

## Memorandum of Understanding to Implement the Cooperative Agreement

*Accepted: Wednesday, January 14, 2009*

*Amended: Wednesday, August 31, 2011*

*Amended: Monday, July 2, 2012*

*Amended: Monday, July 13, 2015*

The Cooperative Agreement to Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basin states, in part, that:

*"The Parties that intentionally recharge imported water within the Santa Ana Region (the "Recharging Parties") agree voluntarily to collect, compile and analyze the N/TDS water quality data necessary to determine whether the intentional recharge of imported water in the Region may have a significant adverse impact on compliance with the Salinity Objectives with the Region. To that end, the Recharging Parties will collect, compile and analyze such N/TDS water quality data and prepare, within eighteen months from the effective date of this agreement, and every three years thereafter, a report... The Recharging Parties will agree among themselves regarding the manner in which they will prepare the report and the manner in which they will share the cost of preparing the report."*

The remainder of this document describes the agreed upon manner in which the report(s) will be prepared and costs will be shared.

- 1) Each individual Recharging Party will be responsible for preparing the report for all groundwater basins where the Recharging Party is intentionally recharging imported water or intends to recharge imported water at any time between January 18, 2008 and July 18, 2012. If a Recharging Party has no plans to recharge imported water during the aforementioned period, it should so state in a letter to the other signatories to the Cooperative Agreement mailed on or before March 31, 2009.
- 2) The final report(s) must be submitted to the Santa Ana Regional Water Quality Control Board on or before July 18, 2009 in accordance with Resolution No. R8-2008-0019. However, the Recharging Parties have concluded that it is not necessary to "integrate" the individual reports into a single document for submission in July of 2009.
- 3) Each Recharging Party preparing a report will circulate a draft version of the first report(s) to all other Parties to the Cooperative Agreement on or before March 31, 2009. SAWPA will convene and coordinate a meeting approximately 30 days later at which meeting the draft reports will be discussed.
- 4) For all subsequent triennial summary reports of imported water recharge, the reports will be prepared for the prior three calendar years and submitted to SAWPA and the Regional Board 30 days prior to July 18<sup>th</sup> and every three year thereafter. The reports should reflect imported water recharges based on monthly TDS and Nitrate (NO<sub>3</sub>-N) data as flow-weighted concentrations for the volume of water recharged during the three previous calendar years. If a Recharging Party did not recharge any imported water recharge over the previous three years, a letter indicating such should be prepared and submitted to SAWPA and the Regional Board.

- 5) Each Recharging Party will bear its own costs to prepare the report(s). In addition, the Recharging Parties will share SAWPA's direct administrative costs to implement the Cooperative Agreement equally.
- 6) The Recharging Parties acknowledge that different modeling methods will be used to develop the 20-year projections for groundwater quality in various management zones. Given the complexity of the modeling effort and the acknowledged differences in modeling approaches, the Recharging Parties agree that it would be prudent to assemble a Technical Committee (TC) to assure a high level of quality and consistency between the separate reports. Attendance and participation in the TC is not mandatory and the TC recommendations are not binding. The Recharging Parties have asked SAWPA to coordinate meetings of the Technical Committee. The Regional Water Quality Control Board staff has also agreed to participate on the Technical Committee. Each signatory to the Cooperative Agreement is entitled to name its own representative(s) to the Technical Committee.
- 7) Future integration will be accomplished by staggering delivery dates for the 20-year projections in a manner that assures that long-term estimates of upgradient groundwater quality have been completed and accepted well before a similar projection must be made for each downgradient management zone. Therefore, the Recharging Parties and the Regional Board have agreed that the second set of projection reports will be due in accordance with the schedule shown in Table 1.

**Table 1: Due Dates for Second Report Projecting Future Groundwater Quality**

<b>Recharging Areas</b>	<b>Report Due Date</b>
Beaumont, Yucaipa and San Timoteo Management Zones	July 18, 2012 and every six years thereafter
Bunker Hill A, Bunker Hill B, Lytle, Rialto and Colton Management Zones	July 18, 2013 and every six years thereafter
Riverside A thru Riverside F, Arlington, Temescal and Elsinore Management Zones	July 18, 2015 and every six years thereafter
San Jacinto Area Management Zones	July 18, 2014 and every six years thereafter
Orange County Management Zone	July 18, 2016 and every six years thereafter

- 8) The Santa Ana Regional Water Quality Control Board has agreed that the document entitled: "Recomputation of Ambient Water Quality in the Santa Ana Watershed for the Period 1987 to 2006" (a technical memorandum prepared by Wildermuth Environmental, Inc. for SAWPA's Basin Monitoring Program Task Force) meets all of the obligations identified in Section 4(a) of the Cooperative Agreement for the reports due on July 18, 2009. However, any Recharging Party may also elect to prepare its own independent analysis and submit a separate report as described in Section 4(a) of the Cooperative Agreement.
- 9) For the first report, due in July of 2009, the signatories to the Cooperative Agreement acknowledge that the data needed to estimate future subsurface boundary inflows from upgradient groundwater basins adjacent to their own management zones may not be

available. Therefore, the Recharging Parties may elect to assume that TDS and nitrate-nitrogen concentrations are equal to the applicable water quality objective for the upgradient management zone or use the estimated ambient TDS and nitrate-nitrogen concentrations for the upgradient management zone whichever is higher. Where a Recharging Party elects to rely on the estimated ambient TDS or nitrate-nitrogen concentration in the upgradient groundwater management zone to calculate projected water quality in its own management zone such values should be taken from the same report the Recharging Party submitted to fulfill its obligation under section 4(a) of the Cooperative Agreement.

- 10) The Recharging Parties agree that the reports must include a detailed description of the initial water quality conditions (e.g. nitrate-nitrogen concentration and TDS concentration) in the saturated zone of each groundwater management zone for which a 20-year projection is estimated. For the first report, due in July of 2009, the initial conditions will be estimated as of January, 2008. Where actual data is not available for January, 2008 the Recharging Parties may estimate the volume of groundwater and/or salt concentrations from one of the calibrated and validated computer models identified in Section 5(b) the Cooperative Agreement.
- 11) At a minimum, the Recharging Parties agree to prepare and report future water quality projections using the estimated subsurface boundary outflows from the upgradient projections as the estimated subsurface boundary inflows for their own management zone projections. However, nothing in the Cooperative Agreement precludes any Recharging Party from also preparing additional alternative future projections of groundwater quality using different assumptions about the estimated subsurface boundary inflows from upgradient groundwater basins adjacent to their own management zone.
- 12) The Recharging Parties agree that any report submitted pursuant to the Cooperative Agreement will be prepared in accordance with commonly accepted professional standards such as those described in the Board of Geologists and Geophysicist's "Guidelines for Groundwater Investigation Reports" and the California Department of Conservation's Division of Mines and Geology's "Guidelines for Preparing Geologic Reports for Regional-Scale Environmental Resource Management Planning (aka Note 52)."
- 13) Section 4(c)1 of the Cooperative Agreement states that the "*projection of ambient water quality for each groundwater management zone will ... reasonably account for surface fluxes of salt input...*"

The Recharging Parties agree that the following salt in-fluxes must be accounted for when and where they are known to exist:

- \* Storm water recharge (incidental and deliberate)
- \* Artificial recharge of imported water (incl. State Project Water and Colorado River Water)
- \* Artificial recharge from on-site wastewater disposal (e.g. septic systems)
- \* Deep percolation of precipitation and agricultural and landscape irrigation water
- \* Subsurface boundary inflows from upgradient groundwater basins adjacent to their own management zone
- \* Routing recharge flows from all influxes through the vadose zone

The Recharging Parties also agree that the following salt out-fluxes must be accounted for when and where they are known to exist:

- \* Groundwater pumping
- \* Rising groundwater
- \* Evapotranspiration
- \* Subsurface boundary outflows to downgradient groundwater basins adjacent to their own management zone

The Recharging Parties agree to certify in the report(s) that each of the salt in-fluxes and out-fluxes identified above have been accounted for in their 20-year projections and to provide a brief explanation as to how each of these fluxes is addressed in the relevant calculations and to provide more detailed technical documentation upon request of any signatory to the Cooperative Agreement.

- 14) The Recharging Parties acknowledge that the obligations of the Cooperative Agreement and the principles described in this Memorandum of Understanding apply only to the signatories to the Cooperative Agreement and have no binding effect on other persons or agencies in the region that may be engaged in similar water resource management activities.