



## **GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT**

157 Short Street, Bishop, California 93514-3537

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[www.gbuapcd.org](http://www.gbuapcd.org)

June 29, 2020

Via Electronic Mail

Dr. Saeed Jorat  
Los Angeles Department of Water and Power  
Eastern Sierra Hydrology and Water Rights Group  
Water Operations Division  
Los Angeles Dept. of Water and Power  
111 N. Hope St., Room 1468  
Los Angeles, CA 90012

Subject: Review and comments on Six-Month Pumping Test of Testing Well East (TW-E) at Owens Lake, Revised Testing Plan, May 2020.

Dear Dr. Joraat:

Great Basin Unified Air Pollution Control District (Great Basin) staff appreciates the opportunity to review and comment on the Six-Month Pumping Test of Test Well East (TW-E) at Owens Lake, Revised Testing Plan, dated May 2020. The revised test plan was sent to Great Basin on June 9, 2020 and distributed to the Habitat Work Group and Groundwater Work Group on June 10, 2020. Great Basin has read the test plan and respectfully submits the general comments, provided below, as well as the specific detailed comments and edits provided in the attached electronic Word Document file in track-change format. Great Basin had assistance in the technical review of the appendices from Hydrology consultants at Ramboll.

### General Comments

1. Purpose of Test. Section 1 presents the purpose of the proposed six-month pumping test with two bulleted lists. However, the document does not discuss how these goals will be met. A section needs to be added at the end of the document describing how the LADWP intends to meet the stated goals with the proposed test.

2. Purpose of Test. LADWP has been very clear that an overall objective is to utilize groundwater as a resource for dust control measures. Therefore, the introduction should indicate that goal – that this test is really to assess the efficacy of long-term groundwater withdrawal from the aquifer system beneath the lake. Then, the specific technical aspects can be provided.
3. Impacts of Faults. Understanding the hydrological effects of the main faults zones present in the Owens Lake area is important for possible development of groundwater without causing impacts to local resources. This was identified as an item for further work since early modeling work in the 1990s and continues to be an unknown. The number, location and construction of wells currently present in the Owens Lake area still do not allow for determining the effect of pumping across the Owens Valley Fault Zone (OVFZ) or the Owens River Fault Zone (ORFZ). TW-E is located in a block between the OVFZ and the ORFZ. There are insufficient observation wells located west of the OVFZ to determine the potential effect of pumping on resources west of the fault zone. All but one of the wells listed in the document for this purpose are located either within or east of the OVFZ. Well T920 is located west of the OVFZ but is located almost 4 miles from the pumping well making its utility for this purpose questionable. Wells at the River Site may provide some information on the response of resources on the east side of the ORFZ but may be of limited value due to their distance (2.5 miles) from TW-E as well as their construction in different aquifers. The response of wells at the Fault Test site is complicated by their location in the Inyo Mountain Fault Zone as well as their distance from TW-E.
4. Previous Pumping Tests. The discussion in Section 2 of previous pumping tests at Owens Lake needs to include not only tests that were conducted by LADWP in 2012 but also previous tests conducted on the lake such as the long-term pumping test at the River Site in 1996-97 as well as others.
5. Pumping Rate. Justification on the proposed pumping rate of 1350 gallons per minute (gpm) needs to be provided in the document. This is a substantially higher rate than the 800 gpm rate used in the 24-hour test in 2019. Can the well sustain this higher rate for the proposed length of the test? We recommend that the test be designed to start at a lower rate and systematically increase the rate of pumping during the test, if conditions allow.
6. 2020 OLG. The District appreciates that the 2020 Owens Lake Groundwater Model (OLGM) appears to have been used to estimate the anticipated effects of pumping of TW-E. Although there have been presentations given at earlier meetings that describe some of the changes made to the model, there has not been a report distributed that discusses the new model. The District is interested to learn more about the changes made in the 2020 OLG and results from the work.

7. **Monitoring Network.** The District recognizes that there are a lot of monitoring locations in the Owens Lake area. However, the number of locations that may actually be useful for the proposed test is limited when considering well depth, construction, and distance from the test well. Including all previous monitoring locations in the basin in the test plan regardless of well depth and position relative to the test well is misleading and exaggerates the amount of data for the test. Also of concern is that there are several sites listed that are important for the proposed water level and gradient monitoring that are located within highly managed Shallow Flooding or Managed Vegetation dust control measures and are therefore completely inappropriate for their proposed use (notably – 6(1), D.5(1), D.5(2), and Keeler(1)). There needs to be more careful consideration of the actual use of each monitoring point and how the data will be evaluated and if the monitoring point is capable of providing the required information.
8. **Monitoring During Recovery.** The data collected during recovery is critical to pump tests. It is unclear why the recovery data collection period was set at 10-days. This short time period potentially allows for data collection to stop before the system has recovered from the test. Recovery data should be collected for 10-days or until 100% recovery is observed both in TW-E as well as in other monitoring locations.
9. **Data Evaluation.** There is a statement that the test will be stopped if any of the triggers are met at any of the monitoring locations but the data collection and review intervals are set for several weeks to even months such that there may be impacts that occur that are not identified quickly. It is important to evaluate the monitoring data closely to make sure there are not any impacts from the test. Data from critical sites should be collected and reviewed daily through a telemetry system.
10. **VDA Groundwater Monitoring.** Many of the monitoring wells, especially those for the VDAs, have no or very little historic data. Because of this, it is difficult to know what the groundwater levels measured during the test represent in relation to natural variations. There is also no data for what the actual root depth of vegetation in the VDAs and its relationship to groundwater variation.
11. **Triggers are Arbitrary and are NOT Conservative.** The triggers presented in the plan are arbitrary values and not conservative. There is no discussion on how the trigger values were determined and what they are based on. The trigger values need to be reviewed and considered more closely such that they are truly conservative and scientifically meaningful to the specific site.
  - a. **Drawdown:** A 5-foot drawdown in water level in a well (such as T929) that begins with the water at 8.5 feet would drop the level to 13.5 feet below the surface. This is a 50% increase in the depth of the water table and is significant and may well drop the water table below the rooting depth of many plants. Conversely, a similar 5-foot drop in water level in a well (T920) that has a depth to water of 210 feet is only a 2.4% change and is probably not significant. Yet the

same trigger is applied in both situations. Similarly, the drop in water level of 5 feet in a well that is only 10 feet deep is half of the distance in the well and is significant.

- b. Gradient: The gradient triggers are arbitrarily set at 50% of the gradient amount regardless of the difference in values between the two wells. This results in vertical gradient triggers that range from 0.25 feet to 8.15 feet and horizontal gradient triggers that range from 6.89 feet to 87.13 feet. In multiple cases, changes in gradients of this magnitude could allow a well to become dry without tripping the triggers values (that is the trigger value are greater than the depth of the well). Additionally, it may be possible for both wells to have a drop in water level but that there is no real change in the difference between the two such that the gradient is the same and the trigger is not reached.
12. **Vegetation Monitoring.** Potential impacts to vegetation need to be monitored and included in the proposed test. Currently, there is no monitoring of precipitation, ET, vegetation health etc. planned in association with the proposed pump test. Because there is no understanding of the relationship of the vegetation resources to groundwater it is unknown if the trigger levels are protective. The District is concerned that groundwater pumping will result in changes to vegetation that will lead to the development of dust sources that will cause exceedances of both Federal and California state PM10 standards. The development and implementation of a robust monitoring program, and associated protective resource protection protocols for the stable vegetated dune areas and vegetation areas are critical.

Great Basin staff supports the development of a detailed test plan for the proposed long-term aquifer test at TW-E and the attempt to incorporate conservative triggers to protect natural groundwater dependent resources on and around Owens Lake and appreciates the effort from the Los Angeles Department of Water and Power to be transparent about data collected as part of the test. The Vegetated Dune Areas (VDAs) are an important resource that not only provide habitat but also serves to protect the surface from dust emissions and associated air quality impacts. Great Basin staff supports the concept of using trigger values as a basis for evaluating potential impacts from groundwater development, however, trigger levels, as currently proposed in the test plan, are insufficient to adequately protect the resource.

Please contact Grace Holder by email at [gholder@gbuapcd.org](mailto:gholder@gbuapcd.org) or by phone at (760) 872-8211 x236 if there are any questions regarding the comments provided here or in the electronic WORD document files.

Sincerely,



Phillip L. Kiddoo  
Air Pollution Control Officer

Enclosure:

TW-E 6-Month Testing Plan Revised\_Great Basin comments\_20200629.docx electronic WORD document file with track changes.

Cc:

Dr. Grace Holder, GBUAPCD  
Ms. Sondra Grimm, GBUAPCD  
Mr. Nelson Mejia, LADWP  
Mr. Scott Warner, Ramboll



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July 24, 2020

Via Electronic Mail

Dr. Saeed Jorat  
Los Angeles Department of Water and Power  
Eastern Sierra Hydrology and Water Rights Group  
Water Operations Division  
Los Angeles Dept. of Water and Power  
111 N. Hope St., Room 1468  
Los Angeles, CA 90012

Subject: Additional Comments on Six-Month Pumping Test of Testing Well East (TW-E)

Dear Dr. Jorat:

Great Basin Unified Air Pollution Control District (Great Basin) staff appreciates the continued opportunity to contribute technical review and comment on the Six-Month Pumping Test of Test Well East (TW-E) at Owens Lake, Revised Testing Plan, dated May 2020. The revised test plan was sent to Great Basin on June 9, 2020 and distributed to the Habitat Work Group and Groundwater Work Group on June 10, 2020. Great Basin read the test plan and submitted both general comments and specific detailed comments, and suggested edits to you in our letter of June 29, 2020. We also participated in a web-based meeting with you and your consultant team on July 8, 2020. During the July 8 meeting you provided your response to our comments (through both dialogue and a PowerPoint presentation) and allowed us to ask additional questions. During the entire aquifer test workplan review process (including reviewing your written documents and engaging during the July 8 web meeting), Great Basin was assisted by our hydrology consultants at Ramboll including Mr. Scott Warner, PG, CHG.

As in our June 29, 2020 letter, Great Basin staff supports the development of a detailed test plan for the proposed long-term aquifer test at TW-E and the attempt to incorporate conservative triggers to protect natural groundwater dependent resources on and around Owens Lake. Of particular importance are the Vegetated Dune Areas (VDAs), a critical groundwater dependent resource, that not only protect the surface from dust emissions and associated air quality impacts but provide habitat and protect other sensitive resources. We appreciate the effort from the

Los Angeles Department of Water and Power (LADWP) to be transparent about data collected as part of the test. While we reiterate our support for the concept of using trigger values as a basis for evaluating potential impacts from groundwater development, as we continued to stress during the July 8 web meeting, the trigger levels as currently proposed in the test plan are insufficient to adequately protect groundwater dependent resources and we request that LADWP modify and enhance the proposed trigger metrics.

Following the submittal of our comments, we became aware that additional written comments were provided to you by the Inyo County Water District and the Big Pine Paiute Tribe of Owens Valley. Without deference to the comments provided by those organizations, or potential future comments from other stakeholders, we wish to reiterate several points that we made in writing to you while we await any formal response-to-comments from you and a revised version of the aquifer test plan (noting that our participation on the July 8, 2020 meeting was for informational purposes only). Also note that the comments in our June 29, 2020 letter remain a priority interest to us.

1. We remain concerned that LADWP remains solely focused on using well TW-E as a potential groundwater resource for dust control measures; data collection from this test for the purpose of calibrating the numerical groundwater model (under development according to LADWP) remains a lower priority objective. Great Basin is concerned that unless a fully vetted groundwater model is made available for review we will not be comfortable that a long stressful groundwater pumping program from TW-E will be protective of environmental resources in the Owens Lake area. Of particular importance to Great Basin are preserving the stable VDAs so that they do not become sources of windblown particulate matter.
2. While we appreciate the discussion of monitoring well locations to be used for the proposed long-term test of well TW-E, we still believe that the currently proposed monitoring points are insufficient in location, depth, and number for: (a) understanding the hydrological effects of the main fault zones present in the Owens Lake area; (b) causing impacts to local resources. This was identified as an item for further work since early modeling work in the 1990s and continues to be an unknown and both the test plan and discussion on the July 8, 2020 web meeting did not provide additional information to increase our confidence of this objective. We also reiterate our comment that including all previous monitoring locations in the basin in the test plan regardless of well depth and position relative to the test well is misleading and exaggerates the amount of data for the test. We appreciate LADWP's willingness to consider revising the table of monitoring wells as we suggested during the July 8, 2020 call and look forward to reviewing the updated list of monitoring points with their associated detail. Also recall our position that there are several sites listed that are important for the proposed water level and gradient monitoring that are located within highly managed Shallow Flooding or Managed Vegetation dust control measures. These points are inappropriate for their proposed use (notably – 6(1), D.5(1), D.5(2), and Keeler(1)).

3. We remain not convinced that there is appropriate justification for the proposed pumping rate of 1350 gallons per minute (gpm) and request that this be provided in the document. We suspect this will remain a concern for other stakeholders as well. We continue to recommend that the test be designed to start at a lower rate and systematically increase the rate of pumping during the test, if conditions allow.
4. Thank you for considering our position that the proposed water level monitoring period during recovery following cessation of pumping from TW-E is insufficient. As recommended during our July 8 web meeting, we suggest that recovery data should be collected for 10-days or until 100% recovery is observed both in TW-E as well as in other monitoring locations. Additionally, as discussed at the July 8 web meeting, we appreciate that LADWP is willing to shorten the length of time between collection and evaluation of data either through increased site visits by LADWP personnel or through use of radio telemetry.
5. We discussed at length, our concern about monitoring and triggers near the VDAs. Many of the monitoring wells, especially those for the VDAs, have no or very little historic data. Because of this, it is difficult to know what the groundwater levels measured during the test represent in relation to natural variations. There is also no data for what the actual root depth of vegetation in the VDAs is. This goes with our opinion that the proposed triggers are arbitrary and are NOT conservative. We request that the revised test plan contain a discussion on how the trigger values were determined and what they are based on. The trigger values need to be reviewed and considered more closely such that they are truly conservative and scientifically meaningful to the specific site. Similarly, this concern also remains for the proposed gradient monitoring. As we noted, the proposed gradient trigger of 50% between two wells also is an arbitrary value. Again, this is where a fully vetted numerical groundwater model may help to more quantitatively defend the selection of trigger values; but we have not yet seen a final model in presentation or review.
6. Finally, as you know, we request that potential impacts to vegetation must be monitored and included in the proposed test. We appreciated the discussion of the VDA evaluation program that was presented during the July 8, 2020 web meeting after the discussion of the TW-E test plan but note that if the proposed pump test lasts 6 months and begins in October/November that the last month or more will be conducted during the beginning of the growing season. We also note that if the start of the test is delayed further that the test may be occurring during the peak of spring growth in May and June. We would like to see a vegetation monitoring plan added directly to the pumping test plan and include additional information on precipitation, evapotranspiration, vegetation health, etc. planned in association with the proposed pump test. Because there is no understanding of the relationship of the vegetation resources to groundwater it is unknown if the trigger levels are protective. The District remains very concerned that groundwater pumping will result in changes to vegetation that will lead to the development of dust sources that will cause exceedances of both Federal and California state PM10 standards.



Great Basin staff looks forward to LADWP considering our comments and recognizing our concerns. Once a final groundwater model is made available, and the modified aquifer test plan is provided, we will be able to assess the proposed aquifer test plan with appropriate quantifiable information.

Please contact me or Dr. Grace Holder by email at [gholder@gbuapcd.org](mailto:gholder@gbuapcd.org) or by phone at (760) 872-8211 x236 if there are any questions regarding these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "Phil Kiddoo", with a long horizontal flourish extending to the right.

Phillip L. Kiddoo  
Air Pollution Control Officer

Cc:

Dr. Grace Holder, GBUAPCD  
Ms. Sondra Grimm, GBUAPCD  
Mr. Nelson Mejia, LADWP  
Mr. Scott Warner, Ramboll

November 2, 2020

Mr. Phillip L. Kiddoo  
Air Pollution Control Officer  
Great Basin Unified Air Pollution Control District  
157 Short Street  
Bishop, California 93514

Dear Mr. Kiddoo:

Subject: Operational Test of Testing Well TW-E at Owens Lake - Updated Testing Plan

Thank you for reviewing the testing plan for the operational test of well TW-E at Owens Lake and providing comments. LADWP staff have reviewed your comments and conducted two teleconferences with your staff to address the GBUAPCD's comments. The comments included suggestions, corrections, requests for details, and some areas of disagreement. Based on the comments provided and follow up discussions, LADWP has updated the testing plan. Below is a list of GBUAPCD's main comments (shortened and summarized for brevity) and explanations of how they are addressed in the updated testing plan.

1. Purpose of the test. How the proposed six-month test will meet the goal.

*Pumping data from TW-E, in combination with information from the spinner logging during pumping will be used to determine the flow contribution from each of the aquifers. Groundwater level data from the three monitoring wells approximately 0.6 mile north of TW-E along with pumping data will be used to perform a more refined aquifer characteristic analysis in the vicinity of TW-E. Groundwater monitoring data from wells across the faults will measure the effect of the fault zones on groundwater flow.*

*All of data collected during the operational test will help update and improve the conceptual hydrogeologic and computer model of Owens Lake area and provide a more robust tool for groundwater management at Owens Lake, and most importantly, protect groundwater-dependent resources such as vegetated dune areas that are of most concern to your agency.*

2. Purpose of the test. LADWP's overall objective.

*Conducting the proposed operational test of TW-E is part of Owens Lake Groundwater Development Program (OLGDP), a component of the planned Owens Lake Master Project. The objective of OLGDP is to optimize groundwater management at Owens Lake by implementing groundwater banking in and around Owens Lake when excess Los Angeles Aqueduct supply is available and utilize water beneath Owens Lake to supply a portion of water demand for dust mitigation in an environmentally sustainable manner.*

*As we have conveyed in the past, LADWP is utilizing an adaptive management strategy by implementing the OLGDP at small increments along with extensive and comprehensive monitoring and adjusting the program as data is collected and analyzed.*

3. Impact of Faults. All but one well is located west of Owens Valley Fault Zone

*The fault zones shown in the document are general in nature. Please see the attached more detailed map showing the Owens Valley Fault Zone (OVFZ) and various splays of the fault zone. The main splay of OVFZ is the near-continuous 1872 ruptured section (eastern splay) based on multiple sources of evidence reflected in the geology and groundwater studies. As shown on the map, there are multiple monitoring wells located west of the main splay, which show very different formation lithology, water levels, and water quality as opposed to corresponding monitoring wells located east of the splay. Monitoring data from these wells during the operational test will be used to determine the effect of the fault as a barrier to groundwater flow.*

4. Previous operational tests at Owens Lake.

*A description of previous operational tests at the Mill and River sites is added to the attached updated revised testing plan as requested.*

5. Pumping rate. Can the well sustain this higher rate?

*Our calculations indicate that it can. The data collected from the 24-hour pumping test was used to determine the pumping rate for the 6-month operational test of TW-E. The pump setting for the test will be at 580 feet depth below ground surface. Based on LADWP's analysis, TW-E is able to maintain a pumping rate of 3 cfs with little to no impact to local resources. The proposed 3 cfs pumping rate was selected as a conservative measure to be sufficiently high to produce useful data while avoiding unforeseen impacts. In the event that the proposed pumping rate could not be maintained per the testing plan, the pumping rate will be reduced or pumping terminated and post-pumping water level and recovery data collection will begin.*

6. 2020 Owens Lake Groundwater Model. District is interested in learning more about changes made to the model.

*The 2020 update of Owens Lake Groundwater Model (OLGM) is completed and has been uploaded to the OLGDP web page at [www.ladwp.com/olg](http://www.ladwp.com/olg). The 2020 version of the OLGM is an update of the original model that was developed in 2012 with improvements in multiple areas. The 2012 model development was overseen by a Blue-Ribbon Panel with experts from both the public and private sectors. More detail on the role of the Blue-Ribbon Panel is included in the updated testing plan. It is important to note that although the model was utilized to understand the anticipated effects and geographic area of potential effects, one of the goals of the operational test is to further improve the OLGM as a groundwater management tool. The testing plan is designed to monitor and protect each type of groundwater-dependent resource, regardless of the modeling results.*

7. Monitoring Network. Including all monitoring wells relative to the testing well is misleading and exaggerates the amount of data for the test.

*The current long-term hydrologic monitoring program at Owens Lake that includes a large number of monitoring wells located in and around Owens Lake will continue during the operational test of TW-E. Based on our simulation of the six-month operational test using the current version of the OLG, the effect of the operational test will be measurable only in the northern half of the lake. To address your comment, the list of monitoring wells is now divided into two groups of primary and secondary monitoring locations. The data collected from the monitoring program will verify the accuracy of this forecast. The lack of a measurable effect of pumping at a monitoring location will indicate that pumping TW-E at a rate of 3 cfs for a period of six months will likely not have any effect on groundwater-dependent resources near that monitoring location.*

8. Monitoring During Recovery. Why the recovery data collection period was set at 10 days.

*The current monitoring program at all monitoring locations will continue beyond the pumping and recovery phases of the proposed operational test of TW-E. That means recovery data collection will continue through the full recovery of groundwater levels. The testing plan has been updated to reflect this.*

9. Data Evaluation. Data from critical sites should be collected and reviewed daily through a telemetry system.

*Monitoring data and particularly data from trigger wells will be monitored closely. The bulk of changes in groundwater levels, similar to any other operational test, are expected to occur early in the test, followed by much slower changes as the test progresses. To address your comment, the proposed data downloads are revised to be more frequent. Any trend in groundwater levels moving towards trigger levels will be noted and data download frequency will increase for wells approaching the trigger levels accordingly. LADWP will increase the data download from those wells through the pumping phase of the test. The data collection and download from trigger wells will happen weekly to start with and in case a trend towards trigger level is noted, the data download frequency will increase to weekdays.*

10. Vegetated Dune Areas (VDAs) Groundwater monitoring. Many of the monitoring wells, especially those for the VDAs, have very little or no historic data.

*Monitoring wells at some of the VDAs have not been installed yet but are planned to be installed prior to the start of the operational test. A few of the planned monitoring wells at VDAs were recently installed and data collection has already started. Satellite imagery is currently being utilized to determine the range of natural variability of VDAs and in relation with other hydrologic parameters such as precipitation and groundwater levels. For VDAs with no on-site monitoring wells, data from nearby existing monitoring wells will be utilized to extrapolate groundwater levels. Utilizing an adaptive management strategy allows for starting at a small scale while learning more about the system characteristics over time without affecting the groundwater-dependent resources such as VDAs.*

11. Triggers are arbitrary and are NOT conservative.

*The proposed operational test of TW-E is designed to ensure no significant effects on groundwater-dependent resources in and around Owens Lake from this operational test. A review of formation lithology of wells in the northern part of Owens Lake shows that an approximately 100-foot thick layer of low-transmissivity clay separates the surficial aquifer that supports spring and VDA habitats from the deeper aquifers, where TW-E is screened and will draw water from. The existence of this thick clay layer minimizes any effect of the operational test on groundwater levels under these resources.*

*A trigger mechanism is utilized as an additional level of protection for the groundwater-dependent resources in and around Owen Lake as a part of managing the proposed operational test. Each trigger well and trigger level is set specific to the resource that it is protecting. If water level in a trigger well falls below the pre-set trigger level for that well, pumping will stop and recovery phase of the operational test will start.*

*Water level in non-LADWP wells cannot be measured directly because of access limitations. Instead, trigger wells are selected at a location between the TW-E and each non-LADWP well or group of wells. For non-LADWP wells, a drawdown of five (5) feet is selected as the trigger level in the trigger wells, which corresponds to a much smaller drawdown at non-LADWP wells.*

*For springs, horizontal and vertical gradient is utilized as the trigger mechanism. Any potential effect of pumping will first result in lowering of the groundwater level in the deeper monitoring wells at springs, which in turn will result in lowering of gradient at the monitoring site. A reduction of gradient will subsequently result in the reduction of groundwater flow to the deep to shallow zone and lowering of the groundwater level in the upper monitoring well. Therefore, the use of gradient monitoring is a more conservative method for the protection of habitat at springs than just the groundwater level in the shallow aquifer. Seeping groundwater to the surface will continue as long as there is an upward gradient at spring and seep areas. The proposed trigger for springs and seeps is a 50% reduction in groundwater gradient, meaning that the spring and seep will continue to receive flow from the lower aquifer zone. Finally, even with drop in groundwater levels, vegetation roots will still have access to moisture due to capillary action of the soil during the operational test period. To address your comment, an absolute trigger level in the shallow monitoring wells at each spring site based on the range variability since 2015 has been added as trigger for stopping the test.*

*For VDA locations, a review of literature indicates the resilience of desert vegetation such that lowering of groundwater level by several meters for multiple years will not cause mortality of these type plants. Therefore, a lowering of only one foot during the six-month operational test is a very conservative trigger to protect habitat at VDA. Additionally, it is important to note that the plan is to conduct the proposed operational test during the dust season, which generally corresponds with non-growing season, when plants are dormant and do not need much water. Assuming that plants on VDAs depend on precipitation and groundwater, the proposed operational test will occur during the rainy season and potential lack of access to groundwater supply would be compensated by precipitation. Finally, even with a drop of groundwater level, vegetation roots will still have access to moisture due to capillary action of the soil during the operational test period.*

Mr. Kiddoo  
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November 2, 2020

*For the reasons stated above, we believe the trigger levels are conservative and fully protective of the environment. That being said, we are open to discussing even more conservative trigger levels and/or locations with your agency and other stakeholders that are based on a clear and reasonable rationale for each resource to be protected (VDAs, springs, and/or non-LADWP wells).*

12. Vegetation Monitoring – Potential impacts to vegetation need to be monitored and included in the proposed test.

*The proposed operational test of TW-E will occur during the dust season, when the plants are dormant; therefore, evapotranspiration and vegetation water demand is minimal. As described in the updated testing plan, vegetation monitoring will occur before and after the pumping phase of the test to allow for the determination of any relationship between pumping deeper aquifers and vegetation health. Analysis of vegetation monitoring data as part of the operational test will assist in developing a more robust vegetation monitoring program for long-term monitoring as part of Hydrologic Monitoring, Management, and Mitigation Plan for the OLGDP.*

Again, I would like to thank GBUAPCD for their active participation in this operational test by reviewing and providing comments to the testing plan. Based on the input received, the testing plan has been updated. We look forward to working with your agency to ensure that groundwater production does not cause increased dust emissions from the vicinity of Owens Lake.

The updated testing plan is uploaded to the OLGDP web page ([www.ladwp.com/olg](http://www.ladwp.com/olg)) and will be used as the basis for the preparation of the environmental documentation for the proposed operational test. The process of adopting a Negative Declaration will provide an additional opportunity for the stakeholders to provide comments and input on the testing plan for the six-month operational test of TW-E.

If you have any additional comments, questions, or concerns, please contact Dr. Saeed Jorat at (213) 367-1119.

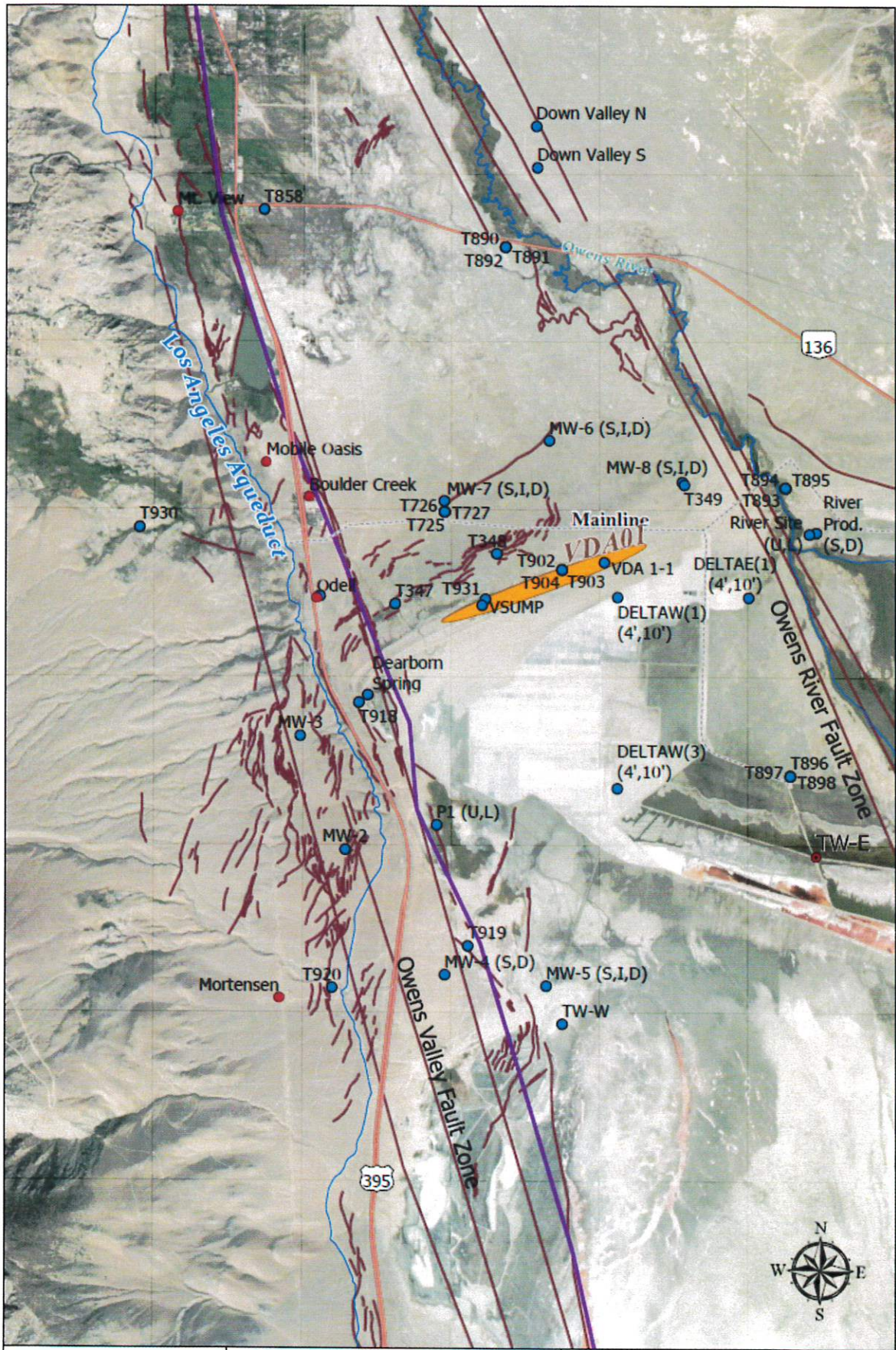
Sincerely,



Anselmo G. Collins  
Director of Water Operations Division

SMJ:mt  
Attachment

c: Mr. Nelson O. Mejia  
Dr. Saeed M. Jorat



**Testing Well TW-E  
Northwest Owens  
Lake Fault Lines**

- Testing Well
- Private Wells
- Monitoring Well
- ..... Mainline
- Fault Traces
- Vegetated Dune Areas
- Monitoring Well
- Main (OVFZ) Splay

