



April 8, 2018

Bruce Kuebler
Upper Ventura River Basin Groundwater Agency
PO Box 1779
Ojai, California 93024

**Re: *Proposed Professional Hydrogeologic Services
Monthly Ventura River Flow Measurements UVRGA Task 2.6***

Greetings Chair Kuebler:

Per our discussions and your request, Kear Groundwater (KG) has prepared this brief proposal to conduct surface water flow monitoring at key locations along the Ventura River. This proposal is prepared to meet the intent of Grant Subtask 2.6, summarized below.

Surface flow is measured near the top of the basin upstream of the dry reach, on San Antonio Creek upstream of the confluence, and just outside the basin downstream of the wet reach. Flow data are insufficient in the transition zone between wet and dry reaches with which to fully understand surface water-groundwater interactions and correlate surface flow with water table changes.

This data gap will be filled by measuring river flow at a location close to the wet reach's monitoring well. Flow will be measured by identifying a suitable cross-section, creating a profile of the river bottom to obtain cross-sectional area, and using a propeller meter for velocity. The first measurements were taken in September 2017 and will continue through 2019. The site will likely become part of the UVGSA's ongoing, long-term monitoring. After the first water year, the collected data will inform the development of Chapter 2 and the hydrogeologic conceptual model. Filling this data gap will help develop the hydrogeologic conceptual model and improve calibration of SWRCB's model.

Deliverables for this task will be wet reach surface flow annual reports, including draft submittals for comment prior to finalizing by January 1 of the following year.

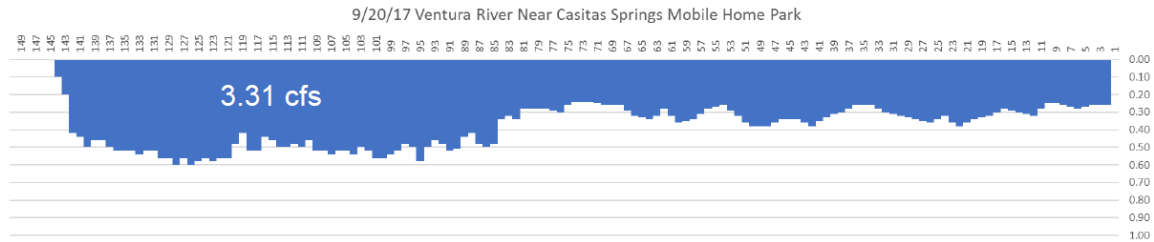
Task 2.6a - Monthly flow measurements:

Similar to what we have done on September 20 and October 20, 2017, KG will obtain 1) depth to water in the Casitas Mobile Home park well, 2) surface water flow at the measurable portion at Latitude 34.3721° N (approximately). By the last day of each month, KG will submit an excel spreadsheet with the data and the measured surface flow (e.g., USGS Casitas Vista and our measurements) and groundwater depth at the Mobile

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home park well. For budgeting purposes, it is assumed KG will provide a summary presentation to the Board every six months.



Our flow measurements will be made along a measured transect of the stream perpendicular to flow direction, at typically 0.1-ft lateral intervals measuring depth to the nearest 0.05-foot and velocity to the nearest 0.2-ft/sec using our Global Probe hand-held digital flow meter. Average velocities at each measured point will be used in calculations. These methods generally follow the USGS techniques for current-meter measurements for data collected while wading.

Note that when surface flow is continuous across the basin, KG will measure flow near Santa Ana Road Bridge and/or Highway 150 bridge (as safely feasible) and compare to the Camino Cielo Bridge and Casitas Vista Bridge flow monitoring points.

Task 2.6b - Reporting

KG personnel will incorporate data collection, data review and incorporation into ongoing dataset and presentation. For each water year, KG will prepare a "Wet REach Surface Flow Annual Report" that describes the snapshot flow measurements, Annual reports will be submitted in draft form following the end of the water year (September 30) 2018 and 2019 and finalized before January 1, 2019 and 2020, respectively.



ESTIMATED FEE FOR TASK 2.6 PROFESSIONAL SERVICE IS AS FOLLOWS:

Task 2.6a: Monthly Flow Measurements: \$12,000
(\$600/month for 20 months
[2 hours principal time at \$200/hour and 2 hours staff time at \$100/hour]):

Task 2.6b: Report preparation: \$3,400
(5 hours principal at \$200/hour and 24 hours staff time at \$100/hour)

Total, all Tasks: \$15,400

Best Regards,

A handwritten signature in black ink, appearing to read 'Jordan Kear'.

Jordan Kear
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