

Resolution 2016-04
of the
Fox Canyon Groundwater Management Agency

CONCERNING
ADJUSTMENTS TO EXTRACTION ALLOCATION FOR THE CITY OF CAMARILLO
REGARDING SPECIAL USE OF MOUNDED, DEGRADED WATER IN THE NORTH EASTERN
PORTION OF THE PLEASANT VALLEY BASIN

WHEREAS, the Fox Canyon Groundwater Management Agency ("Agency") was established to preserve the integrity of the quality and quantity of groundwater resources within its boundaries and manage the groundwater resources for the common benefit of the public and all agricultural, municipal and industrial users; and

WHEREAS, the Agency exercises its regulatory authority through ordinances, resolutions, and implementation of its adopted groundwater management plan; and

WHEREAS, the Sustainability Groundwater Management Act (SGMA) requires groundwater basins within California be sustainably managed; and

WHEREAS, the Agency is a groundwater sustainability agency (GSA) under SGMA for the portion of all groundwater basins within the Agency's boundary; and

WHEREAS, the current groundwater management plan ("Management Plan") was updated and adopted in May 2007. The Management Plan provides an extensive evaluation of the varying conditions in aquifers within the Agency and an assessment of the water management strategies that various entities propose for implementation within the Agency; and

WHEREAS, the Management Plan finds that the South and East Las Posas Basins and northern Pleasant Valley Basin are subject to continuing groundwater quality degradation and rising groundwater levels as a result of the large volume of poor quality water originating outside Agency boundaries and flowing into and recharging these basins; and

WHEREAS, the Management Plan identifies the development of a brackish groundwater desalination project as a strategy for improving groundwater quality in the Pleasant Valley Basin; and

WHEREAS, the Management Plan also finds that the area south of Highway 101 in the Pleasant Valley Basin is subject to significant water level decline and degraded water quality because of continued over-pumping and saline intrusion from surrounding sediments; and

WHEREAS, the City of Camarillo ("City") proposes to construct a groundwater desalter in the north eastern portion of the Pleasant Valley Basin in an area of significant groundwater quality degradation ("Desalter Project") as a groundwater remediation project; and

WHEREAS, the Desalter Project will have a 25-year life expectancy, after which it is anticipated that groundwater levels in the Pleasant Valley groundwater basin will be at conditions prior to the brackish water entering the basin, and will be allowed to recover to sustainable conditions; and

WHEREAS, the City on June 10, 2015, adopted a Final Environmental Impact Report (FEIR) for the Desalter Project; and

WHEREAS, the City on June 20, 2016, adopted a Supplemental Environmental Impact Report (SEIR), for the Desalter Project, and

WHEREAS, pursuant to the Agency Ordinance Code, the Agency Board of Directors has the authority to approve adjustment to the City's groundwater pumping allocation to support the operation of the Desalter Project and may impose conditions on the approval as may be appropriate to ensure that there is no net detriment to the aquifer systems; and

WHEREAS, the Agency has considered the environmental effects of the Desalter Project as shown in the FEIR (June 2015) and SEIR (June 2016) and made the findings required by California Environmental Quality Act Guidelines section 15091.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND RESOLVED AS FOLLOWS:

The Agency authorizes the Desalter Project as proposed by the City subject to the conditions described below.

1. The City is authorized to extract a maximum of 4,500 acre-feet per year (AFY) for operation of the Desalter Project, without incurring surcharges or penalties for exceeding its groundwater allocation.
2. The City will report all groundwater extractions to the Agency on semi-annual extraction reports, along with a summary of the volume of groundwater extracted by well and water classification (as project-related or other).
3. Groundwater extracted and treated by the Desalter Project shall not be exported outside of the Agency either directly or indirectly, and shall be provided exclusively to City water customers within its service area which is located within the Pleasant Valley Basin.
4. The City has provided a Monitoring and Contingency Plan (included as Attachment No. 1) for the proposed groundwater pumping allowed pursuant to this Resolution. The Monitoring and Contingency Plan shall be revised by the City in accordance with Sections 5 of this Resolution, and approved by the Agency no later than six (6) months from the date of adoption of this Resolution.
5. The Monitoring and Contingency Plan shall be revised (Revised Plan) to add the following:
 - a. The State Well Numbers for all wells that are included in the groundwater level and water quality monitoring programs along with depth of well, screened interval(s) and name of aquifer being monitored.
 - b. Surface water monitoring and measuring station(s) locations and station number (or identification name), for water leaving the East Las Posas Basin and entering the Pleasant Valley Basin.
 - c. The quantity of subsurface inflow entering the Pleasant Valley Basin.
 - d. A description of groundwater monitoring program consisting of water level and water quality monitoring that is designed to detect ongoing conditions and delineate the vertical and lateral extent of the brackish groundwater plume within the Pleasant Valley Basin. Water level and quality data shall be collected on an ongoing basis for use to assess basin conditions and provide for the ongoing use for any future regional groundwater model in evaluating basin conditions.

- e. Identification of the lateral monitoring well, to the east of the City's extraction well field in the vicinity of the Arroyo Las Posas, to be included in the monitoring program.
6. Prior to operation of the Desalter Project, the City will drill and complete all monitoring wells associated with this project, implement the Revised Plan, and submit baseline monitoring data to the Agency.
7. Operational Triggers
- a. Water Level: The City shall reduce Desalter Project extractions when static water levels reach the depth in feet below sea level at well State Well No. 02N20W19M06S, or 02N20W19E01S as indicated in the Table below.

Measured Static Groundwater Elevation (ft msl) at 19E01 or 19M06	Pumping Reduction (%)
-126	10
-140	20
-150	30
-153	40
-157	50
-160	75
-168	100

- b. Water Quality: As more fully discussed in the Monitoring and Contingency Plan, if groundwater quality monitoring discloses extended pumping of non-brackish groundwater then the City's operations of the Desalter would no longer be eligible for the pumping authorization granted by this Resolution.

For purposes of defining non-brackish groundwater manganese is considered the most reliable constituent to use as an index of fresh and brackish water, at a threshold of 50 ug/L. Using this threshold, pumped groundwater with manganese concentrations above 50 ug/L¹ would be considered brackish water and its removal beneficial to the aquifers. Concentrations below that level would be considered fresh water pumping and debited against the City's extraction allocation. Water quality triggers for the project as groundwater quality improves will be as follows:

¹ Combined monthly weighted average based on analytical results for groundwater samples collected from project extraction facilities during subject month and quantity of groundwater extracted from each well sampled during subject month.

Contingency	Project well pumping brackish water has Manganese drop below 50 ug/L ¹	Project well pumping fresh water has Manganese increase to above 50 ug/L ¹
Action	Begin one year verification period	Begin one year verification period
Considered Fresh Water	Monthly testing remains 50 ug/L for Manganese during verification period	Any monthly test is below 50 ug/L Manganese
Add'l Evaluation	Evaluate whether regional conditions contributed to drop	Evaluate whether regional conditions contributed to increase
Considered Brackish Water	Any monthly test exceeds 50 ug/L Manganese	Monthly tests remain above 50 ug/L Manganese for verification period
Termination of Action	One year of pumping below 50 ug/L Manganese (reverts to fresh water) or any monthly test greater than 50 ug/L Manganese (remains brackish water)	One year of pumping above 50 ug/L Manganese (reverts to brackish water) or any test less than 50 ug/L Manganese (remains fresh water)
FCGMA Allocation	Project specific allocation	Prorated use of City's allocation*
Sunset Provision	If well pumps fresh water for 24 consecutive months, well permanently reverts to fresh water status	

- c. Subsidence: In order to minimize subsidence caused by the project, the City will monitor for impacts related to subsidence in the following manner.
- (1) The subsidence monitoring will occur in the project area by survey (traditional survey or LIDAR) every five (5) years to detect possible changes in elevation related to subsidence.
 - (2) Subsidence will be measured at the project extraction well sites.
 - (3) If the subsidence is five inches or more in elevation (as part of routine five year monitoring program) from that detected prior to project operation, then the City will implement the following actions:
 - (a) Annual survey monitoring; and
 - (b) Reduce pumping by 10%
 - (4) The procedures during the annual survey monitoring will be as follows;
 - (a) For each year that the subsidence is greater than one inch the City will reduce pumping by 5%.
 - (b) If subsidence is less than one inch per year for two consecutive years, then the City may increase pumping up to the maximum pumping level as originally authorized by this Resolution.
- d. Seawater Intrusion Gradient Reversal: The following contingency measure is designed to maintain the seaward groundwater gradient between the project and the pumping depression located along the southern and western edge of the basin. To calculate the gradient, two sets of nested monitoring wells were selected – one an existing USGS monitoring well (02N21W34G02S through 05S) and the other a new nested monitoring well to be constructed as part of this project (project Monitoring Well at location B, near City Hall, with one nested well screened in the Hueneme Aquifer and the other nested well screened in the Fox Canyon Aquifer). The aquifer zones being monitored at each nested monitoring

well site are to be in hydraulic communication. The gradient between the two nested monitoring well sites in fall 2013² was southwestward with a hydraulic head difference of 85 feet over a distance of approximately one (1) mile. When static (non-pumping) groundwater elevations decrease to 15 feet or less between the two wells (elevation in Monitoring Well B minus elevation in 34G equivalent nested monitoring well), automatic cutbacks in project pumping would be implemented and the FCGMA would be informed of the trigger exceedance. The mitigation would be that project pumping would be reduced by 10%. If this action does not mitigate the problem, then pumping would be reduced an additional percentage based on the following table. This step-wise reduction would continue as shown in the table below until either the difference in groundwater elevations stabilizes or project production has been eliminated.

Groundwater Elevation Difference Between Monitoring Wells B (ft) and 34G02 through 05 (ft) (Elev B minus Elev of correlative unit in monitoring wells 34G02 through 05)	Percent Pumping Reduction (%)
15	10%
10	20%
7	30%
4	40%
2	50%
0 or negative	100%

The opposite would occur if the difference in groundwater elevations between the two wells increases. For each step-wise increase in the difference, a corresponding increase in project pumping would occur. When the difference in groundwater elevations returns to above 15 feet, full project production would resume.

8. Annual Report: An Annual Report shall be prepared summarizing data collected each calendar year and submitted to FCGMA and interested parties by April 1. The Annual Report shall include the following information:
 - a. A summary of project monthly groundwater extraction by well, treatment, and disposal (brineline) volumes, as well as volume of treated water delivered to City of Camarillo customers.

² Per report prepared by Bachman in May 2016, titled "Northern Pleasant Valley Desalter Groundwater Analysis and Modeling".

- b. Groundwater elevation³ and water quality data⁴ obtained from extraction wells, monitoring wells, wells near project area, the regional monitoring well, as well as analyses and conclusions formed from the analyses. A discussion regarding the health of the basin and region, and regional water quality and water quality trends will be included, and recommendations for future operations and monitoring.
- c. Vertical and lateral delineation of the brackish water plume as well as a summary of observed changes in the location and elevation of the brackish water plume, using information obtained from the extraction wells and monitoring wells.
- d. Summary of basin recharge from the East Las Posas Basin including results and supporting documentation for surface water and baseflow monitoring programs, along with calculated surface flow and groundwater inflow from the East Las Posas Basin
- e. Subsidence monitoring including results of any regional land survey program.
- f. Regional maps of groundwater elevation contours to document any effects of the project on the wider Pleasant Valley Basin.
- g. Summary of any contingency measures implemented and observed effect on groundwater elevations.

In addition to the annual reporting, the FCGMA shall be notified within one month of any unexpected or critical results from project monitoring. Examples of such results include rapidly dropping water levels, approach of target groundwater elevations, and unexpected water quality analyses.

- 9. For the purpose of determining net impacts to the basin as a result of Desalter Project operation, the Agency and City shall meet during the first week of May annually to review the contents of the Annual Report and its conclusion.
- 10. The City shall implement conservation and best management practices consistent with those required of member agencies of the Metropolitan Water District of Southern California and the California Urban Water Conservation Council, and its Urban Water Management Plan.
- 11. All reports shall be signed by California Licensed Professional Geologist(s) or Engineer(s).
- 12. All water quality testing shall be performed by an analytical laboratory certified by the State of California to perform such tests.
- 13. [This paragraph is effective through at least September 28, 2018] The Agency Board may reconsider and modify this Resolution and/or the Revised Plan only under the following circumstances:
 - a. to make this Resolution consistent with provisions of a Groundwater Sustainability Plan or update thereof that has been approved by the Agency Board; or

³ Including monitoring point, date measured, depth to water level and elevation of reference point, and method used to measure water level.

⁴ Including State Well Number of well sampled, date of sample collection, date of sample analyses, Lab that conducted analyses, analytical test results presented in table format with laboratory test reports appended.

- b. upon a finding by the Agency Board after a public hearing that the implementation of this Resolution is having a detrimental impact on water resources in the Pleasant Valley Basin.

The Agency shall provide a minimum of six months advance notice before implementing any material modification to this Resolution or any change resulting in the permanent reduction in the permitted rate, or cessation, of brackish groundwater pumping in the operation of the Desalter Project. For purposes of this Section 13, a "material modification" is defined to mean a change in Section 1 of this Resolution to decrease the maximum allowed pumping for operation of the Desalter Project or a change in Section 14 to reduce the term of this Resolution below twenty-five (25) years.

[If a Groundwater Sustainability Plan ("GSP") has not been adopted by the Agency by September 28, 2018, then the provisions of this paragraph, as set forth above, shall become null and void and shall be replaced by the following:]

The Agency Board may reconsider and modify this Resolution and/or the Revised Plan only under one or more of the following circumstances:

- a. When a material modification is required due to a change in state and/or federal law. The Agency shall provide a minimum of 45 days advance written notice to the City, or such other notice period as may be required by law, whichever is less, before approving any material modification to this Resolution based upon a change in state and or federal law, or
- b. Upon a finding by the Agency Board after a public hearing ("Public Hearing") that (i) the implementation of this Resolution is having a detrimental impact on water resources in the Pleasant Valley Basin ("Detrimental Impact") absent a reasonable mitigation measure as provided in this Section 13, or (ii) that the Agency is unable to sustainably manage the Pleasant Valley Basin without modifying this Resolution.
 - (1) For purposes of this provision: (a) a Detrimental Impact means a significant degradation of groundwater resources substantially caused by the Desalter Project and is an unforeseen impact that is not addressed in the Revised Plan, and (b) "unable to sustainably manage" means that continued operation of the Desalter Project will prevent the Agency from achieving the sustainability goal within 20 years of the implementation of a groundwater sustainability plan.
 - (2) The Agency shall provide a minimum of six months advance written notice ("Notice") to the City before approving any material modification to this Resolution due to a Detrimental Impact. Any material modification based on groundwater sustainability shall comply with the notice and consultation process specified in California Water Code section 10728.4.
 - (3) If the City does not present to the Agency a reasonable mitigation measure to adequately address the Detrimental Impact identified in the Notice within 120 days of receipt by the City of the Notice, then the Agency may approve a material modification of this Resolution at the Public Hearing to mitigate the identified Detrimental Impact.
 - (4) At the Public Hearing, the City will have the reasonable opportunity to present evidence in support of the mitigation measure proposed by the City to address the Detrimental Impact.

For purposes of this Section 13, a "material modification" is defined to mean either a change in this Resolution to temporarily or permanently decrease the maximum allowed pumping for operation of the Desalter Project or a change to reduce the term of this Resolution below twenty-five (25) years or any change in the operational triggers set forth in the Revised Plan.

14. This Resolution and authorization will terminate twenty five (25) years from the 1st day of operation of the Desalter Project. Prior to the termination date, and upon written application by the City, the Agency may extend the term of this Resolution in five (5) year increments, provided that all conditions of this Resolution have been complied with and the operation of the Desalter Project remains consistent with the provisions of a Groundwater Sustainability Plan and any update thereof that has been approved by the Agency Board.

On motion by Director Bennett, seconded by Director West, the foregoing resolution was passed and adopted on the 28th day of September 2016.

By: 

Lynn Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2016-04.

By: 

Tammy Butterworth, Deputy Clerk of the Board

Attachment No. 1 – Monitoring and Contingency Plan