

**AMENDMENT TO AGREEMENT
BETWEEN THE COUNTY OF SAN MATEO AND ERLER & KALINOWSKI, INC.**

THIS AMENDMENT TO THE AGREEMENT, entered into this 14th day of February, 2017, by and between the COUNTY OF SAN MATEO, hereinafter called "County," and Erler & Kalinowski, Inc., hereinafter called "Contractor";

W I T N E S S E T H:

WHEREAS, pursuant to Government Code, Section 31000, County may contract with independent contractors for the furnishing of such services to or for County or any Department thereof;

WHEREAS, the parties entered into an Agreement for groundwater sub-basin assessment services on April 12, 2016; and

WHEREAS, the parties wish to amend the Agreement, adding \$123,900 for a new total not to exceed amount of \$800,000, and updating the scope of services under Phase 2.

NOW, THEREFORE, IT IS HEREBY AGREED BY THE PARTIES HERETO AS FOLLOWS:

1. Section 3 of the agreement is amended to read as follows:

In consideration of the services provided by Contractor in accordance with all terms, conditions, and specifications set forth in this Agreement and in Exhibit A, County shall make payment to Contractor based on the rates and in the manner specified in Exhibit B. County reserves the right to withhold payment if County determines that the quantity or quality of the work performed is unacceptable. In no event shall County's total fiscal obligation under this Agreement exceed eight hundred thousand dollars (\$800,000). In the event that the County makes any advance payments, Contractor agrees to refund any amounts in excess of the amount owed by the County at the time of contract termination or expiration. Contractor will invoice County at the end of each billing period. Payment in full must be received by Contractor within thirty (30) days of the date of such invoice.

Contractor shall attain written approval from County to complete each task in Phase 2 prior to beginning work. County reserves the right to eliminate work scope in Phase 2 with written 30 day notice to Contractor.

3. Original Exhibit A, Phase 2, Tasks 8 through 10 is replaced with the following Revised Exhibit A, Phase 2, Tasks 8 through 10, (rev. 2/14/17).

Task 8 - Fill Selected Data Gaps

- Contractor shall develop a list of existing data gaps and potential field efforts with corresponding cost-estimates that could be pursued to fill them. Contractor shall develop

a detailed plan to implement the most appropriate, cost-effective and high value-added actions.

- Contractor shall define the objectives of monitoring and, working with County, establish a list of target monitoring well locations, develop monitoring schedules and protocols for water level and water quality monitoring, conduct site walks, and develop well monitoring data collection forms.
- Contractor shall conduct one (1) streamflow and electrical conductivity (EC) monitoring event along one or more of the following creeks: Laurel, San Mateo, Cordilleras, and San Francisquito.
- Contractor shall evaluate any additional existing data obtained from wastewater treatment plants (WWTP) meetings and reports, and develop a work plan for additional data collection with WWTP staff.
- Contractor shall incorporate all additional Phase 1 data received from July 2016 through December 2016 into the project database.

Task 9 - Update Database

- Contractor shall incorporate information gathered from the above tasks into the project database, including data provided by County from pre-Geotracker and remediation sites and, to the extent applicable, data from the groundwater monitoring program, aquifer pump tests, streamflow and conductivity data, shallow groundwater interaction with sewer collection systems, and data obtained regarding Bay Mud effective conductivity.
- Utilizing the database framework and QA/QC protocols, all new information shall be added to the project database/GIS. Data additions shall be documented in an appendix to the draft Technical Memorandum #5 ("TM#5").

Task 10 - Update and Refine Hydrogeologic Conceptual and Numerical Models

- Contractor shall improve the existing hydrogeologic conceptual and water balance models with updated information in the project database from above task to better define subsurface flow along basin boundaries.
- Contractor shall analyze information gained from filling data gaps. Depending on the selected efforts, these may involve preparation of a current groundwater level map, groundwater quality map, or detailed hydrographs of groundwater levels and/or stream flows. The conceptual model and water balance shall be refined as needed to reflect the new information. Conceptual model and water balance refinements shall be documented in the TM#5.
- Update and Refine Numerical Model
 - Based on new data, the updated SGM shall be re-calibrated. In addition, the model's reliability and usefulness shall be enhanced by including the capability of simulating transient groundwater-flow conditions.
 - Contractor shall confirm and, if necessary, update the spatial distribution of hydraulic conductivity following any modifications to the recharge and pumpage

data sets. The spatial distribution of storage coefficients shall then be calibrated using a multi-year (transient) historical data record that shall represent changing hydrologic conditions over multiple years and hydrologic conditions (wet, dry and normal). Additionally, the historical simulation period shall reasonably represent long-term average rainfall conditions, (including wet and dry years) and represent current pumping and land use conditions.

- Contractor shall assess model calibration by comparing measured and model-calculated water levels in wells, updated volumetric fluxes. The most sensitive model inputs and their associated uncertainty shall be identified as part of the calibration assessment.
- Additionally, given that land surface subsidence as a result of groundwater extractions is a concern in the basin the simulation of subsidence shall be included as part of the updated SGM.
- Model refinements shall be documented in the TM#5.
- Update Governance / Management Options:
 - Contractor shall build upon cooperative efforts to further engage Basin stakeholders in discussions regarding Basin governance and management options. Further refinements, including potential template Basin Management Agreements (i.e., GSA JPA or MOU Agreements) shall be presented in TM#5.
- Prepare Technical Memorandum #5: Phase 2 Results:
 - Contractor shall synthesize refinements developed in Phase 2 into a draft TM#5 that will be submitted in electronic format to the County and key stakeholders for review. It is anticipated that TM#5 will largely be a revision to selected chapters of the Phase I Report that describe the project database, the hydrogeologic conceptual and numerical models, and the preliminary governance/management options assessment.
 - As a cost savings measure, a final TM#5 will not be prepared. Rather, the suggested revisions to the draft TM#5 will be incorporated into the basin assessment report.
- Stakeholder and Outreach Activities:
 - Provide Project Management, progress update meetings, and coordination and communications with County staff, general consultation and technical project management services.
 - Attend and facilitate up to two public workshops and provide content for the Project website.

4. All other terms and conditions of the agreement dated 4/12/16, between the County and Contractor shall remain in full force and effect.

In witness of and in agreement with this Agreement's terms, the parties, by their duly authorized representatives, affix their respective signatures:

For Contractor: Erler & Kalinowski, Inc.,



Contractor Signature

7 February 2017
Date

Anona Dutton
Contractor Name (please print)

COUNTY OF SAN MATEO

By:
President, Board of Supervisors, San Mateo County

Date:

ATTEST:

By:
Clerk of Said Board