Board to identify a schedule for bringing the LA River Nitrogen TMDL before the Board to incorporate the SSOs and, subsequently, to evaluate timeframes for reopening the |

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| | | | Nitrogen TMDL's Implementation Schedule, which expires in September of 2007. Although the Bureau's NDN facilities will be up and running by September 2007, there is still a critical need for the Nitrogen TMDL's Ammonia Waste Load Allocations (WLAs) to be revised based on the Ammonia SSO results and incorporated into the Bureau's NPDES permits. The inclusion of the revised Ammonia WLAs in our permits will provide the Bureau and others with the operational flexibility required in the disinfection process. | permits to incorporate the SSOs and revised WLAs. The City of LA may request an enforcement order, such as a time schedule order, until the TMDL is reconsidered to incorporate the SSOs. |
| 4.1 | HTB | 5-14-07 | Many discharges to these waters have had or continue to have toxicity problems that may be due to ammonia concentrations. These toxicity issues should be addressed by the Regional Board before less stringent requirements are considered. | Three of the eleven subject waterbodies are on US EPA's proposed 2006 303(d) list for California because of toxicity concerns; these include Santa Clara River Reach 6, Coyote Creek, and San Jose Creek. These three reaches all receive discharges from POTWs that are operating with N/DN.<br><br>Both the Santa Clara River Reach 6 and Coyote Creek are also listed for at least one OP-pesticide, which have been shown to cause toxicity in receiving water. In terms of these specific reaches, the County Sanitation Districts have conducted TIEs as required by their NPDES permits for the nearby POTWs. Due to the lack of persistent toxicity in Reach 6 of the Santa Clara River, no TIEs have been conducted on samples from this reach since the implementation of N/DN. Significant |

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| | | | | toxicity was observed in Coyote Creek upstream of the Long Beach Water Reclamation Plant during a recent 18-month collaborative toxicity study with SCCWRP. TIEs conducted on these samples indicated a non-polar organic and/or surfactant as the cause of toxicity. The proposed listing for San Jose Creek is based on recently conducted NPDES toxicity tests. Toxicity within this reach has not been persistent enough to trigger extensive TIE testing, but diazinon was indicated as the cause of toxicity in the one TIE conducted (Monthly NPDES report for Pomona Water Reclamation Plant, January 2006). None of the observed toxicity has been linked with the low ambient levels of ammonia in these receiving waters.<br><br>None of these waters are listed as impaired for ammonia on US EPA's proposed 2006 303(d) List. Those that were previously listed have been moved to the "List of Water Quality Segments Being Addressed by USEPA Approved TMDLs" (i.e. LA River Reaches 3, 4, and 5) or the "List of Water Quality Segments Being Addressed by Action Other than TMDLs" (e.g. Coyote Creek and San Jose Creek). |

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| | | | | Furthermore, eight of the 10 POTWs discharging to these waterbodies are operating under N/DN. The N/DN at these facilities is generally capable of removing all or almost all of the ammonia before it is discharged from the POTWs into the receiving water. The addition of N/DN has resulted in substantial reductions in effluent concentrations of ammonia and, consequently, in concentrations in local receiving waters. Table 7 in the Revised Staff Report has been updated to include average post-N/DN concentrations of ammonia in the waterbodies that would be covered by the SSOs. According to the City of Los Angeles, the remaining two POTWs (LAG and DCT) will be operating under N/DN by September 2007.<br><br>Finally, while the SSOs are in most cases less stringent than the regional 30-day average objectives, the SSOs are not a "relaxing" of the objective. The SSOs are derived to afford the same level of protection to aquatic life as the established regional objective and do not permit any more toxicity than the regional objective. |
| 4.2 | HTB | 5-14-07 | According to the Staff Report, field sampling took place between January 2002 and February | The sampling conducted met, and in many cases exceeded, the requirements of US |

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| | | | 2003. Specifically, one wet weather and three dry weather samples were collected at ten locations throughout the three watersheds during this period. This limited number of samples is insufficient to develop an appropriate SSO. | EPA's 1994 Interim Guidance on Determination and Use of Water-Effect Ratios (US EPA 1994). In its 1999 Update of Ambient Water Quality Criteria for Ammonia, the US EPA recommends the procedures of the 1994 Interim Guidance for determining WERs to derive SSOs for ammonia (US EPA 1999). The 1994 Interim Guidance recommends using data from three distinctly separate sampling events with one of the events during a higher flow period. See Staff Report, Appendix 2, p. 5.<br><br>Furthermore, the Regional Board has incorporated into the Basin Plan amendment requirements for additional monitoring, where necessary, to ensure that (1) the SSOs are as protective of beneficial uses as intended by the regional objective and (2) downstream standards are achieved. |
| 4.3 | HTB | 5-14-07 | The Draft SSO did not identify critical conditions. | Samples were collected during the WER Study under both low flow and higher flow periods to determine critical conditions, as recommended by US EPA's 1994 Interim Guidance. Based on direction from the TAC, samples were also collected during dry season dry weather and wet season dry weather to determine whether there were any seasonal differences in dry weather results |

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| | | | | that would suggest a critical period within dry weather. A technical memorandum to the TAC for the study examined the *H. azteca* and water chemistry data for dry weather during the dry and wet seasons and did not show any clear differences between dry weather results for the two seasons. Slight differences appear to exist between dry weather and wet weather results; in particular, during high-flow events there was less observed toxicity and, thus, larger WERs. In the calculation of the final WERs only the lower, more environmentally conservative, dry weather WERs were used. |
| 4.4 | HTB | 5-14-07 | A one-year collection period with so few samples will not capture variability in these very large systems. Existing data show that there is considerable variability in these waterbodies. For instance, Table 8 in the September 2003 Final Results Report shows hardness values ranging from 132-432 mg/1 and TDS values ranging from 471-907 mg/1 at the Tillman location. The Staff Report comments that hardness and concentrations of certain ions can change the ammonia toxicity. Staff Report at 4. Also, there is considerable variability in rainfall that will impact the toxicity of ammonia. For example the second season of sampling (2003-2004) was a very dry year with only 9.2" of rainfall. Dry years may lead to higher temperatures that would change the toxicity of ammonia. Thus the | The data collected during the study were compared to historical data for the period 1996-2000. The results were almost all within the range reflective of these historical conditions (see Table 8 in Appendix 2 of the Staff Report). The overall ion composition (TDS) has the strongest impact on toxicity. (See Data Analysis Section of Appendix 2.) Both TDS and conductivity are in the range of historical values. As for fluctuations in temperature, temperature along with pH are variables in the SSO equations, therefore, variability in these parameters is captured when calculating the SSO for a particular location and time. The sampling conducted |

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| | | | toxicity of ammonia will fluctuate throughout the year and in different years, and the limited number of samples collected may not represent "critical" conditions. Why has additional sampling not occurred in the last 4-5 years? | followed US EPA's 1994 Interim Guidance and was consistent with the Ammonia SSO work plan, which was reviewed by the TAC and approved by the Regional Board's Executive Officer. |
| 4.5 | HTB | 5-14-07 | Further, the sample size was reduced significantly in the QA/QC process. Ten site water sample results of forty were rejected via QA/QC protocol. This is a very high percentage of rejected samples – 25%. Again, the limited number of samples did not capture variability between years and between seasons: a necessary requirement for determining SSOs. | For the primary test (i.e. *H. azteca* acute test), only 4 out of 40 tests (10%) were rejected for QA/QC reasons. The majority of rejected tests (11) were for fathead minnow. However, as discussed in the Staff Report, the fish GMCV (Genus Mean Chronic Value) was not multiplied by the fWER, since the fWERs for fathead minnow were close to 1.0, indicating that the chronic toxicity did not differ significantly from that observed in the national data set. None of the *H. azteca* acute tests run under wet weather conditions were rejected. See Staff Report Appendix 2, Table 2. Additional sampling was built into the work plan to ensure that if there were QA/QC problems with some of the tests, the study would still meet or exceed the recommended number of sampling events outlined in US EPA's 1994 Interim Guidance. See also responses 4.3 and 4.4. |
| 4.6 | HTB | 5-14-07 | Also the Draft SSO does not identify the critical conditions that would lead to the greatest ammonia toxicity. Southern California is a place of extremes, and this variability must be considered. The study design must be modified | See responses 4.2, 4.3 and 4.4. The Regional Board has incorporated into the Basin Plan amendment requirements for additional monitoring, where necessary, to ensure that |

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| | | | to account for variability in water quality and rainfall conditions. Ideally, a minimum of four sampling events (2 wet and 2 dry) per year over five years are needed to develop a SSO that accurately reflects site-specific conditions. | (1) the SSOs are as protective of beneficial uses as intended by the regional objective and (2) downstream standards are achieved. If the data show toxicity due to ammonia or a change in the waterbody that could impact the calculation or application of the SSOs, including either its chemical characteristics or the aquatic species present, including early life stages of fish, the Regional Board has the authority to reconsider the SSOs at any time. |
| 4.7 | HTB | 5-14-07 | The Draft SSO allows for the Regional Board to designate a waterbody as "ELS Absent" if "...staff concludes that physical conditions and, specifically, hydromodifications of the waterbody preclude the presence of early life stages of fish in significant numbers." Draft SSO at 20. This characterization process appears very arbitrary. Also, this approach may have negative side effects, as an ELS absent designation may hinder habitat restoration efforts and dissuade dischargers from undertaking future restoration efforts: a disappointing outcome in light of potential restoration efforts for the LA River; San Gabriel River, and Compton Creek. | First, the Regional Board strongly supports restoration and naturalization efforts in the Region's waterbodies. The proposed amendment is not intended in any way to discourage these efforts. The approach to identifying where early life stages of fish (ELS) are present was developed through a previous Basin Plan amendment, and was adopted unanimously by the Board in December 2005 (Regional Board Resolution 2005-014). The adopted amendment language states<br>"If recent data and information are submitted to the Regional Board that provide substantial evidence that the physical conditions of a water body listed in Table 3-X have changed due to restoration efforts such that there is habitat suitable for Early |

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| | | | | Life Stages of fish and one or more fish species that reproduce below 15 degrees Celsius is known to be present, in that or the adjacent water bodies, the Regional Board shall reconsider this implementation provision to ensure protection of Early Life Stages of fish in the water body."<br><br>Second, the approach for identifying where ELS are present was not arbitrary. Regional Board staff along with ELS TAC members evaluated various implementation approaches to protect ELS.<br><br>Based on this evaluation and the TAC's recommendation, the Board chose to apply the "ELS Absent" objective in major water bodies known to not have fish species that reproduce below 15 degrees C or where physical conditions preclude reproduction and early development in <u>significant numbers</u>. This is consistent with the Federal Register Notice, which states<br><br>"the objective should be to best identify the timeframes during the year when sensitive life stages are |

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| | | | | most likely not to be present in numbers that, if chronic toxicity did occur, would affect the long-term success of the fish population." (Federal Register, Vol. 64, No. 245, December 22, 1999)<br><br>The Regional Board chose to apply the "ELS Present" objective in all other water bodies unless a site-specific study was conducted and approved through the Basin Plan amendment process.<br><br>The Staff Report for Regional Board Resolution 2005-014 describes how some physical characteristics of a water body can largely preclude a fish species from reproducing and developing in a river where the physical conditions have been largely modified. This description is based on a review of basic science regarding physical habitat requirements for successful fish reproduction and early development and the input of the TAC. River reaches that have bottoms (and sides) that are engineered with concrete lining, or otherwise engineered to limit or preclude in-stream vegetation or natural substrate do not provide suitable habitat for fish reproduction and early |

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| | | | | development. Fish require in-stream cover and appropriate substrate for reproduction and the nurturing and protection of early life stages.<br><br>Therefore, where obvious physical characteristics of the water body would preclude reproduction and early development in significant numbers, Regional Board staff concluded that these water bodies should be considered "ELS absent", even if the adult fish of these species are present. Regional Board staff with intimate knowledge of these water bodies made an assessment of these limiting physical characteristics. The assessment results are contained in Appendix C to the Staff Report for Regional Board Resolution 2005-014.<br><br>In addition to their intimate knowledge of these water bodies, Regional Board staff were guided by several criteria when assessing the potential for physical characteristics to limit the ability of fish to successfully reproduce and develop in a water body. These criteria included:<br>1) Does the waterbody segment have concrete lined bottom or sides?<br>2) Is the waterbody segment in the |

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| | | | | middle or lower part of its watershed?<br>3) Is the waterbody non-contiguous with an earthen bottom tributary?<br><br>Engineered channels, meeting these criteria, will not allow successful fish reproduction and early development in significant numbers due to the limited to non-existent aquatic habitat necessary for reproduction and early development.<br><br>For the SSOs, Board staff continued to apply the previous BPA to those waterbodies with obvious physical characteristics that limit reproduction and early development of fish. For the SSO waterbodies not identified as "ELS Absent" due to physical constraints, Board staff used a more precise method of identifying all fish species present in the waterbody and assigning a reproductive period (i.e. ELS Present) to the waterbody, rather than simply identifying those fish that reproduce at temperatures less than 15 C. |
| 4.8 | HTB | 5-14-07 | The Regional Board's mission is to "preserve and enhance water quality in the Los Angeles Region for the benefit of present and future generations." Making a presumption that a set of water bodies is "ELS Absent" may compromise this objective. The goal of watershed restoration is to improve current conditions by restoring | See response 4.7.<br><br>A SSO is not a "relaxing" of the objective. A SSO permits no greater toxicity than the established national criteria. US EPA states in its 1994 Interim Guidance that, "A site- |

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| | | | degraded habitat and providing long-term protection for aquatic and riparian resources.<br><br>Relaxing ammonia objectives will counter this goal, which subsequently may make it more difficult to restore impaired water bodies and for fish to recolonize the restored habitat.<br><br>Also, a designation of "ELS Absent" may discourage dischargers from undertaking future restoration efforts as objectives would possibly become more stringent. We thus encourage the Regional Board to seriously consider possible restoration activities and goals for these waterbodies before designating an area as ELS Absent. | specific criterion is intended to come closer than the national criterion to providing the intended level of protection to the aquatic life at the site, usually by taking into account the biological and/or chemical conditions (i.e., the species composition and/or water quality characteristics) at the site." US EPA further states, "Also, derivation of a site-specific criterion does not change the intended level of protection of the aquatic life at the site. Because a WER is expected to appropriately take into account (a) the site-specific toxicity of the metal, and (b) synergism, antagonism, and additivity with other constituents of the site water, using a WER is more likely to provide the intended level of protection than not using a WER" (US EPA 1994, pp. 1-2). Finally, in its memo transmitting the 1994 Interim Guidance to States, US EPA concludes that, "site-specific criteria, properly determined, will fully protect existing uses" (US EPA 1994a, p. 3). |
| 4.9 | HTB | 5-14-07 | As stated in the Staff Report, the Los Angeles, San Gabriel, and Santa Clara Rivers provide habitat to sensitive species such as three threatened or endangered species - the unarmored threespine stickleback, Santa Ana sucker, and steelhead trout. It is paramount that the prescribed water quality objectives protect these sensitive species. | The WER methodology involves calculating preliminary SSOs and then comparing them with total ammonia sensitivities of any ecologically or commercially sensitive species present in the waterbody. For the waterbodies in this study, three species were identified that fit into this category: |

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| | | | | unarmored three-spine stickleback, Santa Ana sucker, and steelhead trout. The total ammonia sensitivities of these species (or other species within the same genus as these species) were higher than the range of site-specific Final Chronic Values, meaning that the SSOs are protective of these important species.<br><br>Furthermore, the above conclusion is moot given the approach taken in which only the invertebrate data are adjusted in the objective equation. As a result of this approach, these fish species should still be fully protected from ammonia toxicity. See also the final consultants' report in Appendix 2 and, specifically, the discussion on "Protection of Rare, Endangered, Threatened or Locally Important Species." |
| 4.10 | HTB | 5-14-07 | The Regional Board should adjust various non-conservative assumptions made in developing the Draft SSO. | The proposed SSOs are based on a number of conservative assumptions. These include:<br>1) The fish GMCV was not adjusted by the site-specific fWERs in the proposed equations for calculating the SSOs.<br>2) Acute WERs were used to adjust the 30-day average (i.e. chronic) objective. Acute tests are considered less sensitive tests and, therefore, result in lower WERs than the more sensitive chronic tests. (US EPA 1994) |

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| | | | | 3) The nationally derived pH relationship was used rather than the site-specific pH relationships developed during the WER Study. The use of the nationally derived pH relationship results in a more stringent SSO than the site-specific pH relationships.<br>4) The lower and thus more environmentally conservative dry weather WERs were used to calculate the fWERs. |
| 4.11 | HTB | 5-14-07 | The Draft SSO proposes ammonia objectives that are 1.5 to 2.3 times greater than the current 30-day average ammonia objectives. In calculating these objectives, the Staff Report states that "[t]he design of the calculation process... [will] determine a criterion value that will protect 95% of aquatic species." Draft SSO at 18. What about the 5% of species that are not protected? This approach is entirely inappropriate. Instead, the calculation should protect 100% of the species, especially the most sensitive species. | Protection of 95% of species is consistent with US EPA's "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their Uses" and the intended level of protection provided by US EPA's 304(a) recommended ambient water quality criteria (US EPA 1985). Additionally, the ammonia criteria and the SSOs are designed to protect the most sensitive species. The equation to calculate the 30-day average objective requires selection of the lower of the lowest Genus Mean Chronic Value for invertebrates or the lowest Genus Mean Chronic Value for fish. In its memo transmitting the 1994 Interim Guidance to States, US EPA states that, "site-specific criteria, properly determined, will fully protect existing uses" (US EPA 1994a, p. 3). See also responses 4.8 and 4.9. |

# Responsiveness Summary – Site-Specific Ammonia Objectives
# Comment Due Date: May 14, 2007

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| 4.12 | HTB | 5-14-07 | Also, the Draft SSO proposes an ELS Present period of April through September. This designation may not be protective of all species. During dry years such as the current drought year, there is limited stream disruption in perennial streams. Thus, reproduction may be viable all year long for certain species. The most conservative approach would be to eliminate the specific ELS Present period and provide for ELS Present all year long. At a minimum, the Regional Board should widen the ELS Present period to March to November, in order to protect reproduction periods for carp and arroyo chub. | The Regional Board defined a broad period for reproduction based on published literature. The ranges are intended to encompass the period during which breeding is occurring in significant numbers among the species identified for a particular waterbody. While some breeding may occur from February to August, arroyo chub breed primarily in June and July (Moyle 2002). Carp spawn from spring to early summer, with highest activity at 19-23 C (Moyle 2002). Additionally, carp are an introduced species, and are of questionable ecological value, since they are probably responsible for displacing or reducing populations of native fishes in some areas. |
| 4.13 | HTB | 5-14-07 | The Draft SSO states that "[t]he objective of this amendment is to adopt site-specific 30-day average objectives for ammonia in select waterbodies that will be as protective as the nationally derived 30-day average criterion, but not **over-protective** of aquatic life in these waterbodies." Draft SSO at 12 emphasis added. This stated objective is disconcerting. Being "over-protective" of aquatic life is favorable to the alternative of being under-protective. Thus the Regional Board should remove this statement from the Staff Report and should select conservative assumptions in developing the | The statement in the Staff Report has been reworded to more accurately reflect Staff's intent. See responses 4.10 and 4.11. |

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| | | | SSOs, in order to be protective of all species. | |
| 4.14 | HTB | 5-14-07 | The Draft SSO proposes revised, less stringent ammonia objectives for various reaches and tributaries of the Los Angeles, San Gabriel, and Santa Clara Rivers. This can be problematic if, for instance, an ELS absent reach is located upstream of an ELS present reach. Permitting relaxed ammonia objectives for upstream water bodies may result in increased ammonia concentrations in downstream waters. This is unacceptable.<br><br>Discharges upstream should not contribute to exceedances of downstream objectives. The Regional Board must make certain that regulatory actions to achieve applicable site-specific objectives ensure that downstream standards will also be achieved. | Regional Board regulations prohibit the violation of water quality objectives assigned to any waterbody segment. Therefore, if ammonia levels in downstream reaches violate water quality objectives, the party responsible for the exceedance will be held accountable.<br><br>This issue is addressed in the proposed BPA, which states, "Notwithstanding the provisions below, regulatory actions to achieve applicable site-specific objectives must ensure that downstream standards will also be achieved."<br><br>See also response 4.8. |
| 4.15 | HTB | 5-14-07 | The proposed SSOs for ammonia include variables for pH and temperature. Draft SSO at Table 6. These values will vary depending on the time of year and current conditions. The Regional Board should provide guidance on how these values should be generated so that an appropriate SSO is calculated and there is consistency throughout the region. | While calculating effluent and receiving water limits for discharge permits is under the purview of the Regional Board's permitting staff, Basin Planning staff will work with permitting staff to recommend an appropriate and consistent approach to selecting temperature and pH values to use in the calculations. |
| 4.16 | HTB | 5-14-07 | In sum, we believe that the Regional Board must require additional data collection before an appropriate SSO can be developed. At a minimum, the Regional Board must make more | The State Board-assigned peer reviewer, Dr. Inge Werner, concluded that "it is clear to the reader that based on previous work and recommendations of the US EPA, the [water- |

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| | | | conservative assumptions and include a margin of safety in all calculations to ensure that all species are protected. For the Board to move forward with SSOs at a time where some dischargers in these watersheds have not even completed facilities to reduce ammonia concentration in their effluent is premature and based on woefully inadequate data. | effect ratio] approach and the "Guidelines for Deriving Numerical Water Quality Criteria for Protection of Aquatic Organisms and their Uses" are the appropriate approaches for determining site-specific numerical objectives for ammonia in the Southern California water bodies under discussion ... [t]he number of performed tests is appropriate and the relatively low variability between sites on the same water body confirms that results are scientifically acceptable … [t]he approaches [to calculating the final WERs and SSOs] are scientifically sound since they follow the US EPA guidance documents and are sufficiently conservative in nature, where deviations from the guidance document occur."<br><br>See also responses 4.1 – 4.5 and 4.9 – 4.11. |