

Name of Project: **Cache Slough Water Quality Monitoring**

SOLANO COUNTY WATER AGENCY

AGREEMENT FOR PROFESSIONAL SERVICES (Professional Services/Contractor)

THIS AGREEMENT, **effective July 1, 2022**, is between SOLANO COUNTY WATER AGENCY, a public agency existing under and by virtue of Chapter 573 of the 1989 statutes of the State of California, hereinafter referred to as "Agency," and **Terraphase Engineering Inc.**, hereinafter referred to as "Contractor."

The Agency requires services for **Cache Slough Water Quality Monitoring**; and the Contractor is willing to perform these services pursuant to the terms and conditions set out in this Agreement.

IT IS MUTUALLY AGREED, as follows:

1. SCOPE OF SERVICES

The Agency hereby engages the Contractor, and the Contractor agrees to perform the services for **Cache Slough Water Quality Monitoring**, as described in Exhibit A, in accordance with the terms of this Agreement and any applicable laws, codes, ordinances, rules or regulations. In case of conflict between any part of this Agreement, this Agreement shall control over any Exhibit.

2. COMPENSATION

Compensation for services shall be as follows: Hourly rate of personnel plus any allowed reimbursable expenses based on unit costs as indicated on any allowed reimbursable expense in Exhibit B **not to exceed \$58,000** for all work contemplated by this Agreement.

3. METHOD OF PAYMENT

Payment for services will be approved by the Agency's representative only if all contract requirements have been met.

Invoices must be submitted monthly, and upon approval of the Agency's representative, the Agency shall pay the Contractor monthly in arrears for fees and allowed expenses incurred the prior month. Invoices that are over 6 months old will not be approved or paid by the Agency. **In no event shall the cumulative total paid pursuant to this agreement exceed the maximum amount provided for in paragraph 2 of this Agreement.**

Every invoice shall specify hours worked for each task identified in Exhibit A undertaken. To be approved by payment, any allowed reimbursable expenses will need supporting written documentation such as receipts and mileage logs.

Each invoice shall be accompanied by a spreadsheet showing, by month, costs incurred to date for the project broken down by the Tasks identified in Exhibit A. The spreadsheet shall show, for each task, budget amounts, total expended and remaining amounts. The spreadsheet shall show a subtotal for each fiscal year covered by the contract. Any amendments to the contract shall be listed and incorporated into spreadsheet. An example of a typical spreadsheet shall be provided by the Agency.

4. **TIME OF PERFORMANCE**

This Agreement shall become effective as of the date it is executed and said services will take place between this date and **June 30, 2023** as directed by the Agency.

5. **MODIFICATION AND TERMINATION**

This Agreement may be modified or amended only by written instrument signed by the parties hereto, and the Contractor's compensation and time of performance of this Agreement shall be adjusted if they are materially affected by such modification or amendment.

This Agreement may be terminated by the Agency at any time, without cause, upon written notification to the Contractor. The Contractor may terminate this Agreement upon 30 days written notice to Agency.

Following termination by the Agency or the Contractor, the Contractor shall be reimbursed for all expenditures made in good faith in accordance with the terms of this Agreement that are unpaid at the time of termination.

6. **INDEMNIFY AND HOLD HARMLESS**

To the extent permitted by law, Contractor shall hold harmless, defend at its own expense, and indemnify Solano County Water Agency, its directors, officers, employees, and authorized volunteers, against any and all liability, claims, losses, damages, or expenses, including reasonable attorney's fees and costs, arising from all acts or omissions of Contractor or its officers, agents, or employees in rendering services under this contract; excluding, however, such liability, claims, losses, damages or expenses arising Solano County Water Agency's sole negligence or willful acts.

7. **INSURANCE**

Minimum Insurance Requirements: Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Contractor, his agents, representatives, employees or sub-contractors.

Coverage - Coverage shall be at least as broad as the following:

1. **Commercial General Liability (CGL)** - Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars (\$2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to Solano County Water Agency) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability** – (if necessary) Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if Contractor has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.
3. **Workers' Compensation Insurance** - as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or

disease. **Waiver of Subrogation:** The insurer(s) named above agree to waive all rights of subrogation against the Solano County Water Agency, its elected or appointed officers, officials, agents, authorized volunteers and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Agency; but this provision applies regardless of whether or not the Solano County Water Agency has received a waiver of subrogation from the insurer.

If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the Solano County Water Agency requires and shall be entitled to the broader coverage and/or higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Solano County Water Agency.

Other Required Provisions - The general liability policy must contain, or be endorsed to contain, the following provisions:

1. **Additional Insured Status:** Solano County Water Agency, its directors, officers, employees, and authorized volunteers are to be given insured status (at least as broad as ISO Form CG 20 10 01), with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations.
2. **Primary Coverage:** For any claims related to this project, the Contractor's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to the Solano County Water Agency, its directors, officers, employees and authorized volunteers. Any insurance or self-insurance maintained by the Solano County Water Agency its directors, officers, employees and authorized volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Solano County Water Agency.

Self-Insured Retentions - Self-insured retentions must be declared to and approved by the Solano County Water Agency. The Solano County Water Agency require the Contractor to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or Solano County Water Agency.

Acceptability of Insurers - Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII or as otherwise approved by Solano County Water Agency.

Verification of Coverage – Contractor shall furnish the Solano County Water Agency with certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Solano County Water Agency before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The Solano County Water Agency reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration pages and Endorsement pages.

Sub-contractors - Contractor shall require and verify that all sub-contractor maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that Solano County Water Agency its directors, officers, employees, and authorized volunteers are an additional insured are an additional insured on Commercial General Liability Coverage.

8. **COMPLIANCE WITH LAW**

The Contractor shall be subject to and comply with all federal, state and local laws and regulations applicable with respect to its performance under this Agreement, including but not limited to, licensing, employment and purchasing practices; and wages, hours and conditions of employment.

9. **RECORD RETENTION**

Except for materials and records, delivered to the Agency, the Contractor shall retain all materials and records prepared or obtained in the performance of this Agreement, including financial records, for a period of at least three years after the Contractor's receipt of the final payment under this Agreement. Upon request by the Agency, the Contractor shall make such materials and records available to the Agency at no additional charge and without restriction or limitation to State and federal governments at no additional charge.

10. **OWNERSHIP OF DOCUMENTS**

All materials and records of a finished nature, such as final plans, specifications, reports and maps, prepared or obtained in the performance of this Agreement, shall be delivered to and become the property of the Agency. All materials of a preliminary nature, such as survey notes, sketches, preliminary plans, computations and other data, prepared or obtained in the performance of this Agreement, shall be made available, upon request, to the Agency at no additional charge and without restriction or limitation on their use.

11. **SUBCONTRACT AND ASSIGNMENT**

This Agreement binds the heirs, successors, assigns and representatives of the Contractor. The Contractor shall not enter into subcontracts for any work contemplated under this Agreement and shall not assign this Agreement or monies due or to become due, without the prior written consent of the General Manager of the Agency or his designee, subject to any required state or federal approval.

12. **NONRENEWAL**

The Contractor understands and agrees that there is no representation, implication, or understanding that the services provided by the Contractor under this Agreement will be purchased by the Agency under a new agreement following expiration or termination of this Agreement, and waives all rights or claims to notice or hearing respecting any failure to continue purchase of all or any such services from the Contractor.

13. **NOTICE**

Any notice provided for herein are necessary to the performance of this Agreement and shall be given in writing by personal delivery or by prepaid first-class mail addressed as follows:

AGENCY

Roland Sanford, General Manager
Solano County Water Agency
810 Vaca Valley Parkway, Suite 203
Vacaville, CA 95688

CONTRACTOR

Lucas Paz, Principal Hydrologist
Terraphase Engineering Inc.
1404 Franklin Street, Suite 600
Oakland, CA 94612

The parties have executed this Agreement the day and year first above written. If the Contractor is a corporation, documentation must be provided that the person signing below for the Contractor has the authority to do so.

Solano County Water Agency
a Public Agency

By: _____
Roland Sanford
General Manager

By: _____
Lucas Paz,
Principal Hydrologist

FOR SCWA USE ONLY

Contract Period: July 1, 2022 to June 30, 2023
File Number: AG-T-9
Account Manager: Justin Pascual
G/L Account #: 6165N
Job Cost #: 6113
Contract Type: Agreement for Professional Services

EXHIBIT A
SCOPE OF SERVICES

EXHIBIT B

RATE OF COMPENSATION



April 28, 2022

Mr. Justin Pascual
Assistant Water Resources Specialist
Solano County Water Agency
810 Vaca Valley Parkway, #203
Vacaville, CA 95688

sent via: email

Subject: Proposal for Cache Slough Watershed Stormwater Sampling and Associated Water Quality Monitoring Services for the 2022-2023 Sampling Season, Solano County Water Agency, Solano County, California

Dear Mr. Pascual:

Terraphase Engineering Inc. (Terraphase) is pleased to submit this proposal to provide professional services to conduct stormwater sampling and associated services to support the water quality monitoring program for 2022-2023 sampling season within the Cache Slough Watershed as directed by the Solano County Water Agency (SCWA). The following proposed scope of work is consistent with the ongoing water quality monitoring program and will support requested water quality data collection during the 2022-2023 rainy season as directed by SCWA. A description of the proposed activities is provided in the following paragraphs.

Scope of Work

This scope focuses on the objective of compiling relevant water quality data for the Cache Slough Watershed from existing stormwater discharge sources and continued collection of targeted surface water samples. The scope may also include potential refinements to the overall sampling approach, methodology and laboratory analytical procedures, as necessary. Sampling will continue at the six selected targeted monitoring locations within the Cache Slough contributing watershed areas based on previous monitoring efforts and based on input from SCWA and stakeholders in the watershed.

Task 1: Coordination, Project Status/Reporting Summaries and Preparation of Associated Outreach Material for SCWA and Cache Slough Watershed Group Stakeholders

Terraphase will coordinate directly with SCWA on an ongoing basis throughout the year in order to select and prepare for sampling of targeted storm monitoring events. Terraphase will also provide project status/reporting summaries and be available to participate in requested meetings with SCWA and local stakeholders (City of Vacaville, SID, Dixon, etc.) as needed in order to provide updates on the program efforts, results to date and in planning and coordination of the ongoing sampling activities.

Task 2: Review and Refinements to the Sampling Program

Based on previously compiled information, including summary of data gaps and associated analyses and evaluation of previous monitoring data, Terraphase assumes the sampling plan and analytical laboratory program may require minor revisions or updates. The final 2022-2023 sampling approach will be determined in cooperation with SCWA and/or the Cache Slough Watershed Group prior to implementation.

Task 3: Implementation and Documentation of 2022-2023 (Year 13) Water Quality Sampling

Implementation of the water quality sampling program will be conducted per the previously approved sampling plan including updated analytes established during prior sampling periods. Surface water sampling will be conducted at a minimum of six representative locations within the Cache Slough watershed as directed by SCWA. Terraphase will continue to update the cumulative sampling results database to compare and evaluate current and previous sampling event results.

- A. Document six representative monitoring sites (selected during design and planning stages) and coordinate/prepare for data collection. Document available ancillary data for each monitoring site.
- B. Collect data according to specified monitoring design and protocols. Coordinate with other agencies as appropriate. Surface water samples will be collected during and/or immediately following a projected 24-hour rain event of 0.5" magnitude or higher as directed by SCWA. Optionally, one set of dry season base flow samples may also be collected at representative sampling locations during the dry/irrigation season. Samples will be placed in appropriate sample containers, capped, labeled, and stored in a sample cooler that has been chilled to 4°C. The samples will be subsequently submitted to a State certified analytical laboratory. The results of these samples will be used to assess the current conditions in the targeted tributaries and associated contributing watershed areas.
- C. Review and oversight of data-collection activities to ensure that quality assurance protocols are followed. Review data-collection activities and preliminary sampling results to ensure data are complete and meet stated purposes.
- D. Evaluate final data and prepare result summaries. This task will include data review and evaluation relative to water quality screening criteria, preparation of summary tables, and database management including archiving of data so that accuracy and precision are maintained.

Potential surface water sampling sites within the local Cache Slough contributing watershed area will include upstream contributing locations for one or more of the following areas that represent local tributary inflows to Cache Slough:

- Upper Putah Creek
- Lower Putah Creek
- Upper Ulatis Creek
- Lower Ulatis Creek

- Alamo Creek
- Upstream of Shag Slough

Potential water quality sampling locations would preferably be located above tidal influence in order to better characterize the influence of the contributing areas and to avoid confounding influences associated with tidal mixing from the greater Cache Slough and Delta system. If samples are needed in locations subject to tidal influence the samples should be taken at the end of the ebb tide and sampling, if at all possible, should be avoided during flood tide conditions.

Proposed sampling sites may be modified in coordination with SCWA based on the need for safe, accessible, easily located sites that can be clearly identified by others using field descriptions. The sites should be representative of that part of the surface water of interest and have a clear hydrologic connection with the main mass of water, i.e., circulation should not be impeded by excessive vegetation, shallow water depth, or be in a restricted embayment. The presence and proximity to other tributaries will be considered so that adequate mixing is assured if sampling downstream of a tributary is conducted.

It is proposed that surface water samples will be collected at selected sampling sites during and/or immediately following a projected 24-hour rain event of 0.5" magnitude or higher as directed by SCWA. Optional dry season base flow samples may also be collected at representative sampling locations. At a minimum all samples collected would be analyzed for a selected subset of the following as determined by SCWA and other watershed stakeholders:

- pH
- total & dissolved metals (potential parameters include mercury, copper, boron and selenium)
- dissolved oxygen
- proprietary pesticides (pesticide analytes to include a subset of Pyrethroids)
- conductivity
- total suspended solids
- ammonia and/or nitrate
- organic carbon

In addition to the above-mentioned analytes, the following analytes were sampled for in the 2021-2022 sampling season and are proposed for the 2022-2023 sampling season as well.

- Total and dissolved metals (Antimony, Arsenic, Barium, Chromium, Cobalt, Copper, Lead, Molybdenum, Nickel, Vanadium, Zinc)
- Bacteria (E. Coli, fecal and total coliform)
- Chlorophyll-a

- Nitrate, Nitrite and Phosphorus
- Pesticides: Organochlorine Pesticides, Organophosphates, and Pyrethroids
- Potassium (K), NH4-N, Calcium, Alkalinity, Orthophosphate, TDS, TOC/DOC, PAHs

The final number of samples and target analytes will be determined in coordination with SCWA based on final data objectives and laboratory fees as the project budget permits. For example, laboratory analytical fees for Pyrethroid samples range from approximately \$450 to \$700 per sample.

Similar to previous sampling seasons, additional tests may be conducted for dissolved metals to compare results with total metals to provide an additional level of detail to characterize potential sources and contribution from particulate/sediment associated metals versus dissolved metal loading. Analysis for dissolved metals requires a maximum 24 hour hold time (for filtering) prior to delivery to the lab.

Surface water will be sampled and tested in accordance with Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), EPA Methods and Guidance for the Analysis of Water (U.S. Environmental Protection Agency, 1997) and USGS methods.

Task 4: Project Management

This task includes project and account management activities including ongoing communications and interaction with SCWA and analytical laboratory sub-contractors and equipment vendors. Dr. Lucas W. Paz will serve as the primary point-of-contact between SCWA and Terraphase. As part of this task Dr. Paz will coordinate with SCWA and provide ongoing project status and budget updates. We have assumed project duration of 12 months with a limited level-of-effort for client communication, monthly budget tracking updates, and general correspondence not specified in the technical tasks described above.

Cost Estimate

The scope of work described herein will be performed on a time-and-materials, not-to-exceed basis. Based on the information currently available, the estimated cost to complete the proposed scope of work is \$58,000. Terraphase will not exceed this authorization without prior written approval of the client and will submit a change order for additional work beyond the scope of this proposal, if needed.

The following table provides a summary breakdown by task.

TASKS	COST
Task 1: Project Coordination, Preparation of Project Status Summaries and Requested Material for SCWA and Cache Slough Watershed Group Stakeholders	\$6,000.00
Task 2: Review and Updates to the Sampling Program	\$6,000.00

Task 3: Implementation and Documentation of 2022-2023 Water Quality Sampling	\$40,000.00
Task 4: Project Management	\$6,000.00
TOTAL	\$58,000.00

Terraphase proposes to complete this work on a time-and-materials basis. We are offering a 15% discount on our standard 2022 labor rates. An updated rate sheet is provided as Attachment 1 to this proposal.

Closing

Terraphase is grateful for the opportunity to offer our services on this important program. If you have any questions or comments regarding this proposal, please contact Dr. Lucas Paz by phone (510-697-1238) or e-mail (lucas.paz@terrphase.com).

Sincerely,

For Terraphase Engineering Inc.



Lucas W. Paz, PhD, CPESC, QSD, QISP ToR
Principal Hydrologist

Attachments: 1 – 2022 Rate Sheet

This proposal is hereby accepted and duly authorized representative of the Client to which it is addressed:

Signature: _____

Printed Name: _____

Title: _____

Date: _____



2022 Standard Schedule of Charges with 15% Discount/10% ODC

Labor Classification	Standard Hourly Rate	Hourly Rate with 15% Discount
Principal Engineer/Scientist	\$264	\$224.40
Senior Associate Engineer/Scientist	\$244	\$207.40
Associate Engineer/Scientist	\$224	\$190.40
Senior Project Engineer/Scientist	\$211	\$179.35
Project Engineer/Scientist	\$198	\$168.30
Senior Staff Engineer/Scientist	\$179	\$152.15
Staff 2 Engineer/Scientist	\$151	\$128.35
Staff 1 Engineer/Scientist	\$124	\$105.40
Technician 2	\$121	\$102.85
Technician 1	\$84	\$71.40
GIS Technician 2	\$110	\$93.50
GIS Technician 1	\$89	\$75.65
Administrator	\$89	\$75.65

Labor Charges

All time will be recorded and charged to nearest 0.1 hour. Expert testimony at trials, hearings and depositions will be billed at 150% of the standard hourly rate. For each day when testimony is provided, a minimum of 8 hours will be billed. Preparatory time will be billed at standard rates.

Expenses

Subcontractor fees and other direct costs, such as air travel, project supplies and rental equipment, etc. will be itemized and billed at our cost plus a ten percent handling charge (standard handling charge is fifteen percent). Vehicle mileage when itemized is billed at the standard government rate in effect at the time of travel (www.gsa.gov/mileage).

Payment

Payment is to be made to Terraphase Engineering Inc. as follows:

Check Payments:	Wire/ACH Payments:
Terraphase Engineering Inc. P.O. Box 102399 Pasadena, CA 91189-2399	Terraphase Engineering Inc. JPMorgan Chase Bank Account Number 217693099 Routing Number 322271627

Payment is due within 30 days of receipt of invoice. A service charge of 1.5% per month or the allowable legal rate may be charged on amounts that are past due for more than 30 days.