**This Document Describes the Identification of Data Gaps and the Proposed Steps to Address Data Gaps**

***Explanation:***

Maps documenting the draft identification of data gaps by GMZ are provided in the file “*DRAFT GMZ Monitoring Network Maps.pdf*”. (NOTE: maps for La Habra and Santiago GMZ are not provided. There are no wells in these two GMZs.) The “Responsible Agencies” for addressing data gaps are identified in the matrix table file *“Data Gaps Responsible Agencies Matrix.pdf”*. This needs to be reviewed and refined with the Task Force and Regional Board. ***We will seek feedback during and following the meeting.*** The maps are presented in the order the appear in the rows of the Responsible Agency matrix.

For each GMZ, there are two maps:

1. Characterization of Historical and Ongoing Groundwater Monitoring for TDS and Nitrate. This map was prepared and used to understand the location of wells with data used in the 2018 ambient water quality relative to the location of wells that are continuing to be monitored. And to assess where data gaps exist. The map is broken up into two panels.
	1. The top panel shows the TDS concentration distribution raster for the GMZ based on the 2018 AWQ results and the location of wells with data used in the analysis for the 20-year period of 1999 to 2018. This map provides an understanding of the spatial coverage of data in the most recent analysis. The location of wells with data used to develop the raster are shown as follows:
		1. ***Green Circles*** are wells that had enough data to compute a TDS *and* nitrate statistic in 2018.
		2. ***White circles*** are wells that only had a TDS or nitrate statistic. There was only enough qualifying data for one of the two constituents.
		3. ***Purple triangles*** are wells that had insufficient data available to calculate the ambient water quality statistic.
	2. The bottom panel shows the storage volume distribution raster for the GMZ and a characterization of the relative time period of available data at each well location. Note that areas in grey and dark brown have no to limited aquifer volume. The wells are further characterized as follows:
		1. Wells shown as an ***open circle filled with a purple circle*** are wells whose qualifying data to generate statistics included data in the last three years of the 20-year analysis period: 2016, 2017 and/or 2018. This was an initial indication that the well location is still being monitored. If there is a ***black check mark in the center of the purple circle***, we have confirmed the well continues to be monitored.
		2. Wells shown as an ***open circle only*** are wells whose qualifying data to generate statistics was limited to the time period from 1999 to 2015. This was an initial indication that the well location is no longer monitored. As time progresses, these points will be lost as statistics since they are now confirmed to no longer be monitored.
		3. Wells shown as an ***open circle with a black check mark (no purple circle)*** are wells whose qualifying data to generate statistics was limited to the time period from 1999 to 2015 even though new data was available for the well in 2016, 2017, and/or 2018. This means that the data was not collected for the 2018 analysis. See for example maps of San Jacinto Upper Pressure, Beaumont, and Lytle GMZs.
		4. Wells shown as a ***black check mark only*** are wells that are currently being monitored as of 2022, but did not have sufficient data to qualify for the 2018 analysis.
2. Groundwater Quality Monitoring Network. This map shows the monitoring program that will be submitted to the Regional Board. These maps were prepared after detailed review and research with each of the Responsible Agencies and other well owners. The maps also contain a draft interpretation of data gaps.

Data gaps were identified qualitatively as follows:

* In areas with the storage raster shows significant aquifer volume and there are either no wells monitored or there are large spatial gaps between monitored wells.
* In high TDS areas where a spatial gap is created by well(s) that have generated statistics in the past but are no longer monitored.
* In areas where a significant spatial gap is created by wells that have generated statistics in the past but are no longer monitored.
* If a well is no longer monitored but occurs in an area with limited aquifer storage (grey and brown areas, it was not deemed a data gap.
* If a well is no longer monitored, but is reasonable in proximity to wells that continue to be monitored, it was not deemed a data gap.

Note that it is not possible for us to learn enough about the specifics of updated hydrogeologic data that could refute the identification of the data gaps. This knowledge gap, which is best addressed by the agencies operating in the GMZs, was considered in the proposed process to address data gaps (see Step 2 of the process). We will cover to examples of where Step 2 might come into play for Responsible Agencies (Beaumont and Temescal GMZ).

The following pages contain a summary of the proposed process that the Responsible Agencies in each GMZ will follow to address data gaps.

**Were Data Gaps identified in the** **2022 Monitoring Program, or in any subsequent year during annual compilation of data?**

No – Responsible Agencies monitor wells and update program annually per 2022 Monitoring Program implementation plan.

Yes – Responsible Agencies (1) proceed to Step 1 of addressing data gaps and (2) monitor wells and update program annually per 2022 Monitoring Program implementation plan.

**Steps to Address Data Gaps**

1. **Determine if data gaps affect Regional Board permitting**

*Do wastewater discharges to the Santa Ana River and its tributaries recharge the GMZ, is recycled water reuse (direct or recharge) currently permitted in the GMZ, and/or is imported water recharge occurring in the GMZ? If no, are any of these activities planned to occur in the next five years? Responsible Agencies have up to two months to address Step 1.*

No – Data gaps do not need to be filled until discharge, reuse, or recharge is planned in the GMZ within the next five-year period. Responsible Agencies for the GMZ must (1) notify the Regional Board and Task Force in writing of this finding and (2) update Regional Board annually as to any changes to the projected discharge and reuse plans.

Yes – ***Proceed to Step 2a*** of addressing data gaps.

1. **Confirmation of Data Gaps**

*2a. Do the Responsible Agencies have technical information to refute the finding that a data gap exists? (For example, is there a new hydrogeologic conceptual model that illustrates that the ambient water quality storage model is outdated and would impact the identification of data gaps?)*

No – Inform Regional Board and BMPTF and immediately ***proceed to Step 3*** of addressing data gaps.

Yes – Prepare a technical memorandum (TM) and submit to Regional Board and Task Force with the hydrogeologic evidence that identified data gaps do not need to be addressed. The TM must include: (1) characterization of evidence with references cited, (2) a proposed updated delineation of aquifer/GMZ boundary (if appropriate), and (3) new aquifer storage properties (including layers, if appropriate). *Responsible Agencies have up to six months to complete this step.*

 *Did Regional Board accept findings of TM submitted in Step 2a (if applicable)?*

Yes – Immediately ***proceed to Step 2b***

No – Immediately ***proceed to Step 3*** of addressing data gaps.

*2b. Recompute antidegradation objectives for the GMZ based on revised aquifer storage model.* *If the GMZ already has maximum benefit objectives, skip this step and proceed to Step 3. Responsible Agencies have up to six months to complete this following written acceptance of 2b TM by Regional Board.*

* This step must be performed pursuant to the method for computing ambient water quality for the 1954 to 1973 period. In this Step the Responsible Agencies may use the point statistics and contours from the objective setting period together with the new aquifer storage model to complete the recomputation of the antidegradation objective. Prepare a brief TM documenting the findings and submit to the Regional Board and BMPTF. ***Proceed to Step 2c***
* Alternatively, Responsible Agencies may recommend maximum-benefit objectives. If this is the recommended action, prepare a letter proposal citing the basis for selecting this approach and submit to Regional Board and Task Force for review. If the Regional Board approves, the maximum benefit demonstration will be completed based on a plan/schedule acceptable to the Regional Board. (Note it can take five years to complete a maximum benefit demonstration and amend the Basin Plan. Thus, monitoring of existing sites must be implemented in the interim).

*2c. If applicable, do the new antidegradation objectives require a Basin Plan Amendment (meaning that based on the recalculation they are different than the current Basin Plan objectives)?*

No – Responsible Agencies continue to monitor wells and update program annually per 2022 Monitoring Program implementation plan.

Yes – Responsible Agencies proceed to (1) support the Regional Board in preparing the Basin Plan Amendment and (2) monitor wells and update program annually per 2022 Monitoring Program implementation plan. The timing to complete this step will be determined on a case-by-case basis. If a Basin Plan amendment is needed for multiple GMZs, the Regional Board can direct the Responsible Agencies or the Task Force to collaborate on a single amendment.

1. **Fill Data Gaps**

*3a. Can data gaps be addressed by monitoring existing wells not initially identified for the monitoring program? Responsible Agencies have up to six months to address Step 3a.*

Yes – Responsible Agencies prepare TM documenting expanded monitoring with newly identified existing wells and submit to the Regional Board and BMPTF. TM must include: (1) updated map and table of monitoring program, including identification of monitoring entities, (2) commitment to annual sampling of new wells that have not previously been monitored for the first three years of monitoring, and (3) identify if data gaps are not fully addressed with existing wells. ***Proceed to Step 3b.***

No – Responsible Agencies prepare TM documenting finding that no existing wells can be added to the monitoring network and submit to the Regional Board and BMPTF. ***Proceed to Step 3c***.

*3b. Based on TM in step 3a, if applicable, does Regional Board find that data gaps have been fully address with newly identified existing wells?*

No – Responsible Agencies Immediately ***proceed to Step 3c*** to address remaining data gaps.

Yes – Responsible Agencies proceed to monitor wells and update program annually per 2022 Monitoring Program implementation plan.

*3c. Can remaining data gaps be filled through construction of new wells? Responsible Parties have six months to complete this step following Regional Board acknowledgement of completion of Step 3a or 3b.*

No – if a finding is made that new wells cannot be constructed, the Responsible Agencies must provide evidence to enable Regional Board to determine if that data gap cannot be reasonably addressed. Findings must be documented and submitted to the Regional Board and Task Force. Such a finding may trigger additional technical studies at the Regional Board’s discretion. Responsible Agencies proceed to (1) implement any Regional Board recommendations and (2) monitor existing wells and update program annually per 2022 Monitoring Program implementation plan.

Yes - Prepare a well siting study and monitoring well construction plan/schedule. Must include: (1) well location(s) and technical specifications, (2) detailed schedule to construct well(s), (3) commitment to annual sampling of new for the first three years of monitoring. Responsible Agencies proceed to (1) implement construction plan and schedule following Regional Board approval and (2) continue to monitor existing wells and update program annually per 2022 Monitoring Program implementation plan.