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**MEMORANDUM**

January 22, 2020

TO: BASIN MONITORING PROGRAM WORKSHOP PARTICIPANTS

FROM: THERESA A. DUNHAM

SUBJECT: OVERVIEW & QUESTIONS FOR CONSIDERATION FOR TECHNICAL CONSULTANT WORKSHOP

On February 9, 2021, the Santa Ana Watershed Project Authority in conjunction with the Basin Monitoring Program Task Force (BMPTF) will hold a workshop to discuss potential approaches for implementing monitoring program requirements as contained in the Santa Ana Regional Water Quality Control Board's (Santa Ana Water Board) pending revisions to the Water Quality Control Plan for the Santa Ana Region (Basin Plan). Specifically, the pending revisions require identified agencies to collectively submit updated surface water and groundwater monitoring programs for Santa Ana Water Board consideration by June 1, 2022. In advance of issuing a Request for Proposal (RFP) for preparation of these updates, the BMPTF decided that it would be helpful to first convene a workshop that includes consultants/technical advisors that are familiar with one or both of the monitoring programs implemented through the BMPTF. Through our communications with you, you have indicated a willingness to participate in this workshop. Thank you!

The purpose of the workshop is to obtain input from you, well-informed professionals, as to potential monitoring program approaches that the BMPTF should consider so that a proper RFP can then be prepared and distributed. In respect for your time in preparing for this workshop, we have prepared a series of questions that will be posed and discussed during the workshop. We ask that you review the questions and be prepared to share your thoughts in response for those questions in which you would like to respond. There is no obligation to respond to each question. Further, we do not expect you to prepare a formal presentation in response. We have prepared an agenda so that we can manage the time for the workshop and give all participants a fair opportunity to respond, if you so choose.

The questions are divided into two categories: 1) Groundwater Monitoring Program for TDS and Nitrogen, and 2) Surface Water Monitoring Program Requirements for TDS and Nitrogen.

### **Category 1 – Update to Groundwater Monitoring Program for TDS and Nitrogen**

At a minimum, the Groundwater Monitoring Program must be a watershed-wide monitoring program for TDS and nitrogen that provides data necessary to implement the Basin Plan's TDS/nitrogen management plan. Data collected and analyzed from the program must at a minimum, address the following:

- determination of current ambient quality in groundwater management zones;
- determination of compliance with TDS and nitrate- nitrogen objectives for the management zones;
- evaluation of assimilative capacity findings for groundwater management zones;
- assessment of the effects of recharge of surface water POTW discharges on the quality of affected groundwater management zones;
- requirements specified in the State Board's Recycled Water Policy (Resolution No. 2018-0057);
- determination of current ambient quality should be consistent with methodology employed by the Nitrogen/TDS and Basin Monitoring Program Task Forces (20-year running averages) to develop the TDS and nitrogen water quality objectives included the Basin Plan.

A key component of the Groundwater Monitoring Program update is to ensure that the approach includes and addresses additional requirements contained in the State Water Board's 2019 Recycled Water Policy (Recycled Water Policy).<sup>1</sup> Further, the BMPTF is interested in learning if there are more efficient approaches that could be employed to meet the requirements of both the Basin Plan and the Recycled Water Policy.

#### **Questions:**

- 1) The Recycled Water Policy requires a basin- or subbasin-wide monitoring plan that includes an appropriate network of monitoring locations to provide a reasonable and cost-effective means of determining whether the concentrations of salts, nutrient and other constituents of concern are consistent with applicable water quality objectives (§6.2.4.1). Are there more cost-effective approaches than the one currently used by the BMPTF for making this determination? In particular, are there existing areas/tasks where the required level of effort incurs costs that are highly disproportionate to the benefits associated with the final product (i.e. the results provide little or no apparent value to subsequent decision making)?
- 2) Both the 2009 and current Recycled Water Policies include specific direction for determining assimilative capacity and conducting antidegradation analysis for groundwater recharge projects. In the 2009 Recycled Water Policy, assimilative capacity is to be calculated by comparing the mineral water quality objective with the "average concentration" of the basin/subbasin (§9-c-1). In the current Recycled Water Policy, this language was revised to state that assimilative capacity shall be calculated by comparing the mineral water quality objective with the "representative concentration" of the basin or subbasin (§8.2.4.1). Although these provisions apply specifically to recharge projects, should the BMPTF consider an alternative approach (as supported in the Recycled Water Policy) for characterizing the

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<sup>1</sup> The Recycled Water Policy is available at:

[https://www.waterboards.ca.gov/water\\_issues/programs/water\\_recycling\\_policy/policy.html](https://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/policy.html)

"representative concentrations" of salt and/or nitrogen in a given groundwater basin rather than the long-term, volume-weighted average that the Santa Ana Water Board presently relies on to make that determination? Should the BMPTF and the Santa Ana Water Board revisit the prior decision to use a 20-year temporal average, to apply a statistical confidence interval to the well data, and to characterize current ambient quality as a spatially-averaged single value? Is there a better approach that offers greater utility in the context of common water resource management practices in the region?

- 3) The Recycled Water Policy requires that the associated monitoring plans be designed to effectively evaluate water quality in the basin, with a focus on water supply wells. (§6.2.4.1.1.) The Recycled Water Policy also states that monitoring plans may include data from existing wells where such wells are located and screened appropriately to determine water quality in the most critical areas of the basin. (§6.2.4.1.2.) What approach(es) would you recommend for identifying the "most critical areas?" Or, is it better to continue collecting and analyzing all available well data for all groundwater management zones in the watershed, as the Task Force currently does, rather than trying to make this determination?
- 4) The Recycled Water Policy (§6.1.3 & §6.2.4.3) includes a number of factors to be considered as groundwater basins are being evaluated and salt and nitrogen management plans (SNMPs) are developed; these include, in part, the following:
  - (a) salt and nutrient source identification and loading estimates
  - (b) fate and transport of salts and nutrients
  - (c) contribution of imported water & recycled water to basin water supply
  - (d) reliance on groundwater to supply [users] in a basin or subbasin
  - (e) number and density of on-site wastewater treatment (septic) systems
  - (f) population

What are the advantages and disadvantages of attempting to integrate these factors into the BMPTF's existing monitoring and reporting program? Are there options for meeting these new obligations more efficiently and cost-effectively?

- 5) The Recycled Water Policy (§6.2.1.1) requires the Santa Ana Water Board to identify basins that are a threat to water quality and thus need an SNMP (§6.1.3). What objective scientific metrics are recommended for making this determination or for otherwise prioritizing groundwater basins for the purpose of developing such plans?
- 6) Historically, the BMPTF has focused exclusively on TDS and Nitrate. The Recycled Water Policy allows SNMPs to "address other constituents that may adversely affect groundwater quality" (§6.2.1.1). What, if any, such constituents should the BMPTF consider adding to its existing Monitoring and Reporting Program and what would be the rationale/justification for doing so? In particular, are there recommendations you would make with respect to evaluating individual salt ions (chloride, sodium, sulfate, etc.) in the context of SNMP development?
- 7) The Recycled Water Policy (§6.2.6) appears to anticipate the use of computer models to simulate groundwater quality. Although the BMPTF stated a preference for more frequent and intensive water quality monitoring in lieu of developing a sophisticated groundwater

model, the Imported Water Recharge Workgroup (now a subcommittee of the BMPTF) has been relying on such simulation models for many years now. Should the BMPTF revisit the prior recommendation and reconsider the value and utility of such models? What would be the advantages and disadvantages of realigning the BMPTF's commitment to monitoring vs. modeling?

- 8) The Imported Water Recharge Workgroup subdivided the watershed into five sub-regions and conducted its water quality evaluations on a staggered basis that rotated from top to bottom every five years. Given the complexity of tasks that must be completed to comply with the Recycled Water Policy, should the BMPTF consider adopting a similar approach? What would be the advantages and disadvantages for doing so? Can you recommend a more cost-effective implementation strategy?
- 9) The Recycled Water Policy requires the groundwater evaluations to be updated every five years (§6.2.6.). The Basin Plan currently requires such re-evaluations to be completed every three years. Focusing exclusively on the scientific and technical issues that are being addressed during these evaluations, what would be the advantages and disadvantages of revising the Santa Ana watershed's update schedule to extend it from 3 years to 5 years? Should the BMPTF consider a hybrid approach where high priority basins continue to be reassessed every 3 years and low priority basins would only be evaluated every 5 years? If so, what procedure would you recommend for establishing each basin's relative priority?

#### **Category 2 – Update to Surface Water Monitoring Program Requirements for TDS and Nitrogen**

At a minimum, the surface water monitoring program must provide an evaluation of compliance with the TDS and nitrogen objectives for Reaches 2, 3, 4 and 5 of the Santa Ana River. The current program consists of baseflow sampling at below Prado Dam to determine compliance with Reach 3 objectives, and surface water monitoring commitments by other agencies as part of their “maximum benefit” programs. Compliance with the objectives is determined by evaluating data collected by Santa Ana Water Board staff, Santa Ana River Watermaster, Orange County Water District, the United States Geological Survey and others. The results are submitted annually to the Santa Ana Water Board.

An updated surface water monitoring program must be submitted by June 1, 2022.

#### **Questions:**

- 1) In the current Annual Report of Santa Ana River Water Quality, data for multiple parameters is compiled and included beyond data for TDS and nitrogen. Should the BMPTF continue to compile data for the additional parameters or focus only on TDS, nitrogen and related parameters?
- 2) The Recycled Water Policy focuses mostly on salt and nutrient impacts to groundwater basins and sub-basins. Are there any provisions in the Recycled Water Policy that the BMPTF should consider in updating the Surface Water Monitoring program?

- 3) Are there new tools or approaches that the BMPTF should consider developing or utilizing to evaluate compliance with TDS and nitrogen objectives for Reaches 2, 3, 4 and 5 of the Santa Ana River?
- 4) What implications, if any, does the State Water Board's on-going effort to develop Numeric Nutrient Endpoints have for the BMPTF? Should the BMPTF consider modifications to its surface water quality monitoring program in anticipation of probable changes in statewide nutrients policy?
- 5) In late 2016, State Water Board staff initially recommended that Reach 3 of the Santa Ana River be added to the 303(d) list due to impaired macroinvertebrate communities attributed, in part, to exceedances of water quality objectives for TDS and various individual salt ions (chloride, sodium, and sulfate). This assessment was based on data from benthic surveys that was evaluated using the California Stream Condition Index (CSCI). Although the recommendation was later withdrawn in 2017, it may be resurrected in the next 303(d) review cycle (currently scheduled for 2022-2024). What, if any, modifications to the surface water monitoring program should the BMPTF consider to address this concern?
- 6) The BMPTF has identified as a priority the need to conduct a study to identify and quantify the cause(s) of TDS exceedances during baseflow conditions at below Prado Dam. This would be a follow-on study to the ones performed by WEI in early 2015, which showed that the exceedances were not due to POTW discharges and were more likely the result of poor-quality rising groundwater in the Prado Basin Management Zone (PBMZ). Do you have suggested approaches or considerations that the BMPTF should take into account for this study?

On behalf of the BMPTF, thank you! The BMPTF is at a critical juncture in identifying and developing updated monitoring programs that may be in place for multiple decades. Accordingly, your professional input, knowledge of the watershed, and willingness to participate in this workshop, is extremely valuable and appreciated by the BMPTF.