

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
ACTION AGENDA SUMMARY

DEPT: Environmental Resources

BOARD AGENDA # B-7

Urgent

Routine

AGENDA DATE December 11, 2012

CEO Concur with Recommendation YES NO

4/5 Vote Required YES NO

(Information Attached)

SUBJECT:

Approval to Enter into a Master Agreement with Tetra Tech, BAS, Inc., for Professional Design Services at the Geer Road Landfill for Environmental Monitoring, Testing, and Reporting Services

STAFF RECOMMENDATIONS:

1. Authorize the Chair of the Board of Supervisors to sign the Master Agreement No. A101412 with Tetra Tech, BAS, Inc., for a not to exceed amount of \$3,079,446 for professional design services at the Geer Road Landfill through December 31, 2015.
2. Authorize the Director of Environmental Resources, or designee, to sign individual Project Authorizations during calendar years 2013-2015 providing that the cumulative total does not exceed the contract amount of \$3,079,446.
3. Authorize the Director of Environmental Resources, or designee, to sign amendments to the Master Agreement for an overall total not to exceed amount of \$3,541,363.
4. Direct the Auditor-Controller to increase appropriations and revenue as detailed in the attached Budget Journal.

FISCAL IMPACT:

Staff recommends increasing appropriations and revenue in the Geer Road Landfill Operating Budget by \$200,000 for Fiscal Year 2012-2013 to ensure there are sufficient appropriations for the year one services covered by this Agreement. Year one routine expenses are estimated to be \$918,149. The breakdown of the three-year contract costs is as follows: \$2,754,446 in basic services, \$225,000 for emergency and/or non-routine services, and \$100,000 for implementation of the new Report of Waste Discharge, for a three-year contract total of \$3,079,446. In addition, fifteen percent (15%), or \$461,917, in contract changes has also been included for an overall total not to exceed amount of (Continued on next page)

BOARD ACTION AS FOLLOWS:

No. 2012-601

On motion of Supervisor Monteith, Seconded by Supervisor Chiesa
and approved by the following vote,

Ayes: Supervisors: Chiesa, Withrow, Monteith, De Martini and Chairman O'Brien

Noes: Supervisors: None

Excused or Absent: Supervisors: None

Abstaining: Supervisor: None

1) Approved as recommended

2) Denied

3) Approved as amended

4) Other:

MOTION:

Christine Ferraro

ATTEST: CHRISTINE FERRARO TALLMAN, Clerk

File No.

Approval to Enter into a Master Agreement with Tetra Tech, BAS, Inc., for Professional Design Services at the Geer Road Landfill for Environmental Monitoring, Testing, and Reporting Services

FISCAL IMPACT (Continued):

\$3,541,363. Adequate appropriations will also be included in the Proposed Budgets for successive years to cover the expenses associated with this Master Agreement. The Geer Road Landfill Closure Fund is funded through annual transfers from the Fink Road Landfill Operating Budget in amounts specified in the Pledge of Revenues Agreements between Stanislaus County and the California Department of Resources, Recycling and Recovery.

DISCUSSION:

The Department of Environmental Resources (Department), Landfill Division, maintains and operates the Fink Road and Geer Road Landfills. Much of the maintenance at the Geer Road site is performed by in-house staff, however, specialized services and expertise are needed in the area of environmental monitoring, testing, analyzing, and reporting. For those specialized services, the Department has historically hired specialized outside expertise.

The Department, in partnership with the General Services Agency (GSA) issued a Request for Proposals (RFP) for environmental services for each Landfill on May 31, 2012. The RFP period closed on August 16, 2012, and the GSA Purchasing Division conducted the opening of the proposals on August 20, 2012. Four proposals were received for the Geer Road site, and five proposals were received for the Fink Road site, all of which were found to be complete and were forwarded to the Department for evaluation.

The RFP evaluation criteria for the Geer Road proposals encompassed the following five areas: The Proposer's Overall Response (25 points, maximum), Professional Qualifications (15 points), Past Involvement with Similar Projects (15 points), Successes with Sites that are/have been Under Corrective Action and Significant Enforcement Action (25 points), and Pricing (20 points). A total of three evaluators served on the interview panel that reviewed and analyzed the proposals, consisting of two members from the Department and one member representing an outside County Public Works Department. Tetra Tech BAS, Inc., one of two existing environmental consulting firms, was the highest scoring bidder for the Geer Road site out of the four responses that were received. The final scores were as follows:

Proposer	Final Score
Tetra Tech BAS	265
SCS Engineers	230
CH2MHILL	223
HerSchy Environmental	142

GSA Purchasing Division issued a letter of intent to award to Tetra Tech BAS, and contract terms have been agreed upon. The Master Agreement (Agreement) has been reviewed and approved by County Counsel and is included as Attachment A. The Agreement includes sufficient funds to cover the normal, routine items which are anticipated for a three-year period through December 31, 2015, in addition to emergency and/or non-routine maintenance which may become necessary, and \$100,000 for implementation of the new Report of Waste Discharge. Please note, however, that because there is an impending December 30, 2012,

Approval to Enter into a Master Agreement with Tetra Tech, BAS, Inc., for Professional Design Services at the Geer Road Landfill for Environmental Monitoring, Testing, and Reporting Services

due date for reports associated with the April 2011 Cease and Desist Order issued by the Regional Water Quality Control Board, which will include recommendations for additional corrective action measures for the site, staff anticipates that it may be necessary to return to the Board to amend the Master Agreement to cover the additional cost of those services.

The maximum not to exceed contract amount for the three-year period is \$3,079,446. Through the negotiation process, staff was able to negotiate a savings of \$74,232 over the three-year contract period. The Agreement allows the Board of Supervisors to consider up to two, one-year extensions to the Agreement at the conclusion of the calendar years 2015 and 2016 for a maximum contract length of December 31, 2017.

Tetra Tech BAS, Inc. was previously awarded a Master Agreement for Professional Design Services at the Geer Road Landfill to manage the landfill gas (LFG) system only. That contract was awarded on August 16, 2011, and extended through June 30, 2012, in the amount of \$667,955. On May 22, 2012, the contract was increased by \$421,959 to a not to exceed contract amount of \$1,089,914 to provide for the following: additional repairs and upgrades to the LFG system, project management associated with the repairs and upgrades, non-routine and/or emergency services, analytical/consultation services regarding the relationship of the LFG system to the underlying groundwater and the control of LFG migration, and the additional vadose zone well monitoring as requested by the Regional Water Quality Control Board. Finally, on June 26, 2012, the contract was increased by \$440,000 to extend these same services through December 31, 2012, for a cumulative total contract amount of \$1,529,914.

If the Board approves the award of this Agreement, Tetra Tech BAS will oversee both the LFG and groundwater extraction and treatment systems (GWETS) for the site for a total contract amount not to exceed \$3,541,363.

POLICY ISSUE:

The recommended actions are consistent with the Board's priorities of A Safe Community, A Healthy Community, A Well Planned Infrastructure System, and the Efficient Delivery of Public Services. Landfill services are critical to supporting the Department's mission to promote a safe and healthy environment and improve the quality of life in the community through a balance of science, education, partnerships and environmental regulation.

STAFFING IMPACTS:

Existing department staff will continue to oversee the work related to this Master Agreement.

CONTACT PERSON:

Jami Aggers, Interim Director of Environmental Resources Telephone: 209-525-6770

Database
Balance Type
Data Access Set

FMSDBPRD.CO.STANISLAUS.CA.US.PROD
Budget
County of Stanislaus

DO NOT CHANGE
DO NOT CHANGE
DO NOT CHANGE

Ledger
Budget
Category
Source
Currency
Period
Batch Name
Journal Name
Journal Description
Journal Reference
Organization
Chart Of Accounts

* List - Text County of Stanislaus
List - Text LEGAL BUDGET
* List - Text Budget - Upload
* List - Text DER SC
* List - Text USD
List - Text DEC-12
Text
Text DER SC JV20440 11/29/12
Text INCREASE APPROP AND REVENUE
Text 2012-2013
List - Text Stanislaus Budget Org
Accounting Flexfield

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ENTER AS MMM-YY (ALL CAPS FOR MMM) EX: NOV-11
DO NOT CHANGE
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Upl	Fund (4 char)	Org (7 char)	Account (5 char)	GL Project (7 char)	Location (6 char)	Misc. (6 char)	Other (5 char)	Debit incr appropriations decr est revenue * Number	Credit decr appropriations incr est revenue * Number	Line Description Text
	4031	0041200	63280	0000000	000000	000000	00000	200000		Increase approp
	4031	0041200	46600	0000000	000000	000000	00000		200000	Increase Revenue
	6016	0063100	85850	0000000	000000	000000	00000	200000		Transfer Geer Rd post Closure
								400000	200000	

Totals:
Tip: This is not the end of the Template. Unprotect the sheet and insert as many rows as needed.

Explanation: Revenue will be transferred from the Geer Road Post Closure Fund 6016

Requesting Department		Data Entry		Auditors Office Only	
Silvia Cruz	<i>M. E. Lopez</i> CEO Supervisor's Approval	SILVIA CRUZ		Prepared By <i>[Signature]</i>	Approved By <i>[Signature]</i>
Prepared by	Date	Keyed by	Date	Date	Date
11/29/2012	11/29/2012		11/29/2012	12-5-12	



DEPARTMENT OF ENVIRONMENTAL RESOURCES
3800 Cornucopia Way, Suite C, Modesto, CA 95358
Phone: (209) 525-6700
Fax: (209) 525-6773

PROFESSIONAL DESIGN SERVICES MASTER AGREEMENT

FOR

ENVIRONMENTAL MONITORING, TESTING, SAMPLING, AND REPORTING SERVICES AT GEER ROAD LANDFILL

January 1, 2013 to December 31, 2015

This Agreement is made and entered into by and between the County of Stanislaus, a political subdivision of the State of California, hereinafter referred to as "County" and Tetra Tech BAS, Inc., hereinafter referred to as "Consultant".

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions contained herein, the parties hereby agree as follows:

1.0 PROFESSIONAL SERVICES TO BE PROVIDED BY CONSULTANT

1.1. Scope of Services: Consultant shall provide the professional services described in the County's Request for Proposal ("RFP"), RFP Addendum, and RFP Interview Questions, attached hereto as Exhibit "A" and incorporated herein by reference and Consultant's Response to County's RFP (the "Response"). A copy of said Response is attached hereto as Exhibit "B" and incorporated herein by this reference. The Consultant shall furnish to the County upon receipt of the County's written authorization to proceed, those services and work set for the in the "Project Authorization – Scope of Work" separately approved for each project or task being provided by the Consultant, which Scope of Work are, by this reference made a part hereof. Each project added to and to be performed under this Agreement shall be separately approved by the parties. A Project Authorization issued by the Department of Environmental Resources Director shall approve each project where the cost of the Work or Services does not exceed the maximum "not to exceed" amount for this Master Agreement.

1.2. Professional Practices: All professional services to be provided by Consultant pursuant to this Agreement shall be provided by personnel experienced in their respective fields and in a manner consistent with the standards of care, diligence and skill ordinarily exercised by professional consultants in similar fields and circumstances in accordance with sound professional practices. Consultant also represents that it is familiar with all laws that may affect its performance of this Agreement and shall advise County of any changes in any laws that may affect Consultant's performance of this Agreement. Public Works of Improvement or Prevailing Wage Work shall not be performed by Consultant under this Agreement. Public Works of Improvement work is defined in Public Contract Code 22002 as construction, reconstruction, erection, installation of wells, trenching, excavating, alteration, renovation, improvement, upgrade, demolition and repair work involving any publicly owned, leased, or operated facility. "Public Project" does not include maintenance work described as follows: routine, recurring, and usual work for the preservation or protection of any publicly owned or publicly operated facility for its intended purposes.

1.3. Representations: Consultant represents that it has reviewed the RFP and that in its

professional judgment the services to be performed under this Agreement can be performed within the maximum fee set forth herein below and within the time specified in the Project Schedule attached hereto. Consultant represents that it is qualified to perform the professional services required by this Agreement and possesses the necessary licenses and permits required to perform said services. Consultant represents that it has no interest and shall not acquire any interest direct or indirect which conflicts, or has the appearance of conflicting, in any manner or degree with the performance of the work and services under this Agreement.

1.4. Compliance with Laws. Consultant agrees that it shall perform the services required by this Agreement in compliance with all applicable Federal and California laws including, but not limited to, those laws related to minimum hours and wages; occupational health and safety; fair employment and employment practices; workers' compensation insurance and safety in employment; and all other Federal, State and local laws and ordinances applicable to the services required under this Agreement.

1.5. Non-Discrimination. During the performance of this Agreement, Consultant and its officers, employees, agents, representatives or subcontractors shall not unlawfully discriminate in violation of any federal, state or local law, rule or regulation against any employee, applicant for employment or person receiving services under this Agreement because of race, religion, color, national origin, ancestry, physical or mental disability, medical condition (including genetic characteristics), marital status, age, political affiliation, sex or sexual orientation. Consultant and its officers, employees, agents, representatives or subcontractors shall comply with all applicable Federal, State and local laws and regulations related to non-discrimination and equal opportunity, including without limitation the County's nondiscrimination policy; the Fair Employment and Housing Act (Government Code sections 12900 et seq.); California Labor Code sections 1101, 1102 and 1102.1; the Federal Civil Rights Act of 1964 (P.L. 88-352), as amended; and all applicable regulations promulgated in the California Code of Regulations or the Code of Federal Regulations.

1.6. Non-Exclusive Agreement. Consultant acknowledges that County may enter into agreements with other consultants for services similar to the services that are subject to this Agreement or may have its own employees perform services similar to those services contemplated by this Agreement.

1.7. Delegation and Assignment. This is a personal service contract, and the duties set forth herein shall not be delegated or assigned to any person or entity without the prior written consent of County. Consultant may engage a subcontractor(s) as permitted by law and may employ other personnel to perform services contemplated by this Agreement at Consultant's sole cost and expense.

2.0 COMPENSATION AND BILLING

2.1. Compensation. For each task or project let under this Agreement Consultant shall be paid in accordance with the fee schedule set forth in Exhibit "C", attached hereto and made a part of this Agreement (the "Fee Schedule"). Consultant will be compensated on a time and materials basis, based on the hours worked by the Consultant's employees or subcontractors at the hourly rates specified in the Fee Schedule. Fee Schedule rates shall include direct salary costs, employee benefits, and overhead. The rates stated in the Fee Schedule are not adjustable during the term of this Agreement. Consultant's compensation under this Master Agreement shall in no case exceed **Three-Million, Seventy-Nine Thousand and Four-Hundred and Forty-Six Dollars (\$3,079,446.00)** The County may retain ten percent of all periodic or progress payments made to the Consultant until completion and acceptance of all work tasks and County shall have right to withhold payment from Consultant for any unsatisfactory service until such time service is performed satisfactorily.

2.2. Reimbursements. In addition to the aforementioned fees, Consultant will be reimbursed for any expenses specifically set forth in a Project Scope of Work. All such reimbursement amounts are

limited to those costs and expenses that are reasonable, necessary and actually incurred by the Consultant in connection with the services provided. The County shall not pay a mark up on any item of reimbursement. The County shall not pay for any item of overhead such as telephone, cellular phone, facsimile, postage, etc. All requests for reimbursement shall be accompanied by a copy of the original invoice.

2.3. Additional Services. Consultant shall not receive compensation for any services provided outside the scope of services specified in Exhibits A and B and specified in each Project Scope of Work unless the County, prior to Consultant performing the additional services, approves such additional services in writing by means of an amendment. It is specifically understood that oral requests and/or approvals of such additional services or additional compensation shall be barred and are unenforceable.

2.4. Method of Billing. Consultant may submit invoices to County's Project Manager for approval on a progress basis, but no more often than once each calendar month. Said invoice shall be based on the total of all Consultants' services that have been completed to County's sole satisfaction. County shall pay Consultant's invoice within forty-five (45) days from the date County receives said invoice. Each invoice shall describe in detail, the services performed and the associated percentage of tasks completed. Any additional services approved and performed pursuant to this Agreement shall be designated as "Additional Services" and shall identify the number of the authorized change order, where applicable, on all invoices.

2.5. Records and Audits. Records of Consultant's services relating to this Agreement shall be maintained in accordance with generally recognized accounting principles and shall be made available to County or its Project Manager for inspection and/or audit at mutually convenient times for a period of three (3) years from the termination of this Agreement.

3.0 TIME OF PERFORMANCE

3.1. Commencement and Completion of Work. The professional services to be performed pursuant to this Agreement shall commence within five (5) days after County delivers its Notice to Proceed for each separately approved Project Authorization. Said services shall be performed in strict compliance with the Project Schedule approved by County as set forth in each Project Scope of Work. Each Project Schedule may be amended by mutual agreement of the parties. Failure to commence work in a timely manner and/or diligently pursue work to completion may be grounds for termination of this Agreement.

3.2. Excusable Delays. Neither party shall be responsible for delays or lack of performance resulting from acts beyond the reasonable control of the party or parties. Such acts shall include, but not be limited to, acts of God, fire, strikes, material shortages, compliance with laws or regulations, riots, acts of war, or any other conditions beyond the reasonable control of a party.

4.0 TERM OF CONTRACT AND TERMINATION

4.1. Term. This Agreement shall commence upon approval by the County's Board of Supervisors and continue for a period of **thirty-six (36) months**, or until all work on each Project let during the 36 month period is completed, unless previously terminated as provided herein or as otherwise agreed to in writing by the parties.

4.2. Contract Extension. If mutually agreeable to both parties, this Contract may be extended on a year-to-year basis, however, in no case shall the renewal extend beyond December 31, 2017, two (2) years from the expiration date of the original Agreement.

4.3. Notice of Termination. The County reserves and has the right and privilege of canceling, suspending or abandoning the execution of all or any part of the work contemplated by this Agreement, with or without cause, at any time, by providing written notice to Consultant. The termination of this Agreement shall be deemed effective upon receipt of the notice of termination. In the event of such termination, Consultant shall immediately stop rendering services under this Agreement unless directed otherwise by the County.

4.4. Compensation. In the event of termination, County shall pay Consultant for reasonable costs incurred and professional services satisfactorily performed up to and including the date of County's written notice of termination. Compensation for work in progress shall be prorated as to the percentage of work completed as of the effective date of termination in accordance with the fees set forth in Exhibit "C". In ascertaining the professional services actually rendered hereunder up to the effective date of termination of this Agreement, consideration shall be given to both completed work and work in progress, to complete and incomplete drawings, and to other documents pertaining to the services contemplated herein whether delivered to the County or in the possession of the Consultant.

4.5. Documents. In the event of termination of this Agreement, all documents prepared by Consultant in its performance of this Agreement including, but not limited to, finished or unfinished design, development and construction documents, data studies, drawings, maps and reports, shall be delivered to the County within ten (10) days of delivery of termination notice to Consultant, at no cost to County. Any use of uncompleted documents without specific written authorization from Consultant shall be at County's sole risk and without liability or legal expense to Consultant.

5.0 INSURANCE REQUIREMENTS

5.1. Minimum Scope and Limits of Insurance. Consultant, at its sole cost and expense, for the full term of this Agreement (and any extensions thereof), shall obtain and maintain, at minimum, compliance with all of the following insurance coverage(s) and requirements. If Consultant normally carries insurance in an amount greater than the minimum amount listed below, that greater amount shall become the minimum required amount of insurance for purposes of this Agreement. The insurance listed below shall have a retroactive date of placement prior to, or coinciding with, the date services are first provided that are governed by the terms of this Agreement:

- (a) Comprehensive general liability, including premises-operations, products/ completed operations, broad form property damage, blanket contractual liability, independent contractors, personal injury with a policy limit of not less than One Million Dollars (\$1,000,000.00), combined single limits, per occurrence and aggregate. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to any act or omission by Consultant under this Agreement or the general aggregate limit shall be twice the required occurrence limit.
- (b) Automobile liability for owned vehicles, hired, and non-owned vehicles, with a policy limit of not less than One Million Dollars (\$1,000,000.00), combined single limits, per occurrence and aggregate.
- (c) Workers' compensation insurance as required by the State of California.
- (d) Professional errors and omissions ("E&O") liability insurance with policy limits of not less than Two Million Dollars (\$2,000,000.00), combined single limit for each occurrence. If Consultant cannot provide an occurrence policy, Consultant shall provide insurance covering claims made as a result of performance of Work on this Project and shall maintain such insurance in effect for not less than three years following Final Completion of the Project.

5.2. Endorsements. The Consultant shall obtain a specific endorsement to all required insurance policies, except Professional Liability insurance, naming the County of Stanislaus, its Officers,

Directors, Officials, Agents, Employees and Volunteers as additional insureds for at least three years after the completion of the work to be performed under this Agreement, but, to the extent that any insurance issued to Consultant in effect after the expiration of three years provides additional insured coverage to parties Consultant agreed in writing to name as an additional insured, then Consultant shall have the obligation under this contract to obtain such additional insured coverage for the County, under any and all policies Consultant has regarding:

- (a) Liability arising from or in connection with the performance or omission to perform any term or condition of this Agreement by or on behalf of the Consultant, including the insured's general supervision of its subcontractors;
- (b) Ongoing services, products and completed operations of the Consultant;
- (c) Premises owned, occupied or used by the Consultant; and
- (d) Automobiles owned, leased, hired or borrowed by the Consultant.
- (e) For Workers' Compensation insurance, the insurance carrier shall agree to waive all rights of subrogation against the County, its officers, officials and employees for losses arising from the performance of or the omission to perform any term or condition of this Agreement by the Consultant.

5.3. Deductibles: Any deductibles, self-insured retentions or named insureds must be declared in writing and approved by County. At the option of the County, either: (a) the insurer shall reduce or eliminate such deductibles, self-insured retentions or named insureds, or (b) the Consultant shall provide a bond, cash, letter of credit, guaranty or other security satisfactory to the County guaranteeing payment of the self-insured retention or deductible and payment of any and all costs, losses, related investigations, claim administration and defense expenses. The County, in its sole discretion, may waive the requirement to reduce or eliminate deductibles or self-insured retentions, in which case, the Consultant agrees that it will be responsible for and pay any self-insured retention or deductible and will pay any and all costs, losses, related investigations, claim administration and defense expenses related to or arising out of the Consultant's defense and indemnification obligations as set forth in this Agreement.

5.4. Certificates of Insurance: At least ten (10) days prior to the date the Consultant begins performance of its obligations under this Agreement, Consultant shall furnish County with certificates of insurance, and with original endorsements, showing coverage required by this Agreement, including, without limitation, those that verify coverage for subcontractors of the Consultant. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements shall be received and, in County's sole and absolute discretion, approved by County. County reserves the right to require complete copies of all required insurance policies and endorsements, at any time.

5.5. Non-limiting: Nothing in this Section or the insurance described herein shall be construed as limiting in any way, the indemnification provisions contained in this Agreement, or the liability of Consultant and Consultant's officers, employees, agents, representatives or subcontractors for payments of damages to persons or property.

5.6. Primary Insurance: The Consultant's insurance coverage shall be primary insurance regarding the County of Stanislaus, its Officers, Directors, Officials, Agents, Employees and Volunteers. Any insurance or self-insurance maintained by the County of Stanislaus, its Officers, Directors, Officials, Agents, Employees and Volunteers shall be excess of the Consultant's insurance and shall not contribute with Consultant's insurance. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the County or its officers, officials and employees. The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability. Any and all insurances cared by it shall be deemed liability coverage for any and all actions it performs in connection with this Contract.

5.7. Cancellation of Insurance: Each insurance policy required by this section shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party except after thirty (30) days prior written notice has been given to County. The Consultant shall promptly notify, or cause the insurance carrier to promptly notify, the County of any change in the insurance policy or policies required under this Agreement, including, without limitation, any reduction in coverage or in limits of the required policy or policies. Consultant shall maintain such coverage in effect for three (3) years after substantial completion of the project to the extent it is commercially available at reasonable rates.

5.8. California Admitted Insurer: Insurance shall be placed with California admitted insurers (licensed to do business in California) with a current rating by Best's Key Rating Guide of no less than A:VII; provided, however, that if no California admitted insurance company provides the required insurance, it is acceptable to provide the required insurance through a United States domiciled carrier that meets the required Best's rating and that is listed on the current List of Eligible Surplus Line Insurers maintained by the California Department of Insurance.

5.9. Subcontractors: Consultant shall require that all of its subcontractors are subject to the insurance and indemnity requirements stated herein, or shall include all subcontractors as additional insureds under its insurance policies.

6.0 INDEMNIFICATION

6.1. Indemnification: To the fullest extent allowed by law, Consultant shall defend, indemnify, and hold harmless the County and its officers, directors, officials, agents, employees, volunteers and representatives (collectively, "Indemnitee") from and against any and all claims, suits, actions, losses, injuries, damages or expenses of every name, kind, and description, including litigation costs and reasonable attorney's fees incurred, (collectively, "losses") which are founded upon, arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, the alleged negligence, recklessness, or willful misconduct of Consultant, its officers, agents, employees, volunteers, representatives, contractors and subcontractors, excluding, however, such liabilities caused in part by the sole negligence, active negligence or willful misconduct of the County, its agents, employees, and representatives. These indemnification obligations shall not be limited by any assertion or finding that (1) the person or entity indemnified is liable by reason of non-delegable duty, or (2) the losses were caused in part by the negligence of, breach of contract by, or violation of law by Indemnitee. Nothing in this Agreement, including the provisions of this paragraph, shall constitute a waiver or limitation of any rights which Indemnitee may have under applicable law, including without limitation, the right to implied indemnity.

6.2. Duty to Defend: The duty of Consultant to indemnify and save harmless as set forth herein, shall include both the duty to indemnify and at Consultant's own cost and expense the duty to defend as set forth in Section 2778 of the California Civil Code and as limited in section 2782.8 of the California Civil Code. This duty to defend arises immediately when such claim is made and shall be independent of any finding of negligence and shall arise regardless of any claim or assertion that Indemnitee caused or contributed to the Losses. Consultant shall provide legal counsel acceptable to the County.

6.3. Duty to Cooperate: Each party shall notify the other party within ten (10) days in writing of any claim or damage related to activities performed under this Agreement. The parties shall cooperate with each other in the investigation and disposition of any claim arising out of the activities under this Agreement. Specifically, Consultant shall take all steps necessary to assist the County in the defense of any claim brought by a contractor hired to construct the Project regarding any errors, flaws, and/or omissions in the plans or specifications of the Project.

6.4. Patent Rights: Consultant represents that professional services provided by Consultant pursuant to this Agreement does not infringe on any other copyrighted work. Consultant shall defend, indemnify and hold harmless the County from all loss, cost, damage, expense, liability or claims, including attorneys' fees, court costs, litigation expenses and expert consultant or witness fees, that may at any

time arise for any infringement of the patent rights, copyright, trade secret, trade name, trademark, service mark or any other proprietary right of any person or persons in consequence of the use by the County of any articles or services supplied under this agreement.

6.5. The foregoing provisions in this section "Indemnification" shall survive the term and termination of this Agreement.

7.0 GENERAL PROVISIONS

7.1. Entire Agreement: This Agreement constitutes the entire Agreement between the parties with respect to any matter referenced herein and supersedes any and all other prior writings and oral negotiations. This Agreement may be modified only in writing, and signed by the parties in interest at the time of such modification. The terms of this Agreement shall prevail over any inconsistent provision in any other contract document appurtenant hereto, including exhibits to this Agreement.

7.2. Representatives. The Director of the Stanislaus County Department of Environmental Resources, or his designee, shall be the representative of County for purposes of this Agreement and may issue all consents, approvals, directives and agreements on behalf of the County, called for by this Agreement, except as otherwise expressly provided in this Agreement. Consultant shall designate a representative for purposes of this Agreement who shall be authorized to issue all consents, approvals, directives and agreements on behalf of Consultant called for by this Agreement, except as otherwise expressly provided in this Agreement.

7.3. Project Managers. County shall designate a Project Manager to work directly with Consultant in the performance of this Agreement. Consultant shall designate a Project Manager who shall represent it and be its agent in all consultations with County during the term of this Agreement. Consultant or its Project Manager shall attend and assist in all coordination meetings called by County.

7.4. Designated Personnel: A material covenant of this agreement is that the Consultant shall assign the individuals designated below to perform the functions designated so long as they continue in the employ of the Consultant. The designated individuals shall, so long as their performance continues to be acceptable to County, remain in charge of the services for the Project from beginning through completion of services.

- a. Project Manager: Bryan A. Stirrat, P.E.
- b. Lead/Manager: Greg Acosta, P.E.

7.5. Removal of Personnel or Sub-Consultants: If the County, in its sole discretion at any time during the term of this agreement, desires the removal of any person or sub-consultant assigned by Consultant to perform services, then the Consultant shall remove such person or consultant immediately upon receiving notice from the County.

7.6. Notices: Any notices, documents, correspondence or other communications concerning this Agreement or the work hereunder may be provided by personal delivery, facsimile or mail and shall be addressed as set forth below. Such communication shall be deemed served or delivered: a) at the time of delivery if such communication is sent by personal delivery; b) at the time of transmission if such communication is sent by facsimile; and c) 48 hours after deposit in the U.S. Mail as reflected by the official U.S. postmark if such communication is sent through regular United States mail.

If to County:

Stanislaus County
Department of Environmental Resources
Attn: Susan Garcia
3800 Cornucopia Way, Suite C
Modesto, California 95358

If to Consultant:

Tetra Tech BAS, Inc.
1360 Valley Vista Drive
Diamond Bar, CA 91765
Attn: Bryan A. Stirrat, PE

7.7. Attorneys' Fees: In the event that litigation is brought by any party in connection with this Agreement, the prevailing party shall be entitled to recover from the opposing party all costs and expenses, including reasonable attorneys' fees, incurred by the prevailing party in the exercise of any of its rights or remedies hereunder or the enforcement of any of the terms, conditions, or provisions hereof.

7.8. Governing Law: This Agreement shall be governed by and construed under the laws of the State of California without giving effect to that body of laws pertaining to conflict of laws. In the event of any legal action to enforce or interpret this Agreement, the parties hereto agree that the sole and exclusive venue shall be a court of competent jurisdiction located in Stanislaus County, California.

7.9. Assignment: Consultant shall not voluntarily or by operation of law assign, transfer, sublet or encumber all or any part of Consultant's interest in this Agreement without County's prior written consent. Any attempted assignment, transfer, subletting or encumbrance shall be void and shall constitute a breach of this Agreement and cause for termination of this Agreement. Regardless of County's consent, no subletting or assignment shall release Consultant of Consultant's obligation to perform all other obligations to be performed by Consultant hereunder for the term of this Agreement.

7.10. Independent Contractor: Consultant is and shall be acting at all times as an independent contractor and not as an employee of County. Consultant shall secure, at his expense, and be responsible for any and all payment of Income Tax, Social Security, State Disability Insurance Compensation, Unemployment Compensation, and other payroll deductions for Consultant and its officers, agents, and employees, and all business licenses, if any are required, in connection with the services to be performed hereunder. Consultant hereby indemnifies and holds County harmless from any and all claims that may be made against County based upon any contention by any third party that an employer-employee relationship exists by reason of this Agreement.

7.11. Confidentiality: The Consultant agrees to keep confidential all information obtained or learned during the course of furnishing services under this Agreement and to not disclose or reveal such information for any purpose not directly connected with the matter for which services are provided.

7.12. Ownership of Documents: Any interest, including copyright interests, of Consultant or its contractors or subconsultants in studies, reports, memoranda, computational sheets, drawings, plans or any other documents, including electronic data, prepared in connection with the Services, shall be the property of County. To the extent permitted by law, work product produced under this Agreement shall be deemed works for hire and all copyrights in such works shall be the property of the County. In the event that it is ever determined that any works created by Consultant or its subconsultants under this Agreement are not works for hire, Consultant hereby assigns to County all copyrights to such works. With the County's prior written approval, Consultant may retain and use copies of such works for reference and as documentation of experience and capabilities.

7.13. Reuse of Design Documents: Should the County desire to reuse the documents specified above and not use the services of the Consultant, then the County agrees to require the new consultant to assume any and all obligations for the reuse of the documents, and the County releases Consultant and its subconsultants from all liability associated with the reuse of such documents.

7.14. Public Records Act Disclosure: Consultant has been advised and is aware that all reports, documents, information and data including, but not limited to, computer tapes, discs or files furnished or prepared by Consultant, or any of its subcontractors, and provided to County may be subject to public disclosure as required by the California Public Records Act (California Government Code Section 6250 et. seq.). Exceptions to public disclosure may be those documents or information that qualifies as trade secrets, as that term is defined in the California Government Code Section 6254.7, and of which Consultant informs County of such trade secret. The County will endeavor to maintain as confidential all information obtained by it that is designated as a trade secret. The County shall not, in any way, be liable or responsible for the disclosure of any trade secret including, without limitation, those

records so marked if disclosure is deemed to be required by law or by order of the Court.

7.15. Responsibility for Errors: Consultant shall be responsible for its work and results under this Agreement. Consultant, when requested, shall furnish clarification and/or explanation as may be required by the County's representative, regarding any services rendered under this Agreement at no additional cost to County. In the event that an error or omission attributable to Consultant occurs, then Consultant shall, at no cost to County, provide all necessary design drawings, estimates and other Consultant professional services necessary to rectify and correct the matter to the sole satisfaction of County and to participate in any meeting required with regard to the correction.

7.16. Order of Precedence: In the event of an inconsistency in this Agreement and any of the attached Exhibits, the terms set forth in this Agreement shall prevail. If, and to the extent this Agreement incorporates by reference any provision of the RFP or the Response, such provision shall be deemed a part of this Agreement. Nevertheless, if there is any conflict among the terms and conditions of this Agreement and those of any such provision or provisions so incorporated by reference, this Agreement shall govern over both the Response and the RFP and the Response shall govern over the RFP.

7.17. Costs: Each party shall bear its own costs and fees incurred in the preparation and negotiation of this Agreement and in the performance of its obligations hereunder except as expressly provided herein.

7.18. No Third Party Beneficiary Rights: This Agreement is entered into for the sole benefit of County and Consultant and no other parties are intended to be direct or incidental beneficiaries of this Agreement and no third party shall have any right in, under or to this Agreement.

7.19. Construction: The parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises with respect to this Agreement, this Agreement shall be construed as if drafted jointly by the parties and in accordance with its fair meaning. There shall be no presumption or burden of proof favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement.

7.20. Amendments: This Agreement may be amend only by a writing executed by the parties hereto or their respective successors and assigns.

7.21. Waiver: The delay or failure of either party at any time to require performance or compliance by the other of any of its obligations or agreements shall in no way be deemed a waiver of those rights to require such performance or compliance. No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the party against whom enforcement of a waiver is sought. The waiver of any right or remedy in respect to any occurrence or event shall not be deemed a waiver of any right or remedy in respect to any other occurrence or event, nor shall any waiver constitute a continuing waiver.

7.22. Severability: If any provision of this Agreement is determined by a court of competent jurisdiction to be unenforceable in any circumstance, such determination shall not affect the validity or enforceability of the remaining terms and provisions hereof or of the offending provision in any other circumstance. Notwithstanding the foregoing, if the value of this Agreement, based upon the substantial benefit of the bargain for any party is materially impaired, which determination as made by the presiding court or arbitrator of competent jurisdiction shall be binding, then both parties agree to substitute such provision(s) through good faith negotiations.

7.23. Counterparts: This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

7.24. Corporate Authority: The persons executing this Agreement on behalf of the parties

hereto warrant that they are duly authorized to execute this Agreement on behalf of said parties and that by doing so, the parties hereto are formally bound to the provisions of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by and through their respective authorized officers:

<p>COUNTY OF STANISLAUS</p> <p>By: <u>William O'Brien</u> William O'Brien Chair of The Board of Supervisors</p> <p>Date: <u>12/1/12</u></p> <p>"County"</p>	<p>TETRA TECH BAS, INC.</p> <p>By: <u>Bryan A. Stirrat</u> Bryan A. Stirrat President</p> <p>Date: <u>12/2/12</u></p> <p>"Consultant"</p>
<p>ATTEST: Christine Ferraro Tallman Clerk of the Board of Supervisors of the County of Stanislaus, State of California</p> <p>By: <u>Elizabeth King</u> Deputy Clerk</p> <p>Date: <u>12-11-2012</u></p>	
<p>APPROVED AS TO CONTENT: Department of Environmental Resources</p> <p>By: <u>Jami Aggers</u> Jami Aggers Interim Director</p> <p>Date: <u>12/11/12</u></p>	
<p>APPROVED AS TO FORM: John P. Doering County Counsel</p> <p>By: <u>Thomas E. Boze</u> Thomas E. Boze Deputy County Counsel</p> <p>Date: <u>12/11/12</u></p>	

EXHIBIT A
COUNTY'S REQUEST FOR PROPOSAL
(Incorporated by Reference)

EXHIBIT B

CONSULTANT'S RESPONSE TO COUNTY'S REQUEST FOR PROPOSAL

(Attached)



November 29, 2012

PI2-3759

Ms. Susan M. Garcia, C.P.M.
Stanislaus County
Department of Environmental Resources
3800 Cornucopia Way, Suite C
Modesto, CA 95358

**RE: ADDENDUM TO THE PROPOSAL FOR GEER ROAD LANDFILL
ENVIRONMENTAL MONITORING, TESTING, SAMPLING, AND
REPORTING SERVICES**

Dear Ms. Garcia:

Tetra Tech BAS previously submitted our proposal to provide environmental monitoring, testing, sampling, and reporting services at the Geer Road Landfill under cover letter dated August 16, 2012. That proposal responded to the requirements outlined in the County of Stanislaus' Request for Proposals, dated June 14, 2012. This Addendum describes revisions to the scope of work for the project based on discussions with the County following submittal of our proposal.

TASKS b/c:

Since the submittal of the proposal the groundwater monitoring network at the site has been expanded. As such, the scope of Tasks b and c, as described in Sections 2D.4.B and 2D.4.C of our proposal has likewise changed. The following summarizes the current number of wells comprising the groundwater monitoring network, the frequency at which those wells are sampled and the number of analyses. These quantities replace those provided in proposal Section 2D.4.B and referenced in 2D.4.C

• **32 Shallow Wells**

- 20 Shallow Wells Sampled Quarterly:
MW-2S, MW-3S, MW-4S, MW-5S, MW-8S, MW-9S, MW-14S, MW-15S,
MW-23S, MW-24, MW-26S, MW-27S, MW-28S, MW-29S, MW-30S, PZ-1,
PZ-2, PZ-3, PZ-4, PZ-6
- 12 Additional Shallow Wells Samples Semi-Annually:
MW-1S, MW-7S, MW-10S, MW-11S, MW-12S, MW-13S, MW-16S, MW-
17S, MW-18S, MW-19S, MW-21S, MW-22S

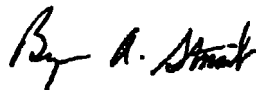
- **20 Deep Wells**
 - 14 Deep Wells Sampled Quarterly:
MW-1D, MW-2D, MW-3D, MW-4D, MW-15D, MW-23D, MW-24D, MW-25D2, MW-25D3, MW-26D, MW-27D, MW-28D, MW-29D, MW-30D
 - 6 Additional Deep Wells Sampled Semi-Annually:
MW-7D, MW-17D, MW-18D, MW-19D, MW-21D, MW-22D
- **4 Private Wells**
 - 4 Wells Sampled Semi-Annually:
Streeter-Shop, Streeter-House, PMW-1, PMW-2
- **2 Leachate Wells**
 - 2 Wells Monitored Quarterly:
LW-1, LW-2 (ASSUMED DRY)
- **Analytical Testing Quantities:**
 - Quarterly Events:
 - 38 Primary Samples
 - 2 Blind Duplicate Samples
 - 6 Trip Blanks (VOCs Only)
 - 1 Field Blank (VOCs Only)
 - Semi-Annually Events:
 - 56 Primary Samples
 - 2 Blind Duplicate Samples
 - 6 Trip Blanks (VOCs Only)
 - 1 Field Blank (VOCs Only)

TASK f:

Since the submittal of the proposal, clarification was provided by the County regarding the operational needs for the GWETS (Task f), and specifically the need for 2 operational visits to the site per week (with one visit dedicated to cleaning of the filter media in the GWETS treatment compound). Section 2D.4.F of the proposal specified a single visit per week which is now expanded to include an additional visit per week for filter maintenance and cleaning.

Modified costs have been provided for these revisions to the scope of work. Please contact me directly with any questions regarding this addendum.

Very truly yours,



Bryan A. Stirrat, P.E.
President



2D.4 Workplan

In accordance with the scope of work provided in the Project RFP, Tetra Tech BAS has prepared the following Workplan for addressing the specific tasks described therein. The Workplan reflects our understanding of the needs of the project as well as our past experience in performing similar projects at other sites. Because certain specific tasks listed in the RFP are actually conducted in conjunction with others, such related tasks are discussed together. For example, routine leachate monitoring, groundwater sampling, and water level measurements are performed together, and are therefore discussed as a single combined activity.

A. Leachate Monitoring

Two leachate wells are present at the site. Liquid levels (if present) within these wells will be monitored on a quarterly basis. Samples of liquids from these wells will be collected as part of the groundwater monitoring activities discussed in the following section.

B. Groundwater Monitoring

The groundwater and leachate monitoring network at the Geer Road Landfill is comprised of 35 groundwater monitoring wells and two leachate monitoring wells. Twenty two of the groundwater wells are designated as shallow wells (screened in the first saturated zone), and the remaining 13 are considered deep wells, which are typically screened 30 to 50 feet below the static water level in the shallow zone. The wells are divided into Group I wells, which are sampled on a quarterly basis, and Group II wells, which are sampled semi-annually. The wells are further designated as background wells, detection monitoring wells, point of compliance wells, corrective action monitoring wells, and off-site monitoring wells. In addition, the site monitoring program includes two domestic wells located on the adjacent Streeter Property, and two wells located across Geer Road in the Pinewood Meadows Mobile Home Park.

Tetra Tech BAS understands the significance of the data being generated through the groundwater and leachate monitoring and sampling activities at the Geer Road Landfill site. Data gathered through these activities will be relied upon as the basis for site compliance, for determinations regarding the effectiveness of corrective action measures currently in place, and for potential future expansion of those measures. As such, groundwater sampling protocols will follow strict standards to ensure that the samples accurately represent the groundwater conditions beneath the site. In performing routine monitoring and sampling of groundwater monitoring wells under this contract, the following monitoring and sampling protocols will be implemented:



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- Prior to initiation of any field activities, the Tetra Tech BAS Project Manager will notify the County of the date and time of the sampling event.
- Internally to the Tetra Tech BAS Team, communication between the Groundwater Project Manager, project analytical laboratory (BC Labs), and field sampling crews will be critical to ensure that the scope of all monitoring, sampling, and testing is performed in accordance with the site specific Monitoring and Reporting Program (MRP). The Tetra Tech BAS Groundwater Project Manager will distribute a sampling and testing summary to the project Field Manager and BC Labs one month prior to initiation of field activities in order to ensure the timeliness of sample container deliveries. BC Labs will use the summary as a guide to prepare sample container packages, and the field crews will use the summary as a cross check upon container delivery. Sample containers will be delivered by BC Labs one week prior to the start of sampling activities. Containers will be stored in a clean secure area, away from any potential contaminant sources.

During sample collection activities, the sampling and testing summary will allow the field crews to confirm that all samples have been collected, and will assist in the preparation of sample tracking paperwork, including chain-of-custody documentation. Upon receipt of the samples at the lab, the summary will provide an added level of quality control that the lab can use to ensure that all of the proper samples have been collected in the correct containers. Should the lab determine that the delivered containers are inconsistent with the required analyses, the Tetra Tech BAS Groundwater Project Manager will be notified immediately, and steps will be taken to re-collect samples as necessary and/or to determine whether sufficient samples exist to allow for performance of all the required analyses. Upon receipt of samples, the lab will complete a Sample Receipt Form, which will be part of the final testing report.

- At the beginning of each day of field activities, and between each sampling location, all monitoring equipment being introduced into the site wells will be decontaminated using a non-phosphate wash solution, followed by two rinses with de-ionized water.
- Before initiation of sample collection activities at any site, water levels will be measured in the designated wells comprising the site monitoring network. Water levels will be measured using an electronic water level indicator, to an accuracy of ± 0.01 ft., prior to initiation of any well purging and sampling. During collection of water level measurements, Tetra Tech BAS field personnel will evaluate the condition of each well to be sampled and the County will be notified immediately, through the established lines of communication, of any observed evidence of damage, tampering, or vandalism. Rapid notifications will help to ensure timeliness in the completion of field sampling activities.



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- Following completion of water level monitoring activities, wells will be purged to remove any stagnant water that may not be representative of formation. During purging, discharged water will be monitored for electrical conductivity, temperature, salinity, turbidity, dissolved oxygen, and pH, to confirm that these parameters have stabilized and that fresh formation water is being produced. This data will be recorded on a pre-printed Groundwater Well Sampling Log. Tetra Tech BAS will strictly follow all manufacturers' recommendations regarding proper use and calibration of these field monitoring instruments. At a minimum, units will be calibrated daily in the field at the start and end of each day of sampling and, as-needed, based on field encountered conditions. Purged water will be transferred directly to the GWETS treatment system.
- Water samples (either from purged groundwater monitoring wells or grab samples collected from leachate wells or off-site domestic wells) will be collected into laboratory-provided containers with appropriate preservatives, and immediately placed into a field cooler with ice at a temperature of 4°C. Samples designated for metals analysis (if necessary) will be filtered through a 0.45-micron filter in the field. Trip blanks, field blanks, equipment blanks (for bailed wells), and duplicate samples will be collected in accordance with the site sampling program, and results of these analyses will serve to demonstrate the accuracy and reliability of the sampling and analytical testing program.
- Sample pickup will be scheduled for each day of sampling to ensure that samples arrive at the lab within 24 hours of collection. Samples will be transported under strict chain-of-custody (COC) protocols. A COC form will be completed in the field, detailing the sample ID numbers, time and date of collection, and required testing. The COC form will be signed by the person collecting the samples and all those retaining sample custody until delivery to the lab.
- Typically, the lab will provide results of analytical tests within two weeks of receipt of collected samples. This will allow for Tetra Tech BAS to perform necessary data validation activities, address any issues related to potential field or laboratory introduced contamination, and/or conduct any required re-testing related to tentatively identified releases. In addition, prompt analytical testing will allow, if necessary, to re-analyze a sample within prescribed holding times without a need to re-sample.
- Should there be an indication of laboratory or field contamination, a review of the facilities and practices potentially contributing to the specific contamination will be performed. This may include:
 - Assessment of the particular contaminant and identification of common sources
 - Review of field data sheets, field notes, and COCs



- Interviews with field and/or laboratory personnel regarding procedures and practices conducted
 - Direct inspection of field and laboratory facilities
 - Auditing of field and/or laboratory personnel during performance of their work
- Upon determination of the cause, or probable cause of the suspected field and/or laboratory introduced contamination, but not more than 30 days following identification of the suspected contamination, Tetra Tech BAS will provide the County with proposed corrective actions and/or modifications of protocols that will be implemented to prevent a recurrence.

As necessary and in accordance with the site MRP, samples will also be collected from any leachate seeps observed at the time of site sampling activities. Should a leachate seep be observed, Tetra Tech BAS will notify the County immediately. At the County's direction, Tetra Tech BAS will assist the County in the preparation of the associated and required written report to the RWQCB.

C. Groundwater Elevations and Flow

As discussed in the previous section, depth to groundwater measurements will be taken in conjunction with the groundwater monitoring activities described in the previous section. Data collected from these activities will be used to determine groundwater gradients, flows and velocities in accordance with the site MRP. These will be included in the quarterly and annual reports described in a subsequent section of this proposal.

D. Surface Water Monitoring (Sedimentation Basin and Tuolumne River)

Monitoring of the sedimentation basin at the site will be conducted in accordance with the Revised MRP as described in the following section.

E. Sedimentation Basin and Tuolumne River Monitoring

In accordance with the requirements of the Revised MRP, samples will be collected from the discharge of the on-site sedimentation basin and the Tuolumne River during the months of July, August, September, October, and November of each year. In accordance with the Tuolumne River Sampling and Analysis Plan (SAP Version 2), river samples will be collected from a total of three locations. Samples will be collected from areas of low turbulence, and sample containers will be submerged fully in order to ensure collection of representative samples. A sample will



also be collected from the discharge of the sedimentation basin at the site, as prescribed in the MRP. Analytical testing of collected samples will be in accordance with the MRP and the SAP.

F. GWETS Monitoring

A Groundwater Extraction and Treatment System (GWETS) was installed at the Geer Road Landfill in 1993, with the intent of controlling, capturing and treating impacted groundwater beneath the site. The GWETS consists of 12 groundwater extraction wells, each equipped with a pneumatic pump that discharges to a main header leading to the GWETS treatment plant. Extracted VOC impacted groundwater is treated at the plant using granular activated carbon. Operation of the GWETS is critical to maintaining the site's compliance status. The system is currently under evaluation, and optimization strategies are being implemented to increase the capture capability of the system, especially along the western edge of the landfill where vinyl chloride impacts to groundwater have been identified and where no decreasing trend in VOC concentrations has been observed. Ongoing efforts to optimize the landfill gas extraction system (LFGES) are being utilized to provide long-term decreases in site-wide VOC impacts to groundwater.

Operation of the GWETS will include weekly inspections of the entire system, including each of the extraction wells. During each inspection, special attention will be paid to any evidence of damage, tampering or vandalism. Because of the location of the wells along the lightly secured site perimeter, it is critical that the wells be secure. The hydrogeology of the site is such that the wells should be able to operate in a continuous manner under most conditions. Field crews will observe and record the operation of each pump and note any inconsistency in their operation. Each pump is equipped with a cycle counter that can be used to correlate instantaneous pumping rates to the average pumping rate since the previous inspection. Often, lack of operation of pneumatic pumps can be addressed through clearing of the pneumatic line or adjustment of the pump regulator at the surface. Should a pump be observed to be inoperable and surface repairs are unsuccessful in restarting it, the County will be notified immediately and recommendations made to effect pump repairs.

During each inspection, the GWETS treatment plant will also be inspected and any discrepancies in system operation noted. Influent flows will be recorded during each weekly inspection, and samples of the influent, midpoint between the two GAC vessels, and system effluent will be collected every 40 days to monitor for VOC breakthrough. In addition, accumulated solids in the system sedimentation tank will be purged to the filter bed, the system flow meters will be inspected and calibrated, and routine air compressor maintenance will be performed. Results of the influent and effluent sampling and recorded system flows will be used to calculate the mass of VOCs removed by the GWETS. This will be included in the quarterly and annual reports



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described later in this proposal. A report of system operation will be submitted to the County at the end of each month detailing the activities performed, data collected, and recommendations for system repairs, upgrades, or modifications.

G. Landfill Gas Monitoring

Landfill Gas Plant Monitoring

At a minimum of once per month, the flare station at the landfill shall be monitored for the following in accordance with the RFP:

- Atmospheric temperature
- Atmospheric pressure
- Landfill gas temperature on the inlet to the plant
- Landfill gas pressure on the inlet to the plant
- Totalized landfill gas flow
- Flow rate into the plant from existing flow meter
- Total halogenated VOCs into the plant

In addition to the above listed monitoring parameters, Tetra Tech BAS recommends increasing the frequency of the monitoring at the landfill gas plant and expanding the monitored parameters. The Geer Road Landfill currently operates at lower than typical methane concentrations. Due to this lower operating condition, it is recommended that the landfill gas plant be evaluated on a minimum weekly basis. Additionally, the monitoring of the landfill gas plant should be expanded to include the following items:

- Methane concentration
- Carbon dioxide concentration
- Oxygen concentration
- Balance gas concentration
- Landfill gas temperature at the inlet of the blower
- Landfill gas temperature at the outlet of the blower
- Static pressure at the inlet of the knock-out vessel
- Static pressure at the outlet of the knock-out vessel
- Blower run time and identification of operating blower
- Flow rate from manual determination (pitot tube) for meter accuracy verification
- Flame arrestor inlet and outlet static pressure
- Flame arrestor differential pressure
- Condensate level



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- Condensate injection system operational status
- Quantity of condensate injected into the flare

Landfill Gas Well Monitoring

Monitoring of the landfill gas extraction wells is directly associated with the continued groundwater clean-up efforts currently being undertaken. The source of the groundwater contamination is at least partially caused by the ineffective design, maintenance and operation of the landfill gas collection system that has historically occurred at the Geer Road Landfill. The system that Tetra Tech BAS employs for the monitoring and adjustment of the collection system indicates that vinyl chloride concentrations in the majority of the vadose zone extraction wells have decreased since commencement of Tetra Tech BAS operations, monitoring and maintenance.

Tetra Tech BAS uses a multiple step process for the monitoring and adjustment of a landfill gas collection system. Our technicians perform an initial monitoring of the landfill gas collection system extraction components following Tetra Tech BAS' standard operating procedures (SOP). The results of this initial round of monitoring are provided to the engineering staff, who reviews the results. The engineering staff then recommends adjustments based on numerous criteria including the gas composition, the ratio of specific compounds, the flow rate of the well and other key criteria. The adjustments are sent back to the technician in the field, who then implements the adjusted recommendations from the engineering staff. The technicians are not authorized to make adjustments without the direction of the engineering staff. This allows the key members of the project team to remain in control and responsible for the optimization of the collection system.

During these monitoring and adjustment events, numerous items are recorded for both regulatory compliance and to assist in tuning compliance. The following list includes the minimum items that are included on the monitoring forms completed by the technician and approved by the engineering staff:

- Landfill gas composition
- Weather conditions
- Atmospheric temperature
- Atmospheric pressure
- Landfill gas temperature
- Initial and adjusted static pressure in the wellhead
- Landfill gas flow rate
- Vacuum availability



It is recommended that the monitoring of the collection system be performed in excess of the minimum required once per month basis. Tetra Tech BAS is currently monitoring and adjusting the landfill gas collection system every two (2) weeks. This is being performed in an effort to continue the optimization of the landfill gas collection system to reduce the potential groundwater contamination. This approach has been successful as the vinyl chloride concentrations in numerous vadose zone extraction wells has decreased significantly. By maintaining the frequency of the monitoring and adjustment of the collection system, the improved vadose zone vinyl chloride concentration is expected to continue.

Perimeter Monitoring Probe Monitoring

Once per month, the perimeter methane monitoring probes along the perimeter of the landfill will be monitored in accordance with Title 14 of the California Code of Regulations (CCR), Sections 17783.7 and 17783.9. The monitoring will be performed with a LandTec GEM-2000 with results being recorded both electronically and in hard copy. The following information will be maintained by Tetra Tech BAS in a database to allow for the identification of potential trends in the monitoring probe data:

- Date and time of the monitoring event
- Certification of monitoring result accuracy by the technician
- Type of monitoring equipment used and serial number
- Meteorological conditions
 - Barometric pressure
 - Ambient temperature
 - Wind speed
 - Precipitation (if applicable)
- Initial static pressure of the perimeter monitoring probe
- Purge time for each specific monitoring probe
- Methane concentration
- Carbon dioxide concentration
- Oxygen concentration
- Approval of engineering staff

Tetra Tech BAS has developed an SOP for the monitoring of perimeter methane monitoring probes. This method incorporates the use of an evacuation pump for removing at least one volume of annular space from the probe prior to sampling. This evacuation allows the monitoring to effectively evaluate the gas in the soil, rather than the gas that is trapped in the annular space prior to sampling. Additionally, prior to being submitted to the County or any



regulatory agency, the perimeter monitoring probe data sheets are reviewed and approved by a member of the engineering staff for quality control and data validation activities. If any issues are noted by the engineering staff during this review the technician will be contacted to verify the accuracy of the information collected.

1. Notify the County within 24 hours of detection, and
2. Perform weekly follow-up monitoring of the probe and adjust the landfill gas collection system in an effort to reduce the methane concentration in the probe to below 5.0% by volume.

Additionally, through the use of the Tetra Tech BAS database system, alerts will be issued prior to the regulatory exceedence of 5.0% methane by volume. These alerts can be custom designed based on site specific criteria and allow advanced notice of potentially increasing methane concentration in the perimeter methane monitoring probes. The database system will allow Tetra Tech BAS to be proactive in remedying potential regulatory issues before they are officially an exceedence.

Semi-Annual Plant Analysis

In accordance with the Landfill's Revised Monitoring and Reporting Plan (MRP), landfill gas sampling and analysis must be performed from the flare station on a semi-annual basis. Tetra Tech BAS has performed this sampling and analysis for the past year and plans to continue utilizing the laboratory for the analysis that has been used throughout the current project. The analysis will be performed following the United States Environmental Protection Agency Method TO-15 for volatile organic compounds and a fixed gas analysis through both gas chromatography and mass spectrometry for methane concentration.

Semi-Annual Extraction Point Analysis

In accordance with the Landfill's Revised MRP, landfill gas sampling and analysis must be performed from several extraction components semi-annually. The extraction points that must be sampled and analyzed are RW-11D, RW-12D, RW-14D, EW-22, and EW-59. Tetra Tech BAS has performed this sampling and analysis for the past year and plans to continue utilizing the laboratory for the analysis that has been used throughout the current project. The analysis will be performed following the United States Environmental Protection Agency Method TO-15 for volatile organic compounds and a fixed gas analysis through both gas chromatography and mass spectrometry for methane concentration.



Operational Conditions

Tetra Tech BAS understands that the operational run-time of the landfill gas plant is paramount to the success of the groundwater cleanup efforts and has made numerous improvements to the control system to facilitate an increased operational time. One of these improvements was an update to the programmable logic control to allow for the electronic collection and organization of operational conditions of the flare station. This system will allow Tetra Tech BAS to maintain a current, updated database of the operational run time and associated other calculations required by the Revised MRP including hours in/not in operation, duration of downtimes, and percentage of overall time that the system is operational.

Controlled Landfill Gas Documentation

In accordance with the Revised MRP, the total volume of landfill gas that is treated by the control device must be monitored, recorded, and reported. Additionally, the Landfill's Permit to Operate has a condition that provides a maximum quantity of landfill gas that can be controlled per day (Permit to Operate, Condition 34). After a recent inspection performed by the San Joaquin Valley Air Pollution Control District, a form was developed that calculates and records the total landfill gas controlled on a daily and annual basis. Tetra Tech BAS plans to continue to use this form to monitor and record the total landfill gas flow rate controlled by the flare station. This form is also used to calculate and track the total mass of volatile organic compounds that are controlled by the flare station based upon the results of the annual source test and the flow rate information that is recorded on a daily basis.

H. Resampling

In accordance with the site MRP, resampling will be conducted should analytical testing indicate the presence of contaminants in exceedence of established Concentration Limits for specific parameters. In addition to the multi-level quality assurance measures integrated into the sampling activities described previously, resampling will help to eliminate the possibility of potential field or laboratory introduced contamination. As stated earlier, it is critical that the integrity of the analytical data be maintained due to the significant decision-making that will be based on the results.

I. Monitoring Reports

Tetra Tech BAS' reporting effort will consist of preparing quarterly and annual reports in a timely manner to meet the requirements of the RWQCB. Reporting formats will generally follow the same organization and format currently used. In the preparation of routine reports



over extended periods, consultants often fall into the trap of allowing descriptions of routine activities and processes that have become outdated to be carried over into new reports in the series. In consideration of this tendency, Tetra Tech BAS, at the outset of the project, will perform a QA/QC review of the latest reports for inconsistencies with the actual program being implemented. Upon completion of this review, the findings will be presented to the County for determination of appropriate action. It is not the intention of this review to change the reporting format that the County and RWQCB have become accustomed to. Rather, it is to ensure the accuracy of the reports and to maintain the County's standing with the RWQCB.

In order to facilitate the timeliness of the County's report submittals to the RWQCB, draft reports will be provided to the County not less than three weeks prior to their due dates. Tetra Tech BAS will be available to review any comments made by the County as necessary and appropriate. Once comments have been received and addressed, Tetra Tech BAS will provide final versions of the reports for submittal to the RWQCB.

The reports will present results of all monitoring activities as well as operational data for both the GWETS and the landfill gas system at the site. The final report each year will include a summary of the entire year's activities and findings.

At a minimum, each quarterly report will include the following:

- Cover Letter
- A Compliance Evaluation Summary that includes:
 - Field activities performed and the protocols followed for all monitoring points
 - A map showing the monitoring and observation points
 - A graphical presentation of groundwater gradient, direction of flow, and flow rate for the deep and shallow groundwater zones
 - Laboratory reports
 - An evaluation of the effectiveness of leachate monitoring and control facilities
 - A summary and certification of all Standard Observations for the disposal units
 - A landfill gas report describing the results of monitoring, distribution of gas concentrations, evaluation of effectiveness, and system shut down information
 - A discussion of the effectiveness of the Corrective Action Program including current and historical data and trends, and operational information from the GWETS

In addition to these elements, the Annual Monitoring Summary Report will include:

- Trend graphs for all monitoring parameters and COCs over time



- Tabulated historical data including both field and laboratory data
- A comprehensive compliance record and any corrective actions that were implemented or are planned
- A written narrative of the monitoring results
- A comprehensive evaluation of the effectiveness of the Corrective Action Program

As part of the quarterly and annual reports, Tetra Tech BAS will perform statistical evaluation of the site monitoring data in accordance with current state guidelines. Wherever possible, Tetra Tech BAS will identify opportunities for reductions in sampling frequencies, monitoring points, and/or analytical testing without sacrificing the integrity of the site monitoring networks. We will discuss these opportunities with the County and provide recommendations regarding the long term benefits to the County in implementing any program changes. With the County's concurrence, these recommendations will be included in the final reports presented to the RWQCB.

J. NPDES Stormwater Pollution Prevention

At the direction of the County, Tetra Tech BAS will assist in the preparation of NPDES Stormwater Pollution Prevention Plan Reports.

K. Surface Emissions Monitoring

In accordance with the San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4642, and the Landfill Methane Rule, surface emissions monitoring will be performed on a quarterly basis. The entire 144 surface acres of the disposal area of the landfill will be monitored. Tetra Tech BAS will obtain instantaneous measurements of total organic compound (TOC) concentrations immediately above the surface of the grids using a portable flame ionization detector (FID) that meets typical Title V specifications. Tetra Tech BAS field staff will hold the probe of the FID within 5 to 10 centimeters of the landfill surface while traversing the monitoring grids. Field staff will perform surface inspections during instantaneous surface monitoring to identify cracks or fissures in the landfill cover that could act as potential pathways for LFG to escape to the atmosphere. Meteorological monitoring is conducted in conjunction with the various sampling procedures requiring validation of wind direction and/or wind speed. Surface monitoring will be performed only after 72 hours following the latest rainfall and when the average wind speed is less than 5 miles per hour and instantaneous winds speeds remain below 10 miles per hour.

Tetra Tech BAS field staff will mark surface areas with flags where TOC concentrations exceed 1,000 ppmv, identifying areas in need of remediation. To initiate remediation, the Tetra Tech BAS



Team will notify the County Project Manager of exceedence areas within 24 hours of identification. To track remediation of exceedence areas, Instantaneous Surface Monitoring Data Sheets will be filled out and distributed to appropriate personnel. Remediation of exceedence areas is typically accomplished by providing additional cover material and compacting and/or adjusting LFG extraction wells to increase the extraction rate in areas adjacent to exceedence areas. Remediated areas are then re-tested within 10 working days of the initial monitoring. This process is repeated until TOC concentrations are below 1,000 ppmv.

Furthermore, if the monitoring results of the past events at the Landfill allow the reduced frequency in the monitoring of surface emissions from the Landfill, the frequency required by Tetra Tech BAS will be adjusted accordingly. The information collected during this surface emission monitoring will be reported to the County in a written report within 30 days of the monitoring event. If exceedences of the regulatory requirement are observed, the County will be alerted within 24 hours of identification. Tetra Tech BAS will then perform adjustments to the landfill gas collection system in an effort to mitigate the surface emissions.

L. Leak Monitoring at the Blower Flare Station (BFS)

In accordance with the state mandated Landfill Methane Rule (LMR), the positive pressure side of the blowers will be examined on a quarterly basis. Tetra Tech BAS currently performs this task at the Geer Road Landfill and has developed a written summary form that is submitted to the County for their records after each event. If exceedences of the requirements are observed, the area that is leaking is identified and corrective action is performed to repair the area of concern.

M. Non-Methane Organic Compound (NMOC) Testing

The Geer Road Landfill is currently a New Source Performance Standard (NSPS) exempt site. This exemption is due to the Tier II analyses that have been performed in accordance with 40 Code of Federal Regulations (CFR) 750 Subpart VVVV. In accordance with the Request for Proposal, Tier II analysis would be required by June 2016. The Tier II analysis would be performed in accordance with the NSPS standards.

N. EPA and LMR Greenhouse Gas Annual Reporting

Both the EPA and the California Air Resources Board (CARB) require monitoring and reporting of greenhouse gas emissions from municipal solid waste landfills. Tetra Tech BAS has performed advanced modeling for numerous existing clients prior to the EPA and LMR issuance of a calculation tool. These past experiences have allowed Tetra Tech BAS to become an expert in the field of greenhouse gas monitoring, calculating and reporting for the solid waste industry. Tetra Tech BAS



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will use personnel who have extensive knowledge of the state and federal regulations for the completion of the greenhouse gas annual reporting for both the EPA and CARB.

O. Source Testing and Methane Destruction Efficiency Testing

Annually, source testing is performed on the control system at the Geer Road Landfill. This source testing is performed in accordance with the Landfill's Permit to Operate and SJVAPCD regulations. Oversight of this task will be performed by a member of the engineering staff with past experience supervising Source Testing. Notification of the Source Test will be accomplished by Tetra Tech BAS for SJVAPCD at least 30 days in advance of the testing. Testing protocols will be developed and submitted by Tetra Tech BAS with the assistance of any subcontractors that will be selected for the laboratory analysis portion of the Source Test.

P. Title V Semi-Annual Reports of Required Monitoring (RRM) and Annual Compliance Certification (COC)

Tetra Tech BAS has been assisting in the development of both the Title V Semi-Annual RRM and the Annual COC report since commencing operations, maintenance and monitoring activities at the Geer Road Landfill. Tetra Tech BAS is extremely familiar with the requirements of the RRM and COC. Tetra Tech BAS proposes to develop these reports at least three weeks in advance of the deadlines (June 30 and December 31) for review by the County in an effort to prevent delayed reporting.

Q. Landfill Gas Extraction System Performance Monitoring

Tetra Tech BAS has performed Landfill Gas Extraction System Performance Monitoring since commencing operations, maintenance and monitoring at the Geer Road Landfill. Through the process that Tetra Tech BAS has established for the monitoring and adjustment of extraction wells, the extraction system has been observed to be operating at the optimal conditions for the existing equipment at the Landfill. The continuance of these procedures is expected to allow the continued efficiency and effectiveness of the landfill gas collection system.

R. Health and Safety Plan

Prior to initiation of any field activities under this contract, Tetra Tech BAS will provide the County with a comprehensive Site Specific Health & Safety Plan (HSP) that complies with current OSHA and Cal-OSHA standards. The Site Specific HSP will identify key project health and safety personnel and their responsibilities. It will further identify the physical, chemical, and biological hazards associated with performing the prescribed scope of work at the project site,



and provide measures that will be undertaken to mitigate these hazards. Finally, the Site Specific HSP will include an emergency response plan and the location of the designated emergency clinic in the event of a health and safety incident at the site. The Site Specific HSP will be evaluated and updated on an annual basis.

S. Regulatory Meetings

Given the current regulatory status and high priority of this site to both the County and the RWQCB, it is anticipated that meetings with the RWQCB will be required throughout the performance period of this project. In accordance with the RFP, it is assumed that Tetra Tech BAS will attend a total of four meetings per year through the duration of this contract. During these meetings, Tetra Tech BAS will provide the County with technical support in presenting the current site status, the progress of the various activities at the site, and any planned activities. It is anticipated that the Program Manager and either the Groundwater Project Manager or the Landfill Gas Project Manager will attend each of these meetings in support of the County.

T. Additional Services

At the direction of the County, Tetra Tech BAS can provide a myriad of additional services required at the site. As presented in Section 2C, Tetra Tech BAS has all of the resources and expertise necessary to address any issues that might arise, including but not limited to:

- Hydrogeologic and contaminant fate & transport modeling
- Aquifer testing and assessment
- Expansion of the site groundwater monitoring network
- Optimization / Expansion of the GWETS
- Optimization / Expansion of the LFGES
- Negotiation with the RWQCB
- Permitting support
- Stormwater and NPDES support
- Construction management
- Cap repairs
- Regulatory compliance support
- CEQA support



2D.5 Project Timeline

Tetra Tech BAS staff will utilize the general maintenance schedules prescribed in the Request for Proposal as shown below. Tetra Tech BAS understands that these schedules are not comprehensive and that the Team will need to revise the schedule based on a thorough study of the equipment in place, recommendations by the equipment manufacturers, and relevant wear patterns determined by the site visit and records review. Listed below are general maintenance tasks and frequencies to be performed at each of the sites.

Parameter	Frequency
Leachate Monitoring	
Monitor LW-1 and LW-2	Quarterly
Groundwater Monitoring	
Group I Wells	Quarterly
Group II Wells	Semi-Annually
Streeter Property wells	Quarterly
Pinewood Meadows wells	Quarterly
COCs	Every Five Years
Groundwater Elevation	Quarterly
Groundwater Flow	Quarterly
Surface Water Monitoring	
Stormwater Monitoring	1 st Storm Event plus 1 Other Storm Event
Sedimentation Basin / River Monitoring	
Sedimentation Basin Monitoring	Quarterly
Tuolumne River Monitoring	Quarterly
GWETS Monitoring	
GWETS Inspection	Weekly
Extraction Wells	Weekly
Pumps	Weekly
Influent Water Sampling	Every 40 Days
Landfill Gas Monitoring	
LFG Plant Monitoring	Monthly (Weekly Recommended)
Extraction Well Monitoring	Monthly (Bi-weekly Recommended)



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Parameter	Frequency
Perimeter Probe Monitoring	Monthly
LFG Plant Analysis	Semi-Annually
RWQCB Extraction Well Analysis	Semi-Annually
Plant Run-Time Calculation	Annually (Continuous Recommended)
Volume of LFG Treated Calculation	Annually (Continuous Recommended)
Surface Emissions Monitoring	
Instantaneous Monitoring	Dependent on Approved Alternative
Integrated Sampling	Dependent on Approved Alternative
Leak Monitoring	
Leak Monitoring at LFG Plant	Quarterly
NMOC Testing	
Tier II Analysis	Every 5 Years
EPA and LMR Greenhouse Gas Reporting	
EPA Reporting	Annually
LMR Reporting	Annually
Source Testing and Methane Destruction Efficiency Testing	
Source Testing / CH ₄ Destruction Testing	Annually
Title V RRM and COC	
Reports of Required Monitoring (RRM)	Semi-Annually
Certification of Compliance (COC)	Annually
Landfill Gas Extraction System Performance Monitoring	
Performance Monitoring	Continuous

EXHIBIT C

CONSULTANTS FEE SCHEDULE

(Attached)

TABLE 3.3
Geer Road Landfill
Environmental Monitoring, Testing, Sampling and Reporting
3-YEAR COST SUMMARY

DESCRIPTION	2013			2014			2015			TOTAL 3-YEAR COST
	COST PER TASK	# PER YEAR	TOTAL ANNUAL COST	COST PER TASK	# PER YEAR	TOTAL ANNUAL COST	COST PER TASK	# PER YEAR	TOTAL ANNUAL COST	
GROUNDWATER TASKS										
a. Leachate Monitoring (2 Wells Monthly)										
Monthly Liquid Level Monitoring	\$621	12	\$7,452	\$621	12	\$7,452	\$621	12	\$7,452	\$22,356
			\$7,452			\$7,452			\$7,452	\$22,356
b.i. Groundwater Monitoring (27 Monitoring Wells, 2 Domestic Wells, 2 Abund Home Park Wells)										
Quarterly Monitoring & WLS - All Parameters	\$25,578	2	\$51,156	\$25,578	2	\$51,156	\$25,578	2	\$51,156	\$153,468
Semi-Annual Monitoring & WLS - All Parameters	\$31,106	2	\$62,212	\$31,106	2	\$62,212	\$31,106	2	\$62,212	\$186,636
			\$113,368			\$113,368			\$113,368	\$340,104
b.ii. Surface Water Monitoring										
Sampling Sedimentation Basin & River	\$2,396	5	\$11,980	\$2,396	5	\$11,980	\$2,396	5	\$11,980	\$35,940
			\$11,980			\$11,980			\$11,980	\$35,940
c. GWETS System Monitoring & Alerts & Reporting										
Weekly Monitoring	\$3,366	52	\$175,032	\$3,366	52	\$175,032	\$3,366	52	\$175,032	\$525,096
Monthly Sampling	\$5,744	12	\$68,928	\$5,744	12	\$68,928	\$5,744	12	\$68,928	\$206,784
			\$243,960			\$243,960			\$243,960	\$731,880
d. Groundwater Monitoring (Resampling - All NEEDED COST PENDING)										
Quarterly Monitoring - Non-VOCs & WLS										
COC Round Sampling (Q4 - 2015)										
e. Monitoring Reports										
Quarterly Monitoring Report	\$28,909	3	\$86,727	\$28,909	3	\$86,727	\$28,909	3	\$86,727	\$260,181
Annual Monitoring Report	\$38,686	1	\$38,686	\$38,686	1	\$38,686	\$38,686	1	\$38,686	\$116,038
			\$125,413			\$125,413			\$125,413	\$376,239
f. NPDIS - SWPPP Report (Scope of Support Not Defined)										
Annual Report										
Waterization Report										
g. Health and Safety Plan										
Site Specific HSP	\$1,876	1	\$1,876	\$1,876	0.5	\$938	\$1,876	0.5	\$938	\$3,752
			\$1,876			\$938			\$938	\$3,752
h. Regulatory Meetings (2 per year - Total Annual)										
Sacramento Meetings (w/ RWQCB Total 2)	\$18,484	1	\$18,484	\$18,484	1	\$18,484	\$18,484	1	\$18,484	\$31,432
Madras Meeting (County Offices Total 2)	\$18,484	1	\$18,484	\$18,484	1	\$18,484	\$18,484	1	\$18,484	\$31,432
			\$28,968			\$28,968			\$28,968	\$62,964
			\$525,017			\$524,079			\$524,079	\$1,573,175
LANDFILL GAS TASKS										
a. LFG Monitoring (LFG Plant, Exit Wells, Probes)										
Monthly Monitoring (LFG Plant, Exit Wells, Probes)	\$25,706	12	\$284,472	\$25,706	12	\$284,472	\$25,706	12	\$284,472	\$853,816
Semi Annual Sampling (LFG Plant & Wells)	\$5,896	2	\$11,792	\$5,896	2	\$11,792	\$5,896	2	\$11,792	\$35,376
Reporting (Annual - for inclusion in site report)	\$7,215	1	\$7,215	\$7,215	1	\$7,215	\$7,215	1	\$7,215	\$21,645
			\$303,479			\$303,479			\$303,479	\$910,437
b. LFG Plant & Air Monitor (Annual for Inclusion in Site Report)										
Instantaneous Surface Monitoring (Annual)	\$9,299	1	\$9,299	\$9,299	1	\$9,299	\$9,299	1	\$9,299	\$27,897
Integrated Surface Sampling (Annual)	\$18,301	1	\$18,301	\$18,301	1	\$18,301	\$18,301	1	\$18,301	\$36,903
			\$19,600			\$19,600			\$19,600	\$38,800
c. LFG Plant & Air Monitor (Annual for Inclusion in Site Report)										
Monitoring of pressurized piping	\$2,730	4	\$11,000	\$2,730	4	\$11,000	\$2,730	4	\$11,000	\$33,000
			\$11,000			\$11,000			\$11,000	\$33,000
d. LFG Plant & Air Monitor (Annual for Inclusion in Site Report)										
One 2 NADOC Testing (June 2016)										
e. LFG Plant & Air Monitor (Annual for Inclusion in Site Report)										
EPA Annual Report (Annually in March)	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$8,058
LMB Annual Report (Annually in March)	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$8,058
			\$5,372			\$5,372			\$5,372	\$16,116
f. LFG Plant & Air Monitor (Annual for Inclusion in Site Report)										
Source Testing & Reporting	\$13,565	1	\$13,565	\$13,565	1	\$13,565	\$13,565	1	\$13,565	\$40,695
			\$13,565			\$13,565			\$13,565	\$40,695
g. LFG Plant & Air Monitor (Annual for Inclusion in Site Report)										
Semi-Annual Reports for RBM (June / Dec.)	\$3,975	2	\$7,950	\$3,975	2	\$7,950	\$3,975	2	\$7,950	\$23,850
Annual COC Report (June)	\$2,419	1	\$2,419	\$2,419	1	\$2,419	\$2,419	1	\$2,419	\$7,257
			\$10,369			\$10,369			\$10,369	\$31,107
h. LFG Plant & Air Monitor (Annual for Inclusion in Site Report)										
Annual Monitoring	\$2,531	12	\$30,372	\$2,531	12	\$30,372	\$2,531	12	\$30,372	\$91,116
			\$30,372			\$30,372			\$30,372	\$91,116
			\$393,757			\$393,757			\$393,757	\$1,181,271
TOTAL			\$918,774			\$917,836			\$917,836	\$2,754,446

TABLE 3.1
Geer Road Landfill
Environmental Monitoring, Testing, Sampling and Reporting
COST BREAKDOWN FOR GROUNDWATER TASKS

DESCRIPTION	LABOR COSTS										DIRECT COSTS				TOTAL ESTIMATED COSTS PER EVENT
	Princ.	Div Eng.	Proj Mgr.	Env. Spec.	Eng I	Tech II	Admin Asst.	CAD Dsgn	Total Hours	Total Labor Cost	BC Labs cost+ 10%	Equip/Supplies/Permits/Travel	Vehicle Use		
Unit Rate	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	
a. Leachate Monitoring (2 Wells Monthly)															
Monthly Liquid Level Monitoring		1		2		2			5	\$561			\$60	\$621	
b/c Groundwater Monitoring (57 Monitoring Wells, 2 Domestic Wells, 2 Mobil Home Park Wells)															
Quarterly Monitoring & WLS - All Parameters		4		58		52		114	\$10,488	\$8,890	\$4,550	\$1,650	\$25,578		
Semi-Annual Monitoring & WLS - All Parameters		4		65		59		128	\$11,706	\$12,640	\$4,900	\$1,860	\$31,106		
d/e. Surface Water Monitoring															
Sampling Sedimentation Basin & River				2		10		12	\$956	\$960	\$300	\$180	\$2,396		
f. GWETS System Monitoring & Monthly Reporting															
Weekly Monitoring					4	24		28	\$2,236		\$770	\$360	\$3,366		
Monthly Sampling	2	6	6	16	2	4	2	38	\$5,394	\$270	\$50	\$30	\$5,744		
h. Groundwater Monitoring (Resampling - AS NEEDED COST PENDING)															
Quarterly Monitoring - Non-VOCs & WLS															
COC Round Sampling (Q4 - 2015)															
i. Monitoring Reports															
Quarterly Monitoring Report	4	40	4	110	12		20	24	214	\$27,532		\$1,377		\$28,909	
Annual Monitoring Report	4	52	8	130	16		36	30	276	\$35,606		\$3,080		\$38,686	
f. NPDES - SWPPP Report (Scope of Support Not Defined)															
Annual Report															
Winterization Report															
r. Health and Safety Plan															
Site Specific HSP		2		8			4	2	16	\$1,876				\$1,876	
s. Regulatory Meetings (2 per year) - Total Annual															
Sacramento Meetings (w/ RWQCB: Total 2)	16	16		2	2		2		38	\$8,234		\$2,250		\$10,484	
Moderato Meeting (County Offices: Total 2)	16	16		2	2		2		38	\$8,234		\$2,250		\$10,484	

1) Unit Rates are for 2013 through 2015 Only.
2) All line items are shown on a per event basis, except as noted.

TABLE 3.2
Geer Road Landfill
Environmental Monitoring, Testing, Sampling and Reporting
COST BREAKDOWN FOR LANDFILL GAS TASKS

DESCRIPTION	LABOR COSTS													DIRECT COSTS				TOTAL ESTIMATED COSTS PER EVENT		
	Princ. Eng.	Sr PM	PM	Proj Eng	Eng III	Eng I	Off Ser Clerk	Admin Asst	Chf Eng Tech	Eng Tech III	Eng Tech II	Sr. Proj Design	Proj Design	Principal	Total Hours	Total Labor Cost	LFG Lab		Equip/Supplies/Permits/Mileage	Vehicle Use
	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	cost+ 10%		cost+ 10%	hr
Unit Rate	\$225	\$198	\$187	\$167	\$129	\$103	\$86	\$100	\$127	\$87	\$76	\$162	\$149	\$264						\$15
j. Landfill Gas Monitoring																				
Monthly Monitoring (LFG Plant, Extr. Wells, Probes)	2		8	16		8	40	2		160				1	237	\$21,506		\$2,200		\$23,706
Semi Annual Sampling (LFG Plant & Wells)	1		1	4			8			24				1	39	\$3,856	\$2,040			\$5,896
Reporting (Annual - for inclusion in site report)	1		2	16	8		30	2						0.5	59.5	\$7,215				\$7,215
k. Surface Emission Monitoring (Assumes no detections during first four Quarterly events)																				
Instantaneous Surface Monitoring (Annual)	1		2	6		6		2		80					97	\$8,499		\$800		\$9,299
Integrated Surface Sampling (Annual)	1		2	12		6		2		80					103	\$9,501		\$600		\$10,301
l. Leak Monitoring at Blower Flare Station																				
Monitoring of pressurized piping	1		1	4			2	1		4	0.5	1		1	15.5	\$2,150		\$600		\$2,750
m. Non-Methane Organic Compound Testing																				
Tier 2 NMOC Testing (June 2016)																				
n. Greenhouse Gas Reports																				
EPA Annual Report (Annually in March)	1		1	4		10	4	1						0.5	21.5	\$2,686				\$2,686
LMR Annual Report (Annually in March)	1		1	4		10	4	1						0.5	21.5	\$2,686				\$2,686
o. Source Testing																				
Source Testing & Reporting	1		4	16		8		2	16					1	48	\$6,965		\$6,600		\$13,565
p. Title V Reporting																				
Semi-Annual Reports for RRM (June / Dec.)	1		2	8			16	4						1	32	\$3,975				\$3,975
Annual COC Report (June)	1		2	4			8	2						1	18	\$2,419				\$2,419
q. Landfill Gas Extraction System Performance Monitoring																				
Annual Monitoring	1		2	4			12	1						0.5	20.5	\$2,531				\$2,531

1) Unit Rates are for 2013 through 2015 Only.
2) All line items are shown on a per event basis, except as noted.

**GEER ROAD
WATER QUALITY MONITORING PROGRAM
LABORATORY ANALYTE LIST**

ANALYTE	METHOD	b/c - GW Monitoring			d/e - Surf. Wtr.	f - GWETS
		QTRLY	Semi Annual	COC Round	QTRLY	40 Day
GENERAL CHEMISTRY						
Bicarbonate		40	58	58	5	
Carbonate		40	58	58	5	
Chloride		40	58	58	5	
Cyanide	9101B			58		
Nitrate (as Nitrogen)		40	58	58	5	
Sulfate		40	58	58	5	
Sulfide	9030B			58		
Total Organic Carbon (TOC)				58		
Total Dissolved Solids (TDS)		40	58	58	5	2
Total Suspended Solids (TSS)				58	5	
METALS						
Aluminum	6010B			58		
Antimony	6010B			58		
Arsenic	7062	40	58	58		
Barium	6010B			58		
Beryllium	6010B			58		
Cadmium	7131A			58		
Calcium	6010B	40	58	58	5	
Chromium, Total	6010B			58		
Cobalt	6010B			58		
Copper	6010B			58	5	
Iron	6010B	40	58	58		
Lead	7421	40	58	58		
Magnesium	6010B	40	58	58	5	
Manganese	6010B	40	58	58		
Mercury	7470A			58		
Nickel	7521			58		
Potassium	6010B	40	58	58	5	
Selenium	7742			58		
Silver	6010B			58		
Sodium	6010B	40	58	58	5	
Thallium	7841			58		
Tin	6010B			58		
Vanadium	6010B			58		
Zinc	6010B			58		
CAM Metals (17)	See Above					
ORGANIC COMPOUNDS						
Chlorophenoxy Herbicides (1)	EPA 8151A			58		
Organophosphorus Compounds (1)	EPA 8141A			58		
Semi-Volatile Organic Compounds (1)	EPA 8270			58		
Volatile Organic Compounds (2)	EPA 8260	47	65		5	3
Volatile Organic Compounds (1)	EPA 8260			65		

NOTES:

- (1) - Analyte list from Table VI of the Revised Monitoring and Reporting Program No. R5-2011-0023
- (2) - Analyte list from Table V of the Revised Monitoring and Reporting Program No. R5-2011-0022

TETRA TECH BAS
 1360 Valley Vista Drive
 Diamond Bar, California 91765
 (909) 860-7777

SCHEDULE OF CHARGES

PERSONNEL	HOURLY RATE 2013 - 2015
Principal (P)	\$264
Principal Engineer (PRE)	\$225
Principal Solid Waste Planner	\$214
Division Engineer (DE)	\$213
Principal Administrator (PA)	\$204
Senior Project Manager (SM)/Chief Engineer (CE)	\$198
Project Manager (PM)	\$187
Project Engineer (PE) / Administrator (PAD)	\$167
Engineer V (E-V)	\$152
Engineer IV (E-IV)	\$137
Engineer III (E-III)	\$129
Engineer II (E-II)	\$122
Engineer I (E-I)	\$103
Engineer (E)	\$97
Senior Project Designer (SPD)	\$162
Project Designer (PD)	\$149
Senior Designer (SDD)	\$137
CADD Designer/Drafter (CD)	\$133
Designer (DD)	\$128
Senior Drafter (SD)	\$118
Drafter (D)	\$103
Senior CADD Operator (SCO)	\$97
CADD Operator (CO)	\$80
Regulatory Compliance Manager (RCM)	\$157
Senior Regulatory Compliance Specialist (SRS)	\$147
Regulatory Compliance Specialist (RS)	\$124
Senior Environmental Scientist (SNS)	\$156
Senior Environmental Specialist (SES)	\$136
Environmental Specialist II (ES-II)	\$125
Environmental Specialist I (ES-I)	\$109
Environmental Specialist (ES)	\$98
Estimator (E)/Specification Writer (SW)	\$130
Landscape Architect (LA)	\$127
Project Accountant/Analyst (AA)	\$89
Senior Project Coordinator (SPC)	\$130
Project Coordinator (PC)	\$112
Senior Technical Editor (STE)	\$96
Administrative Assistant (ADA)	\$100
Data (DP)/Word Processing Secretary (WP)	\$88
Office Services Clerk (OS)	\$86
General Clerk (C)/Typist (Y)	\$68
Data Analyst (DA)	\$99
Construction Manager (CM)	\$173
Construction Supervisor (CS)	\$146
Construction Engineering Technician (CET)	\$137
Chief Engineering Technician (CT)	\$127
Engineering Technician V (ET-V)	\$112
Engineering Technician IV (ET-IV)	\$100
Engineering Technician III (ET-III)	\$87
Engineering Technician II (ET-II)	\$76
Engineering Technician I (ET-I)	\$64
Engineering Technician (ET)	\$42
Chief of Survey Parties (CSP)	\$142
3-Man Survey Party (SP-3M)	\$312
2-Man Survey Party (SP-2M)	\$258
1-Man Survey Party with GPS (1M-GPS)	\$198

Overtime Premium is 50% of Personnel Hourly Rate
 (Effective January 1, 2013 - December 31, 2015)

TETRA TECH BAS, INC.
 (aka BRYAN A. STIRRAT & ASSOCIATES)
 1360 Valley Vista Drive
 Diamond Bar, California 91765
 (909) 860-7777

REIMBURSABLE CHARGES

(Effective January 1, 2013 to December 31, 2015)

In addition to the above charges for professional services (including routine expenses), we require reimbursement for the following items:

A. IN-HOUSE EXPENSES

Reproduction/Plotting:	Xerox Copies	\$0.10/page
	Color Copies	\$0.50/page
	Wide Format Copies	\$0.30/sq. ft.
	Blueprints	\$0.50/sq. ft.
	Bond Plotting – Black & White	\$2.00/sq. ft.
	Bond Plotting – Color	\$4.00/sq. ft.
	Vellum Plotting	\$4.00/sq. ft.
	Mylar Plotting	\$5.00/sq. ft.
Telefax (Outgoing only):		\$1.00/page
Mileage:	Personal Vehicle	\$0.60/mile
	Company Vehicle	\$0.70/mile

OR

5% OF TOTAL PERSONNEL FEES

B. OTHER EXPENSES

Company Vehicles	\$15.00/hour
Survey Vehicles	\$15.00/hour
Other Out-of-Pocket Expenses/Supplies/Travel	Cost + 10%
Equipment Usage	See Attached Schedule
Consultants/Outside Services	Cost + 10%
Construction Services	Cost + 10%
Per Diem for Living Expenses	Federal Rates
CADD Computer Usage	\$10.00/hour
Field Computer Services	\$40.00/week
GPS Survey Equipment Services	\$40.00/hour

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 (909) 860-7777

EQUIPMENT RENTAL RATES
 (Effective January 1, 2013 to December 31, 2015)

TYPE OF EQUIPMENT	DAY	WEEK	MONTH
4 Gas Range Meter CH4, H2S, CO, O2 (Sentinel 44)	\$75	\$200	\$500
Alpha - 1 Personal Sampling Pump	\$75	\$200	\$500
Disposable Bailer	\$20/each	n/a	n/a
CO2 Calorimetric Analysis Tubes	\$40	\$125	\$250
Downhole Camera	\$75/hr	n/a	n/a
Dupont Dosimeter Mark-3 (Personal Sample Pump)	\$50	\$150	\$300
Flow Calibrator (Gilian)	\$50	\$150	\$300
Gas Extraction Monitor (GEM 500 / 2000 / 2000 Plus)	\$125	\$350	\$900
Lung Sampler (Nutech 218)	\$100	\$300	\$800
Mini-Ram Data Logger	\$40	\$125	\$250
Mini-Ram Dust Meter	\$50	\$150	\$300
Organic Vapor Analyzer (OVA128)	\$125	\$400	\$1,000
Photo Ionization Detector (OVM580B)	\$125	\$400	\$1,000
Sample Train (Gas Extraction Pump)	\$50	\$150	\$300
Soil Auger/Sampler	\$30	\$90	\$180
Sounder (Liquid Level Indicator)	\$40	\$125	\$250
Horiba Meter	\$50	\$200	\$400
MiniRae 2000	\$75	\$200	\$500
GT Surveyor	\$75	\$200	\$500
Groundwater Sampling Equipment	\$25/hour	n/a	n/a
Company Vehicle	\$120	\$480	\$1,250
Field Sampling Supplies:	100/day	n/a	n/a
LEVEL C (Per Person)	\$150	n/a	n/a
Respirator with Cartridge (full or half faced)			
Tyvek Coveralls			
Outer Gloves			
Glove Liners			
Neoprene Boots			

EXHIBIT D

PROJECT AUTHORIZATION
Project No. 000
[To be prepared for each project.]

1. Except as hereinafter provided, the services provided by the Consultant under this Project Authorization (hereinafter referred to as "P.A.") shall be subject to the terms and conditions set forth in the Professional Design Services Master Agreement made and entered into by and between the County of Stanislaus ("County") and [Company Name] ("Contractor"), on [Insert Date], 20__.
2. The Consultant shall provide services under the Master Agreement and this Project Authorizations. as set forth in the Master Agreement Exhibits A and B and/or the Consultant's Proposed Project Scope of Work dated [Insert Date], 2012.
3. Consultant will be compensated for the services described herein in accordance with the Section 2.0 of the Master Agreement. The maximum amount to be paid by the County for services provided under this Project Authorization. shall not exceed \$?00,000, including, without limitation, the cost of any subcontractors, consultants, experts or investigators retained by the Consultant to perform or to assist in the performance of its work under this Project Authorization.
4. The term of this Project Authorization shall commence as stated in the Project Notice to Proceed and continue until all services described herein are completed, unless previously terminated as provided herein or as otherwise agreed to in writing by the parties. Consultant's services described herein shall be performed in strict compliance with this Project Authorization.

IN WITNESS WHEREOF, the parties hereto have caused this Project Authorization, Project Authorization No. 000? to be executed by and through their respective authorized officers:

COUNTY OF STANISLAUS
Department of Environmental Resources

TETRA TECH BAS, INC.

By: _____
Jami Aggers
Interim Director

By: _____
Bryan A. Stirrat
President

APPROVED AS TO FORM:
John P. Doering
County Counsel

By: _____
Thomas E. Boze
Deputy County Counsel



DEPARTMENT OF ENVIRONMENTAL RESOURCES
 3800 Cornucopia Way, Suite C, Modesto, CA 95358
 Phone: (209) 525-6770
 Fax: (209) 525-6773

PROJECT AUTHORIZATION

for

Monitoring, Sampling, Testing and Reporting at Geer Road Landfill

Project Number 13-001-SMG

A. Terms and Conditions

Except as hereinafter provided, the services provided by the Contractor under this Project Authorization and Attachment A, shall be subject to the terms and conditions set forth in *Master Agreement For Professional Design Services* number A101412 made and entered into by and between the County of Stanislaus ("County") Tetra Tech BAS Inc., ("Consultant"), on January 1, 2013.

B. Scope of Work

Consultant shall provide all of the labor, materials, equipment, supplies and supervision to perform monitoring, sampling, testing and reporting services at the County's Geer Road Landfill as described below:

1. Leachate Monitoring

Two leachate wells are present at the site. Consultant shall monitor on a quarterly basis the liquid levels (if present) within these wells. Consultant shall collect Samples of liquids from these wells as part of the groundwater monitoring activities discussed in the following section.

2. Groundwater Monitoring

2.1 The groundwater and leachate monitoring network at the Geer Road Landfill is comprised of 35 groundwater monitoring wells and two leachate monitoring wells. Thirty-Two (32) of the groundwater wells are designated as shallow wells (screened in the first saturated zone), and the remaining twenty (20) are considered deep wells, which are typically screened 30 to 50 feet below the static water level in the shallow zone. The wells are divided into Group I wells, which are sampled on a quarterly basis, and Group II wells, which are sampled semi-annually.

2.1.1 The following summarizes the current number of wells comprising the groundwater monitoring network, the frequency at which those wells are sampled and the number of analyses.

a. 32 Shallow Wells

i. 20 Shallow Wells Sampled Quarterly:

MW-2S, MW-3S, MW-4S, MW-5S, MW-8S, MW-9S, MW-14S, MW-15S, MW-23S, MW-24, MW-26S, MW-27S, MW-28S, MW-29S, MW-30S, PZ-1, PZ-2, PZ-3, PZ-4, PZ-6

ii. 12 Additional Shallow Wells Samples Semi-Annually:

MW-1S, MW-7S, MW-10S, MW-11S, MW-12S, MW-13S, MW-16S, MW-17S, MW-18S, MW-19S, MW-21S, MW-22S

b. 20 Deep Wells

i. 14 Deep Wells Sampled Quarterly :

MW-1D, MW-2D, MW-3D, MW-4D, MW-15D, MW-23D, MW-24D, MW-25D2, MW-25D3, MW-26D, MW-27D, MW-28D, MW-29D, MW-30D

ii. 6 Additional Deep Wells Sampled Semi-Annually:

MW-7D, MW-17D, MW-18D, MW-19D, MW-21D, MW-22D

c. 4 Private Wells

- i. 4 Wells Sampled Semi-Annually:
Streeter-Shop, Streeter-House, PMW-1, PMW-2
- d. 2 Leachate Wells
 - i. 2 Wells Monitored Quarterly:
LW-1, LW-2 (ASSUMED DRY)
- e. Analytical Testing Quantities:
 - i. Quarterly Events:
 - 38 Primary Samples
 - 2 Blind Duplicate Samples
 - 6 Trip Blanks (VOCs Only)
 - 1 Field Blank (VOCs Only)
 - ii. Semi-Annually Events:
 - 56 Primary Samples
 - 2 Blind Duplicate Samples
 - 6 Trip Blanks (VOCs Only)
 - 1 Field Blank (VOCs Only)

2.2 The wells are further designated as background wells, detection monitoring wells, point of compliance wells, corrective action monitoring wells, and off-site monitoring wells. In addition, the site monitoring program includes two domestic wells located on the adjacent Streeter Property, and two wells located across Geer Road in the Pinewood Meadows Mobile Home Park.

2.3 Consultant understands the significance of the data being generated through the groundwater and leachate monitoring and sampling activities at the Geer Road Landfill site. Data gathered through these activities shall be relied upon as the basis for site compliance, for determinations regarding the effectiveness of corrective action measures currently in place, and for potential future expansion of those measures. Consultant shall follow strict standards when performing groundwater sampling protocols to ensure that the samples accurately represent the groundwater conditions beneath the site. Consultant shall implement the following monitoring and sampling protocols in performing routine monitoring and sampling of groundwater monitoring wells.

2.3.1 Prior to initiation of any field activities, Consultant shall notify the County of the date and time of the sampling event.

2.3.2 Consultant shall ensure that the scope of all monitoring, sampling, and testing is performed in accordance with the site specific Monitoring and Reporting Program (MRP) by internally communicating between the Consultant's Groundwater Project Manager, Consultant's project analytical laboratory (BC Labs), and Consultant's field sampling crews. Consultant's Groundwater Project Manager shall prepare and distribute a sampling and testing summary to the Consultant's project Field Manager and BC Labs one (1) month prior to initiation of field activities in order to ensure the timeliness of sample container deliveries. BC Labs shall use the summary as a guide to prepare sample container packages, and the Consultant's field crews shall use the summary as a cross check upon container delivery. Sample containers shall be delivered by BC Labs one (1) week prior to the start of sampling activities. Containers shall be stored in a clean secure area, away from any potential contaminant sources.

2.3.3 Consultant shall use the sampling and testing summary, during sample collection activities, to allow the Consultant's field crews to confirm that all samples have been collected. The sampling and testing summary shall also assist the Consultant in the preparation of sample tracking paperwork, including chain-of-custody documentation. Upon receipt of the samples at the lab, the summary shall provide an added level of quality control that the lab can use to ensure that all of the proper samples have been collected in the correct containers. Should the lab determine that the delivered containers are inconsistent with the required analyses, the Consultant's Groundwater Project Manager shall be notified immediately by the lab, and steps shall be taken by the Consultant to re-collect samples as necessary and/or to determine whether sufficient samples exist to allow for performance of all the required analyses. Upon receipt of samples, the lab shall complete a Sample Receipt Form, which shall be part of the final testing report.

- 2.3.4 Consultant shall, at the beginning of each day of field activities and between each sampling location, decontaminate all monitoring equipment being introduced into the site wells by using a non-phosphate wash solution, followed by two rinses with de-ionized water.

- 2.3.5 Consultant shall measure water levels in the designated wells comprising the site monitoring network, before initiation of sample collection activities at any site. Water levels shall be measured using an electronic water level indicator, to an accuracy of ± 0.01 ft., prior to initiation of any well purging and sampling. During collection of water level measurements, Consultant's field personnel shall evaluate the condition of each well to be sampled and notify the County immediately, through the established lines of communication, of any observed evidence of damage, tampering, or vandalism. Rapid notifications shall help to ensure timeliness in the completion of field sampling activities.

 - 2.3.6 Following completion of water level monitoring activities, Consultant shall purge the wells to remove any stagnant water that may not be representative of formation. During purging, discharged water shall be monitored for electrical conductivity, temperature, salinity, turbidity, dissolved oxygen, and pH, to confirm that these parameters have stabilized and that fresh formation water is being produced. This data shall be recorded on a pre-printed Groundwater Well Sampling Log. Consultant shall strictly follow all manufacturers' recommendations regarding proper use and calibration of these field monitoring instruments. At a minimum, units shall be calibrated daily in the field at the start and end of each day of sampling and, as-needed, based on field encountered conditions. Consultant shall transfer purged water directly to the GWETS treatment system.
 - 2.3.7 Consultant shall collect water samples (either from purged groundwater monitoring wells or grab samples collected from leachate wells or off-site domestic wells) into laboratory-provided containers with appropriate preservatives, and immediately placed into a field cooler with ice at a temperature of 4°C. Consultant shall filter samples designated for metals analysis (if necessary) through a 0.45-micron filter in the field. Consultant shall collect in duplicate trip blanks, field blanks, equipment blanks (for bailed wells), in accordance with the site sampling program, and results of these analyses shall serve to demonstrate the accuracy and reliability of the sampling and analytical testing program.
 - 2.3.8 Consultant shall schedule sample pickup for each day of sampling to ensure that samples arrive at the lab within 24 hours of collection. Samples shall be transported under strict chain-of-custody (COC) protocols. Consultant shall complete a COC form in the field, detailing the sample ID numbers, time and date of collection, and required testing. The COC form shall be signed by the person collecting the samples and all those retaining sample custody until delivery to the lab.
 - 2.3.9 Consultant shall perform necessary data validation activities, address any issues related to potential field or laboratory introduced contamination, and/or conduct any required re-testing related to tentatively identified releases upon receipt of the lab results of analytical tests (normally within two weeks of receipt of collected samples). In addition, prompt analytical testing will allow, if necessary, to re-analyze a sample within prescribed holding times without a need to re-sample.
 - 2.3.10 Should there be an indication of laboratory or field contamination, a review of the facilities and practices potentially contributing to the specific contamination shall be performed by the Consultant. This item service is included in the price and includes the following, if required:

 - a. Assessment of the particular contaminant and identification of common sources
 - b. Review of field data sheets, field notes, and COCs
 - c. Interviews with field and/or laboratory personnel regarding procedures and practices conducted
 - d. Direct inspection of field and laboratory facilities
 - e. Auditing of field and/or laboratory personnel during performance of their work
 - 2.3.11 Upon determination of the cause, or probable cause of the suspected field and/or laboratory introduced contamination, but not more than 30 days following identification of the suspected contamination, Consultant shall provide the County with proposed corrective actions and/or modifications of protocols that shall be implemented to prevent a recurrence. The development and presentation of proposed corrective actions and/or modifications of protocols is included in the total not to exceed price of this Project Authorization.
 - 2.3.12 As necessary and in accordance with the site MRP, Consultant shall collect samples from any leachate seeps observed at the time of site sampling activities. Should a leachate seep be observed, Consultant shall notify the County immediately. At the County's direction, Consultant shall assist the County in the preparation of the associated and required written report to the RWQCB.

3. Groundwater Elevations and Flow

3.1 Consultant shall take depth to groundwater measurements in conjunction with the groundwater monitoring activities described in the previous section. Data collected from these activities shall be used to determine groundwater gradients, flows and velocities in accordance with the site MRP. Consultant shall include these in the quarterly and annual reports.

4. Surface Water Monitoring (Sedimentation Basin and Tuolumne River)

4.1 Consultant shall perform monitoring of the sedimentation basin at the site in accordance with the Revised MRP as described in the following section.

5. Sedimentation Basin and Tuolumne River Monitoring

5.1 In accordance with the requirements of the Revised MRP, Consultant shall collect samples from the discharge of the on-site sedimentation basin and the Tuolumne River during the months of July, August, September, October, and November of each year. Consultant shall, in accordance with the Tuolumne River Sampling and Analysis Plan (SAP Version 2), collect river samples from a total of three locations. Consultant shall collect samples from areas of low turbulence, and sample containers shall be submerged fully in order to ensure collection of representative samples. Consultant shall also collect a sample from the discharge of the sedimentation basin at the site, as prescribed in the MRP. Consultant shall conduct analytical testing of collected samples in accordance with the MRP and the SAP.

6. GWETS Monitoring

6.1 A Groundwater Extraction and Treatment System (GWETS) was installed at the Geer Road Landfill in 1993, with the intent of controlling, capturing and treating impacted groundwater beneath the site. The GWETS consists of 12 groundwater extraction wells, each equipped with a pneumatic pump that discharges to a main header leading to the GWETS treatment plant. Extracted VOC impacted groundwater is treated at the plant using granular activated carbon. Operation of the GWETS is critical to maintaining the site's compliance status. The system is currently under evaluation, and optimization strategies are being implemented to increase the capture capability of the system, especially along the western edge of the landfill where vinyl chloride impacts to groundwater have been identified and where no decreasing trend in VOC concentrations has been observed. Ongoing efforts to optimize the landfill gas extraction system (LFGES) are being utilized to provide long-term decreases in site-wide VOC impacts to groundwater.

6.2 Consultant shall perform weekly inspections of the entire GWETS system, including each of the extraction wells. In addition, Consultant shall perform a second weekly visit specifically to address filter maintenance and cleaning. During each primary weekly inspection, Consultant shall pay special attention to any evidence of damage, tampering or vandalism. Because of the location of the wells along the lightly secured site perimeter, it is critical that the wells be secure. The hydrogeology of the site is such that the wells should be able to operate in a continuous manner under most conditions. Consultant's field crews shall observe and record the operation of each pump and note any inconsistency in their operation. Each pump is equipped with a cycle counter that can be used to correlate instantaneous pumping rates to the average pumping rate since the previous inspection. Often, lack of operation of pneumatic pumps can be addressed through clearing of the pneumatic line or adjustment of the pump regulator at the surface. Should a pump be observed to be inoperable and surface repairs are unsuccessful in restarting it, the County shall be notified immediately and recommendations made to the County on how County should have repair made. Consultant understands that work considered public works of improvement is not authorized under this Agreement.

6.3 During each inspection, Consultant shall also inspect the GWETS treatment plant and any discrepancies in system operation shall be noted by the Consultant. Influent flows shall be recorded during each primary weekly inspection, and samples of the influent, midpoint between the two GAC vessels, and system effluent shall be collected by Consultant every 40 days to monitor for VOC breakthrough. In addition, accumulated solids in the system sedimentation tank shall be purged by Consultant to the filter bed, the system flow meters shall be inspected and calibrated, and routine air compressor maintenance shall be performed. Results of the influent and effluent sampling and recorded system flows shall be used by Consultant to calculate the mass of VOCs removed by the GWETS. This shall be included in the quarterly and annual reports described later in this Agreement. A report of system operation shall be submitted to the County at the end of each month detailing the activities performed, data collected, and recommendations for system repairs, upgrades, or modifications. Consultant understands that work considered public works of improvement is not authorized under this Agreement.

7. Landfill Gas Monitoring

7.1 Landfill Gas Plant Monitoring

At a minimum of once per month, Consultant shall monitor the flare station at the landfill for the following:

- a. Atmospheric temperature
- b. Atmospheric pressure
- c. Landfill gas temperature on the inlet to the plant
- d. Landfill gas pressure on the inlet to the plant
- e. Totalized landfill gas flow
- f. Flow rate into the plant from existing flow meter
- g. Total halogenated VOCs into the plant

7.2 In addition to the above listed monitoring parameters, Consultant shall increase the frequency of the monitoring to weekly monitoring at the landfill gas plant and expand the monitored parameters. The Geer Road Landfill currently operates at lower than typical methane concentrations. Due to this lower operating condition, Consultant shall evaluate on a weekly basis the landfill gas plant. Additionally, the monitoring of the landfill gas plant should be expanded to include the following items:

- a. Methane concentration
- b. Carbon dioxide concentration
- c. Oxygen concentration
- d. Balance gas concentration
- e. Landfill gas temperature at the inlet of the blower
- f. Landfill gas temperature at the outlet of the blower
- g. Static pressure at the inlet of the knock-out vessel
- h. Static pressure at the outlet of the knock-out vessel
- i. Blower run time and identification of operating blower
- j. Flow rate from manual determination (pitot tube) for meter accuracy verification
- k. Flame arrestor inlet and outlet static pressure
- l. Flame arrestor differential pressure
- m. Condensate level
- n. Condensate injection system operational status
- o. Quantity of condensate injected into the flare

8. Landfill Gas Well Monitoring

8.1 Monitoring of the landfill gas extraction wells is directly associated with the continued groundwater clean-up efforts currently being undertaken. The source of the groundwater contamination is at least partially caused by the ineffective design, maintenance and operation of the landfill gas collection system that has historically occurred at the Geer Road Landfill. The system that Consultant employs for the monitoring and adjustment of the collection system indicates that vinyl chloride concentrations in the majority of the vadose zone extraction wells have decreased.

8.2 Consultant's multiple step process for the monitoring and adjustment of a landfill gas collection system is as follows:

- a. Consultant's technicians perform an initial monitoring of the landfill gas collection system extraction components following Consultant's standard operating procedures (SOP).
- b. The results of this initial round of monitoring are provided to the Consultant's engineering staff, who reviews the results.
- c. The Consultant's engineering staff recommends adjustments based on numerous criteria including the gas composition, the ratio of specific compounds, the flow rate of the well and other key criteria.
- d. The adjustments are sent back to the Consultant's technician in the field, who then implements the adjusted recommendations from the Consultant's engineering staff.
- e. The Consultants technicians are not authorized to make adjustments without the direction of the Consultant's engineering staff.
- f. This allows the Consultant's key members of the project team to remain in control and responsible for the optimization of the collection system.

8.3 During these monitoring and adjustment events, Consultant records numerous items for both regulatory compliance and to assist in tuning compliance. The following list includes the minimum items that are included on the monitoring forms completed by the Consultant's technician and approved by the Consultant's engineering staff:

- a. Landfill gas composition
- b. Weather conditions
- c. Atmospheric temperature
- d. Atmospheric pressure
- e. Landfill gas temperature
- f. Initial and adjusted static pressure in the wellhead
- g. Landfill gas flow rate
- h. Vacuum availability

8.4 Consultant shall monitor and adjust the landfill gas collection system to continue the optimization of the landfill gas collection system to reduce the potential groundwater contamination. The monitoring of the landfill gas collection system shall consist of monitoring 98 vertical landfill gas extraction wells on a bi-weekly basis. This approach has been successful as the vinyl chloride concentrations in numerous vadose zone extraction wells has decreased significantly. By maintaining the frequency of the monitoring and adjustment of the collection system, the improved vadose zone vinyl chloride concentration is expected to continue.

9. Perimeter Monitoring Probe Monitoring

9.1 Consultant shall monitor, once per month, the perimeter methane monitoring probes along the perimeter of the landfill in accordance with Title 14 of the California Code of Regulations (CCR), Sections 17783.7 and 17783.9. Consultant shall monitor with a LandTec GEM-2000 with results being recorded both electronically and in hard copy. Consultant shall maintain the following information in a database to allow for the identification of potential trends in the monitoring probe data:

- f. Date and time of the monitoring event
- g. Certification of monitoring result accuracy by the technician
- h. Type of monitoring equipment used and serial number
- i. Meteorological conditions
 - i. Barometric pressure
 - ii. Ambient temperature
 - iii. Wind speed
 - iv. Precipitation (if applicable)
- j. Initial static pressure of the perimeter monitoring probe
- k. Purge time for each specific monitoring probe
- l. Methane concentration
- m. Carbon dioxide concentration
- n. Oxygen concentration
- o. Approval of engineering staff

9.2 Consultant has developed an SOP for the monitoring of perimeter methane monitoring probes. This method incorporates the use of an evacuation pump for removing at least one volume of annular space from the probe prior to sampling. This evacuation allows the monitoring to effectively evaluate the gas in the soil, rather than the gas that is trapped in the annular space prior to sampling. Consultant shall review and approve by a member of the Consultant's engineering staff, prior to being submitted to the County or any regulatory agency, the perimeter monitoring probe data sheets for quality control and data validation activities. If any issues are noted by the Consultant's engineering staff during this review the Consultant's technician shall be contacted to verify the accuracy of the information collected.

- a. Notify the County within 24 hours of detection, and
- b. Perform weekly follow-up monitoring of the probe and adjust the landfill gas collection system in an effort to reduce the methane concentration in the probe to below 5.0% by volume.
- c. Consultant shall monitor the perimeter monitor probe network consisting of 77 perimeter monitoring probes constructed to varying depths.

9.3 Through the use of the Consultant's database system, alerts shall be issued prior to the regulatory exceedence of 5.0% methane by volume. These alerts can be custom designed based on site specific criteria and allow advanced notice of potentially increasing methane concentration in the perimeter methane monitoring probes. The database system allows Consultant to be proactive in remedying potential regulatory issues before they are officially an exceedence.

9.4 Semi-Annual Plant Analysis

9.4.1 In accordance with the Landfill's Revised Monitoring and Reporting Plan (MRP), Consultant shall perform landfill gas sampling and analysis from the flare station on a semi-annual basis. Consultant shall perform the analysis following the United States Environmental Protection Agency Method TO-15 for volatile organic compounds and a fixed gas analysis through both gas chromatography and mass spectrometry for methane concentration.

9.5. Semi-Annual Extraction Point Analysis

9.5.1 In accordance with the Landfill's Revised MRP, Consultant shall perform landfill gas sampling and analysis from several extraction components semi-annually. The extraction points that must be sampled and analyzed are RW-11D, RW-12D, RW-14D, EW-22, and EW-59. Consultant shall perform the analysis following the United States Environmental Protection Agency Method TO-15 for volatile organic compounds and a fixed gas analysis through both gas chromatography and mass spectrometry for methane concentration.

9.6 Operational Conditions

9.6.1 Consultant understands that the operational run-time of the landfill gas plant is paramount to the success of the groundwater cleanup efforts to facilitate an increased operational time. One of these improvements was an update to the programmable logic control to allow for the electronic collection and organization of operational conditions of the flare station. Consultant shall maintain a current, updated database of the operational run time and associated other calculations required by the Revised MRP including hours in/not in operation, duration of downtimes, and percentage of overall time that the system is operational.

9.7 Controlled Landfill Gas Documentation

9.7.1 In accordance with the Revised MRP, the total volume of landfill gas that is treated by the control device must be monitored, recorded, and reported. Additionally, the Landfill's Permit to Operate has a condition that provides a maximum quantity of landfill gas that can be controlled per day (Permit to Operate, Condition 34). After a recent inspection performed by the San Joaquin Valley Air Pollution Control District, a form was developed that calculates and records the total landfill gas controlled on a daily and annual basis. Consultant shall use this form to monitor and record the total landfill gas flow rate controlled by the flare station. Consultant shall also use this form to calculate and track the total mass of volatile organic compounds that are controlled by the flare station based upon the results of the annual source test and the flow rate information that is recorded on a daily basis.

10. Resampling

10.1 In accordance with the site MRP, resampling shall be conducted by Consultant should analytical testing indicate the presence of contaminants in exceedence of established Concentration Limits for specific parameters. In addition to the multi-level quality assurance measures integrated into the sampling activities described previously, resampling shall help to eliminate the possibility of potential field or laboratory introduced contamination. It is critical that Consultant maintains the integrity of the analytical data due to the significant decision-making that will be based on the results.

11. Monitoring Reports

11.1 Consultant's shall consist of preparing quarterly and annual reports in a timely manner to meet the requirements of the RWQCB. Consultant's reporting formats shall follow the existing organization and format structure. Consultant shall perform a QA/QC review of the latest reports for inconsistencies with the actual program being implemented. Upon completion of this review, the findings shall be presented to the County for determination of appropriate action. It is not the intention of this review to change the reporting format that the County and RWQCB have become accustomed to. Rather, it is to ensure the accuracy of the reports and to maintain the County's standing with the RWQCB.

11.2 In order to facilitate the timeliness of the County's report submittals to the RWQCB, Consultant shall provide the draft reports to the County not less than three weeks prior to their due dates. Consultant shall be available to review any comments made by the County as necessary and appropriate. Once comments have been received and addressed, Consultant shall provide final versions of the reports for submittal to the RWQCB.

11.3 The reports prepared by Consultant shall present results of all monitoring activities as well as operational data for both the GWETS and the landfill gas system at the site. The final report each year shall include a summary of the entire year's activities and findings.

11.4 At a minimum, each quarterly report prepared by Consultant shall include the following:

- a. Cover Letter
- b. A Compliance Evaluation Summary that includes:
 - i. Field activities performed and the protocols followed for all monitoring points
 - ii. A map showing the monitoring and observation points
 - iii. A graphical presentation of groundwater gradient, direction of flow, and flow rate for the deep and shallow groundwater zones
 - iv. Laboratory reports
 - v. An evaluation of the effectiveness of leachate monitoring and control facilities
 - vi. A summary and certification of all Standard Observations for the disposal units
 - vii. A landfill gas report describing the results of monitoring, distribution of gas concentrations, evaluation of effectiveness, and system shut down information
 - viii. A discussion of the effectiveness of the Corrective Action Program including current and historical data and trends, and operational information from the GWETS

11.5 In addition to the above elements, Consultant shall include in the Annual Monitoring Summary Report:

- a. Trend graphs for all monitoring parameters and COCs over time
- b. Tabulated historical data including both field and laboratory data
- c. A comprehensive compliance record and any corrective actions that were implemented or are planned
- d. A written narrative of the monitoring results
- e. A comprehensive evaluation of the effectiveness of the Corrective Action Program

11.6 As part of the quarterly and annual reports, Consultant shall perform statistical evaluation of the site monitoring data in accordance with current state guidelines. Wherever possible, Consultant shall identify opportunities for reductions in sampling frequencies, monitoring points, and/or analytical testing without sacrificing the integrity of the site monitoring networks. Consultant shall discuss these opportunities with the County and provide recommendations regarding the long term benefits to the County in implementing any program changes. With the County's concurrence, Consultant shall include these recommendations in the final reports presented to the RWQCB.

12. NPDES Stormwater Pollution Prevention

12.1 At the direction of the County, Consultant shall assist in the preparation of NPDES Stormwater Pollution Prevention Plan Reports.

13. Surface Emissions Monitoring

13.1 In accordance with the San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4642, and the Landfill Methane Rule, Consultant shall perform surface emissions monitoring on a quarterly basis. The entire 144 surface acres of the disposal area of the landfill shall be monitored. Consultant shall obtain instantaneous measurements of total organic compound (TOC) concentrations immediately above the surface of the grids using a portable flame ionization detector (FID) that meets typical Title V specifications. Consultant's field staff shall hold the probe of the FID within 5 to 10 centimeters of the landfill surface while traversing the monitoring grids. Consultant's Field staff shall perform surface inspections during instantaneous surface monitoring to identify cracks or fissures in the landfill cover that could act as potential pathways for LFG to escape to the atmosphere. Consultant shall conduct meteorological monitoring in conjunction with the various sampling procedures requiring validation of wind direction and/or wind speed. Consultant shall perform surface monitoring 72 hours after the latest rainfall and when the average wind speed is less than 5 miles per hour and instantaneous winds speeds remain below 10 miles per hour.

13.2 Consultant's field staff shall mark surface areas with flags where TOC concentrations exceed 1,000 ppmv, identifying areas in need of remediation. To initiate remediation, the Consultant shall notify the County Project Manager of exceedence areas within 24 hours of identification. To track remediation of exceedence areas, Instantaneous Surface Monitoring Data Sheets shall be filled out by Consultant and distributed to appropriate Consultant personnel. Consultant shall provide remediation of exceedence areas by providing additional cover material and compacting and/or adjusting LFG extraction wells to increase the extraction rate in areas adjacent to exceedence areas. Consultant shall re-test remediated areas within 10 working days of the initial monitoring. Consultant shall repeat this process TOC concentrations are below 1,000 ppmv.

13.3 If the monitoring results of the past events at the Landfill allow the reduced frequency in the monitoring of surface emissions from the Landfill, Consultant shall adjust accordingly the frequency in the monitoring of surface emissions required. Consultant shall report the information collected during this surface emission monitoring to the County in a written report within 30 days of the monitoring event. Consultant shall notify the County within 24 hours of identification, if exceedences of the regulatory requirement are observed. Consultant shall then perform adjustments to the landfill gas collection system in an effort to mitigate the surface emissions.

14. Leak Monitoring at the Blower Flare Station (BFS)

14.1 In accordance with the state mandated Landfill Methane Rule (LMR), Consultant shall examine on a quarterly basis the positive pressure side of the blowers. Consultant shall submit a written summary form to the County for their records after each event. If exceedences of the requirements are observed by the Consultant, the area that is leaking is identified and corrective action is performed by Consultant to repair the area of concern.

15. Non-Methane Organic Compound (NMOC) Testing

15.1 The Geer Road Landfill is currently a New Source Performance Standard (NSPS) exempt site. This exemption is due to the Tier II analyses that have been performed in accordance with 40 Code of Federal Regulations (CFR) 750 Subpart WWW. Tier II analysis is required by June 2016 therefore, the fee for this service is not included in this Project Authorization. Should the County and the Consultant agree to renew the Agreement, the Tier II analysis shall be performed in accordance with the NSPS standards and the fee for this service shall be negotiated and added by an amendment to this Project Authorization.

16. EPA and LMR Greenhouse Gas Annual Reporting

16.1 Both the EPA and the California Air Resources Board (CARB) require monitoring and reporting of greenhouse gas emissions from municipal solid waste landfills. Consultant shall use personnel who have extensive knowledge of the state and federal regulations for the completion of the greenhouse gas annual reporting for both the EPA and CARB.

17. Source Testing and Methane Destruction Efficiency Testing

17.1 Consultant shall annually conduct, source testing on the control system at the Geer Road Landfill through Consultant's subcontractor. This source testing shall be performed in accordance with the Landfill's Permit to Operate and SJVAPCD regulations. Consultant's experienced engineer shall perform oversight of their subcontractor performing the Source Testing. Consultant shall provide to the County, at least 30 days advance notice, of their intent to perform Source Testing. Consultant shall develop and submit testing protocols with the assistance of any subcontractors that shall be selected for the laboratory analysis portion of the Source Test.

18. Title V Semi-Annual Reports of Required Monitoring (RRM) and Annual Compliance Certification (COC)

18.1 Consultant shall develop both the Title V Semi-Annual RRM and the Annual COC. Consultant shall develop these reports at least three weeks in advance of the deadlines (June 30 and December 31) for review by the County in an effort to prevent delayed reporting.

19. Landfill Gas Extraction System Performance Monitoring

19.1 Consultant shall perform Landfill Gas Extraction System Performance Monitoring. Consultant shall monitor and adjust the extraction wells, and ensure the extraction system is operating at the optimal conditions for the existing equipment at the Landfill.

20. Health and Safety Plan

20.1 Prior to initiation of any field activities under this contract, Consultant shall provide the County with a comprehensive Site Specific Health & Safety Plan (HSP) that complies with current OSHA and Cal-OSHA standards. The Site Specific HSP shall identify key project health and safety personnel and their responsibilities. It shall further identify the physical, chemical, and biological hazards associated with performing the prescribed scope of work at the project site, and provide measures that shall be undertaken to mitigate these hazards. Finally, the Site Specific HSP shall include an emergency response plan and the location of the designated emergency clinic in the event of a health and safety incident at the site. The Site Specific HSP shall be evaluated and updated on an annual basis.

21. Regulatory Meetings

21.1 Given the current regulatory status and high priority of this site to both the County and the RWQCB, it is anticipated that meetings with the RWQCB shall be required throughout the performance period of this project. Consultant shall attend a total of four meetings per year through the duration of this contract. During these meetings, Consultant shall provide the County with technical support in presenting the current site status, the progress of the various activities at the site, and any planned activities. Consultant's Program Manager and either the Consultant's Groundwater Project Manager or the Consultant's Landfill Gas Project Manager shall attend each of these meetings in support of the County.

C. Project Timeline

Consultant staff shall utilize the general maintenance schedules as shown below. Consultant understands that these schedules are not comprehensive and that both the County and the Consultant shall revise the schedule based on a thorough study of the equipment in place, recommendations by the equipment manufacturers, and relevant wear patterns determined by the site visit and records review. Listed below are general maintenance tasks and frequencies to be performed at each of the sites.

Parameter	Frequency
Leachate Monitoring	
Monitor LW-1 and LW-2	Quarterly
Groundwater Monitoring	
Group I Wells	Quarterly
Group II Wells	Semi-Annually
Streeter Property wells	Quarterly
Pinewood Meadows wells	Quarterly
COCs	Every Five Years
Groundwater Elevation	Quarterly
Groundwater Flow	Quarterly
Surface Water Monitoring	
Stormwater Monitoring	1 st Storm Event plus 1 Other Storm Event
Sedimentation Basin / River Monitoring	
Sedimentation Basin Monitoring	Quarterly
Tuolumne River Monitoring	Quarterly

GWETS Monitoring	
GWETS Inspection	Weekly
Extraction Wells	Weekly
Pumps	Weekly
Influent Water Sampling	Every 40 Days
Landfill Gas Monitoring	
LFG Plant Monitoring	Monthly (Weekly Recommended)
Extraction Well Monitoring	Monthly (Bi-weekly Recommended)
Perimeter Probe Monitoring	Monthly
LFG Plant Analysis	Semi-Annually
RWQCB Extraction Well Analysis	Semi-Annually
Plant Run-Time Calculation	Annually (Continuous Recommended)
Volume of LFG Treated Calculation	Annually (Continuous Recommended)
Surface Emissions Monitoring	
Instantaneous Monitoring	Dependent on Approved Alternative
Integrated Sampling	Dependent on Approved Alternative
Leak Monitoring	
Leak Monitoring at LFG Plant	Quarterly
NMOC Testing	
Tier II Analysis	Every 5 Years
EPA and LMR Greenhouse Gas Reporting	
EPA Reporting	Annually
LMR Reporting	Annually
Source Testing and Methane Destruction Efficiency Testing	
Source Testing / CH4 Destruction Testing	Annually
Title V RRM and COC	
Reports of Required Monitoring (RRM)	Semi-Annually
Certification of Compliance (COC)	Annually
Landfill Gas Extraction System Performance Monitoring	
Performance Monitoring	Continuous

D. Project Authorization Period

Services shall commence on or about January 1, 2013, and end when Master Agreement term ends, unless terminated sooner.

F. Compensation

The Consultant shall be compensated for the services provided under the Agreement and this scope of work as follows:

1. Project Price

1.1 The below project pricing is devised to allow the County the ability to identify costs associated with the frequency of tasks performed in a given project. The Consultant shall be compensated on a time and material basis, based on the rates set forth below and in the Master Agreement to perform the work associated with each task, not to exceed the amounts listed below. Maximum Total Task Price includes fees and reimbursable expenses that have been agreed to by both parties in accordance with the Master Agreement Exhibit C – Fee Schedule. The County shall not reimburse for fax, phone, postage or copies and other items as identified in Exhibit C – Fee Schedule.

- 1.2 A Summary breakdown of the Project fees is attached.
- 1.3 A detailed breakdown of Reimbursable Expenses is included in the attached.
- 1.4 **PROJECT TOTAL: \$2,979,446.00**
- 1.5 Project total consists of the following:
 - 1.5.1 \$2,754,446 for the 3 year basic contract services
 - 1.5.2 \$225,000 for emergency/non-routine

*Note: Invoices submitted for cost under the following categories shall be in accordance with this Project Authorization and Master Agreement Exhibit C.

G. Payment and Invoicing

- 1. The terms of payment are Net 30 days after approval of the invoice.
- 2. Consultant shall submit a detailed invoice for work actually completed. The invoice is to include but not be limited to the following information: hours worked by Consultant's Staff, the title of the Staff, billable rate, actual copies of equipment rental invoices, detailed information on equipment being rented, and reimbursable items that are reasonable, necessary and actually incurred by the Consultant in connection with the services. All invoices including reimbursable items shall have appropriate back up documents (i.e., copies of receipts) attached to the invoices. Consultant shall be compensated for services rendered and accepted under this Agreement and shall be paid monthly, in arrears, on a time and material basis not to exceed the per task totals for work performed and services provided.
- 3. The County shall pay the Consultant 30 days after approval of the invoice.

Invoices shall be mailed or delivered to the Department indicated below. The remit to address is:
 Stanislaus County
 Department of Environmental Resources Landfill
 Attention: Jami Aggers
 3800 Cornucopia Way, Suite C
 Modesto, California 95358

H. Representatives

The County's representatives are Jami Aggers, (209) 535-6768 and Gerry Garcia, (209) 837- 4816. The Consultant's representatives are Bryan Stirrat as the primary contact, Lee Daigle as Landfill Gas contact and Greg Acosta as the Groundwater contact.

I. Professional Services

All professional services to be provided by Consultant pursuant to this Agreement shall be provided by personnel experienced in their respective fields and in a manner consistent with the standards of care, diligence and skill ordinarily exercised by professional consultants in similar fields and circumstances in accordance with sound professional practices. Consultant also represents that it is familiar with all laws that may affect its performance of this Agreement and shall advise County of any changes in any laws that may affect Consultant's performance of this Agreement. Public Works of Improvement or Prevailing Wage Work shall not be performed by Consultant under this Agreement. Public Works of Improvement work is defined in Public Contract Code 22002 as construction, reconstruction, erection, alteration, renovation, improvement, demolition and repair work involving any publicly owned, leased, or operated facility. "Public Project" does not include maintenance work described as follows: routine, recurring, and usual work for the preservation or protection of any publicly owned or publicly operated facility for its intended purposes.

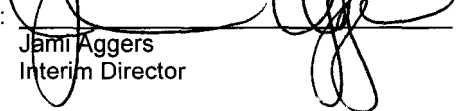
J. Counterparts

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

(Signatures on the next page)

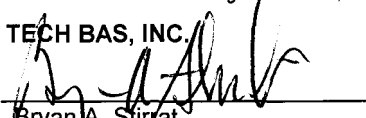
IN WITNESS WHEREOF, the parties have executed this Project No. 13-001-SMG on January 1, 2012.

COUNTY OF STANISLAUS
Department of Environmental Resources

By: 
Jami Aggers
Interim Director

"County"

TETRA TECH BAS, INC.

By: 
Bryan A. Stirrat
President

"Consultant"

APPROVED AS TO FORM:
John P. Ddering
County Counsel

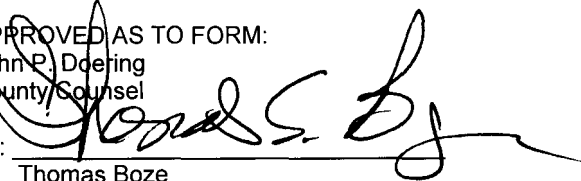
By: 
Thomas Boze
Deputy County Counsel

TABLE 3.3
Geer Road Landfill
Environmental Monitoring, Testing, Sampling and Reporting
3-YEAR COST SUMMARY

DESCRIPTION	2013			2014			2015			TOTAL 3-YEAR COST
	COST PER TASK	# PER YEAR	TOTAL ANNUAL COST	COST PER TASK	# PER YEAR	TOTAL ANNUAL COST	COST PER TASK	# PER YEAR	TOTAL ANNUAL COST	
GROUNDWATER TASKS										
a. Leachate Monitoring (2 Wells Monthly)										
Monthly Liquid Level Monitoring	\$621	12	\$7,452	\$621	12	\$7,452	\$621	12	\$7,452	\$22,356
			\$7,452			\$7,452			\$7,452	\$22,356
b/c. Groundwater Monitoring (57 Monitoring Wells, 2 Domestic Wells, 2 Mobil Home Park Wells)										
Quarterly Monitoring & WLS - All Parameters	\$25,578	2	\$51,156	\$25,578	2	\$51,156	\$25,578	2	\$51,156	\$153,468
Semi-Annual Monitoring & WLS - All Parameters	\$31,106	2	\$62,212	\$31,106	2	\$62,212	\$31,106	2	\$62,212	\$186,636
			\$113,368			\$113,368			\$113,368	\$340,104
d/e. Surface Water Monitoring										
Sampling Sedimentation Basin & River	\$2,396	5	\$11,980	\$2,396	5	\$11,980	\$2,396	5	\$11,980	\$35,940
			\$11,980			\$11,980			\$11,980	\$35,940
f. GWELS System Monitoring & Monthly Reporting										
Weekly Monitoring	\$3,366	52	\$175,032	\$3,366	52	\$175,032	\$3,366	52	\$175,032	\$525,096
Monthly Sampling	\$5,744	12	\$68,928	\$5,744	12	\$68,928	\$5,744	12	\$68,928	\$206,784
			\$243,960			\$243,960			\$243,960	\$731,880
g. Groundwater Monitoring (Resampling - AS NEEDED COST PENDING)										
Quarterly Monitoring - Non-VOCs & WLS										
COC Round Sampling (Q4 - 2015)										
h. Monitoring Reports										
Quarterly Monitoring Report	\$28,909	3	\$86,727	\$28,909	3	\$86,727	\$28,909	3	\$86,727	\$260,181
Annual Monitoring Report	\$38,686	1	\$38,686	\$38,686	1	\$38,686	\$38,686	1	\$38,686	\$116,058
			\$125,413			\$125,413			\$125,413	\$376,239
i. NPDES - SWPPP Report (Scope of Support Not Defined)										
Annual Report										
Winterization Report										
j. Health and Safety Plan										
Site Specific HSP	\$1,876	1	\$1,876	\$1,876	0.5	\$938	\$1,876	0.5	\$938	\$3,752
			\$1,876			\$938			\$938	\$3,752
k. Regulatory Meetings (2 per year) - Total Annual										
Sacramento Meetings (w/ RWQCB: Total 2)	\$10,484	1	\$10,484	\$10,484	1	\$10,484	\$10,484	1	\$10,484	\$31,452
Modesto Meeting (County Offices: Total 2)	\$10,484	1	\$10,484	\$10,484	1	\$10,484	\$10,484	1	\$10,484	\$31,452
			\$20,968			\$20,968			\$20,968	\$62,904
			\$525,017			\$524,079			\$524,079	\$1,573,175
LANDFILL GAS TASKS										
a. Landfill Gas Monitoring										
Monthly Monitoring (LFG Plant, Extr. Wells, Probes)	\$23,706	12	\$284,472	\$23,706	12	\$284,472	\$23,706	12	\$284,472	\$853,416
Semi Annual Sampling (LFG Plant & Wells)	\$5,896	2	\$11,792	\$5,896	2	\$11,792	\$5,896	2	\$11,792	\$35,376
Reporting (Annual - for inclusion in site report)	\$7,215	1	\$7,215	\$7,215	1	\$7,215	\$7,215	1	\$7,215	\$21,645
			\$303,479			\$303,479			\$303,479	\$910,437
b. Surface Waters (Annual - Integrated Surface Water Monitoring - Annual)										
Instantaneous Surface Monitoring (Annual)	\$9,299	1	\$9,299	\$9,299	1	\$9,299	\$9,299	1	\$9,299	\$27,897
Integrated Surface Sampling (Annual)	\$10,301	1	\$10,301	\$10,301	1	\$10,301	\$10,301	1	\$10,301	\$30,903
			\$19,600			\$19,600			\$19,600	\$58,800
c. Gas Monitoring at Heavy Equipment										
Monitoring of pressurized piping	\$2,750	4	\$11,000	\$2,750	4	\$11,000	\$2,750	4	\$11,000	\$33,000
			\$11,000			\$11,000			\$11,000	\$33,000
d. Non-Method Organics (NMO) Testing										
Tier 2 NMO Testing (June 2016)										
e. Generation of O&M Reports										
EPA Annual Report (Annually in March)	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$8,058
LMR Annual Report (Annually in March)	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$2,686	1	\$2,686	\$8,058
			\$5,372			\$5,372			\$5,372	\$16,116
f. Source Testing										
Source Testing & Reporting	\$13,565	1	\$13,565	\$13,565	1	\$13,565	\$13,565	1	\$13,565	\$40,695
			\$13,565			\$13,565			\$13,565	\$40,695
g. WQS Reporting										
Semi-Annual Reports for RRM (June / Dec.)	\$3,975	2	\$7,950	\$3,975	2	\$7,950	\$3,975	2	\$7,950	\$23,850
Annual COC Report (June)	\$2,419	1	\$2,419	\$2,419	1	\$2,419	\$2,419	1	\$2,419	\$7,257
			\$10,369			\$10,369			\$10,369	\$31,107
h. Landfill Gas Data and Stack Probe Data Monitoring										
Annual Monitoring	\$2,531	12	\$30,372	\$2,531	12	\$30,372	\$2,531	12	\$30,372	\$91,116
			\$30,372			\$30,372			\$30,372	\$91,116
			\$393,757			\$393,757			\$393,757	\$1,181,271
TOTAL			\$918,774			\$917,836			\$917,836	\$2,754,446

TABLE 3.1
Geer Road Landfill
Environmental Monitoring, Testing, Sampling and Reporting
COST BREAKDOWN FOR GROUNDWATER TASKS

DESCRIPTION	LABOR COSTS										DIRECT COSTS			TOTAL ESTIMATED COSTS PER EVENT
	Princ.	Div Eng.	Proj Mgr.	Env. Spec.	Eng I	Tech II	Admin Asst.	CAD Dsgn	Total Hours	Total Labor Cost	BC Labs	Equip/Supplies/Permits/Travel	Vehicle Use	
	Unit Rate	hr. \$264	hr. \$213	hr. \$187	hr. \$98	hr. \$103	hr. \$76	hr. \$100	hr. \$133		cost+ 10%	hr \$15		
a. Leachate Monitoring (2 Wells Monthly)														
Monthly Liquid Level Monitoring		1		2		2			5	\$561			\$60	\$621
b/c Groundwater Monitoring (57 Monitoring Wells, 2 Domestic Wells, 2 Mobil Home Park Wells)														
Quarterly Monitoring & WLS - All Parameters		4		58		52			114	\$10,488	\$8,890	\$4,550	\$1,650	\$25,578
Semi-Annual Monitoring & WLS - All Parameters		4		65		59			128	\$11,706	\$12,640	\$4,900	\$1,860	\$31,106
d/e. Surface Water Monitoring														
Sampling Sedimentation Basin & River				2		10			12	\$956	\$960	\$300	\$180	\$2,396
f. CWETS System Monitoring & Monthly Reporting														
Weekly Monitoring					4	24			28	\$2,236		\$770	\$360	\$3,366
Monthly Sampling	2	6	6		16	2	4	2	38	\$5,394	\$270	\$50	\$30	\$5,744
h. Groundwater Monitoring (Resampling - AS NEEDED COST PENDING)														
Quarterly Monitoring - Non-VOCs & WLS		COST FOR THIS ITEM NOT PROVIDED DUE TO VARIABILITY DEPENDING ON THE QUANTITY OF WELLS REQUIRING RESAMPLE												
COC Round Sampling (Q4 - 2015)		COST FOR THIS ITEM NOT PROVIDED DUE TO VARIABILITY DEPENDING ON THE QUANTITY OF WELLS REQUIRING RESAMPLE												
i. Monitoring Reports														
Quarterly Monitoring Report	4	40	4	110	12		20	24	214	\$27,532		\$1,377		\$28,909
Annual Monitoring Report	4	52	8	130	16		36	30	276	\$35,606		\$3,080		\$38,686
j. NPDES - SWPPP Report (Scope of Support Not Defined)														
Annual Report		COST FOR THIS ITEM NOT PROVIDED DUE TO UNDEFINED SCOPE												
Winterization Report		COST FOR THIS ITEM NOT PROVIDED DUE TO UNDEFINED SCOPE												
r. Health and Safety Plan														
Site Specific HSP		2		8			4	2	16	\$1,876				\$1,876
s. Regulatory Meetings (2 per year) - Total Annual														
Sacramento Meetings (w/ RWQCB: Total 2)	16	16		2	2		2		38	\$8,234		\$2,250		\$10,484
Modesto Meeting (County Offices: Total 2)	16	16		2	2		2		38	\$8,234		\$2,250		\$10,484

1) Unit Rates are for 2013 through 2015 Only.

2) All line items are shown on a per event basis, except as noted.

TABLE 3.2
Geer Road Landfill
Environmental Monitoring, Testing, Sampling and Reporting
COST BREAKDOWN FOR LANDFILL GAS TASKS

DESCRIPTION	LABOR COSTS															DIRECT COSTS				TOTAL ESTIMATED COSTS PER EVENT	
	Princ. Eng.	Sr PM	PM	Proj Eng	Eng III	Eng I	Off Ser Clerk	Admin Assis	Chf Eng Tech	Eng Tech III	Eng Tech II	Sr. Proj Design	Proj Design	Principal	Total Hours	Total Labor Cost	LFG Lab		Equip/Supplies/Permits/Mileage		Vehicle Use
	Unit Rate	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	cost+	cost+			hr
	\$225	\$198	\$187	\$167	\$129	\$103	\$86	\$100	\$127	\$87	\$76	\$162	\$149	\$264			10%	10%		\$15	
g. Landfill Gas Monitoring																					
Monthly Monitoring (LFG Plant, Extr. Wells, Probes)	2		8	16		8	40	2			160			1	237	\$21,506			\$2,200		\$23,706
Semi Annual Sampling (LFG Plant & Wells)	1		1	4			8				24			1	39	\$3,856	\$2,040				\$5,896
Reporting (Annual - for inclusion in site report)	1		2	16	8		30	2						0.5	59.5	\$7,215					\$7,215
k. Surface Emission Monitoring (Assumes no detections during first four Quarterly events)																					
Instantaneous Surface Monitoring (Annual)	1		2	6		6		2			80				97	\$8,499			\$800		\$9,299
Integrated Surface Sampling (Annual)	1		2	12		6		2			80				103	\$9,501			\$800		\$10,301
l. Leak Monitoring at Blower Flare Station																					
Monitoring of pressurized piping	1		1	4			2	1			4	0.5	1	1	15.5	\$2,150			\$600		\$2,750
m. Non-Methane Organic Compound Testing																					
Tier 2 NMOC Testing (June 2016)																					
n. Greenhouse Gas Reports																					
EPA Annual Report (Annually in March)	1		1	4		10	4	1						0.5	21.5	\$2,686					\$2,686
LMR Annual Report (Annually in March)	1		1	4		10	4	1						0.5	21.5	\$2,686					\$2,686
o. Source Testing																					
Source Testing & Reporting	1		4	16		8		2	16					1	48	\$6,965		\$6,600			\$13,565
p. Title V Reporting																					
Semi-Annual Reports for RRM (June / Dec.)	1		2	8			16	4						1	32	\$3,975					\$3,975
Annual COC Report (June)	1		2	4			8	2						1	18	\$2,419					\$2,419
q. Landfill Gas Extraction System Performance Monitoring																					
Annual Monitoring	1		2	4			12	1						0.5	20.5	\$2,531					\$2,531

1) Unit Rates are for 2013 through 2015 Only.

2) All line items are shown on a per event basis, except as noted.

**GEER ROAD
WATER QUALITY MONITORING PROGRAM
LABORATORY ANALYTE LIST**

ANALYTE	METHOD	b/c - GW Monitoring			d/e - Surf. Wtr.	f - GWETS
		QTRLY	Semi Annual	COC Round	QTRLY	40 Day
GENERAL CHEMISTRY						
Bicarbonate		40	58	58	5	
Carbonate		40	58	58	5	
Chloride		40	58	58	5	
Cyanide	9101B			58		
Nitrate (as Nitrogen)		40	58	58	5	
Sulfate		40	58	58	5	
Sulfide	9030B			58		
Total Organic Carbon (TOC)				58		
Total Dissolved Solids (TDS)		40	58	58	5	2
Total Suspended Solids (TSS)				58	5	
METALS						
Aluminum	6010B			58		
Antimony	6010B			58		
Arsenic	7062	40	58	58		
Barium	6010B			58		
Beryllium	6010B			58		
Cadmium	7131A			58		
Calcium	6010B	40	58	58	5	
Chromium, Total	6010B			58		
Cobalt	6010B			58		
Copper	6010B			58	5	
Iron	6010B	40	58	58		
Lead	7421	40	58	58		
Magnesium	6010B	40	58	58	5	
Manganese	6010B	40	58	58		
Mercury	7470A			58		
Nickel	7521			58		
Potassium	6010B	40	58	58	5	
Selenium	7742			58		
Silver	6010B			58		
Sodium	6010B	40	58	58	5	
Thallium	7841			58		
Tin	6010B			58		
Vanadium	6010B			58		
Zinc	6010B			58		
CAM Metals (17)	See Above					
ORGANIC COMPOUNDS						
Chlorophenoxy Herbicides (1)	EPA 8151A			58		
Organophosphorus Compounds (1)	EPA 8141A			58		
Semi-Volatile Organic Compounds (1)	EPA 8270			58		
Volatile Organic Compounds (2)	EPA 8260	47	65		5	3
Volatile Organic Compounds (1)	EPA 8260			65		

NOTES:

- (1) - Analyte list from Table VI of the Revised Monitoring and Reporting Program No. R5-2011-0023
- (2) - Analyte list from Table V of the Revised Monitoring and Reporting Program No. R5-2011-0022

TETRA TECH BAS
 1360 Valley Vista Drive
 Diamond Bar, California 91765
 (909) 860-7777
SCHEDULE OF CHARGES

PERSONNEL	HOURLY RATE 2013 - 2015
Principal (P)	\$264
Principal Engineer (PRE)	\$225
Principal Solid Waste Planner	\$214
Division Engineer (DE)	\$213
Principal Administrator (PA)	\$204
Senior Project Manager (SM)/Chief Engineer (CE)	\$198
Project Manager (PM)	\$187
Project Engineer (PE) / Administrator (PAD)	\$167
Engineer V (E-V)	\$152
Engineer IV (E-IV)	\$137
Engineer III (E-III)	\$129
Engineer II (E-II)	\$122
Engineer I (E-I)	\$103
Engineer (E)	\$97
Senior Project Designer (SPD)	\$162
Project Designer (PD)	\$149
Senior Designer (SDD)	\$137
CADD Designer/Drafter (CD)	\$133
Designer (DD)	\$128
Senior Drafter (SD)	\$118
Drafter (D)	\$103
Senior CADD Operator (SCO)	\$97
CADD Operator (CO)	\$80
Regulatory Compliance Manager (RCM)	\$157
Senior Regulatory Compliance Specialist (SRS)	\$147
Regulatory Compliance Specialist (RS)	\$124
Senior Environmental Scientist (SNS)	\$156
Senior Environmental Specialist (SES)	\$136
Environmental Specialist II (ES-II)	\$125
Environmental Specialist I (ES-I)	\$109
Environmental Specialist (ES)	\$98
Estimator (E)/Specification Writer (SW)	\$130
Landscape Architect (LA)	\$127
Project Accountant/Analyst (AA)	\$89
Senior Project Coordinator (SPC)	\$130
Project Coordinator (PC)	\$112
Senior Technical Editor (STE)	\$96
Administrative Assistant (ADA)	\$100
Data (DP)/Word Processing Secretary (WP)	\$88
Office Services Clerk (OS)	\$86
General Clerk (C)/Typist (Y)	\$68
Data Analyst (DA)	\$99
Construction Manager (CM)	\$173
Construction Supervisor (CS)	\$146
Construction Engineering Technician (CET)	\$137
Chief Engineering Technician (CT)	\$127
Engineering Technician V (ET-V)	\$112
Engineering Technician IV (ET-IV)	\$100
Engineering Technician III (ET-III)	\$87
Engineering Technician II (ET-II)	\$76
Engineering Technician I (ET-I)	\$64
Engineering Technician (ET)	\$42
Chief of Survey Parties (CSP)	\$142
3-Man Survey Party (SP-3M)	\$312
2-Man Survey Party (SP-2M)	\$258
1-Man Survey Party with GPS (1M-GPS)	\$198

Overtime Premium is 50% of Personnel Hourly Rate
 (Effective January 1, 2013 - December 31, 2015)

TETRA TECH BAS, INC.
 (aka BRYAN A. STIRRAT & ASSOCIATES)
 1360 Valley Vista Drive
 Diamond Bar, California 91765
 (909) 860-7777

REIMBURSABLE CHARGES

(Effective January 1, 2013 to December 31, 2015)

In addition to the above charges for professional services (including routine expenses), we require reimbursement for the following items:

A. IN-HOUSE EXPENSES

Reproduction/Plotting:	Xerox Copies Color Copies Wide Format Copies Blueprints Bond Plotting – Black & White Bond Plotting – Color Vellum Plotting Mylar Plotting	\$0.10/page \$0.50/page \$0.30/sq. ft. \$0.50/sq. ft. \$2.00/sq. ft. \$4.00/sq. ft. \$4.00/sq. ft. \$5.00/sq. ft.
Telefax (Outgoing only):		\$1.00/page
Mileage:	Personal Vehicle Company Vehicle	\$0.60/mile \$0.70/mile

OR

5% OF TOTAL PERSONNEL FEES

B. OTHER EXPENSES

Company Vehicles Survey Vehicles Other Out-of-Pocket Expenses/Supplies/Travel Equipment Usage Consultants/Outside Services Construction Services Per Diem for Living Expenses CADD Computer Usage Field Computer Services GPS Survey Equipment Services	\$15.00/hour \$15.00/hour Cost + 10% See Attached Schedule Cost + 10% Cost + 10% Federal Rates \$10.00/hour \$40.00/week \$40.00/hour
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TETRA TECH BAS, INC.
(aka BRYAN A. STIRRAT & ASSOCIATES)
1360 Valley Vista Drive
Diamond Bar, California 91765
(909) 860-7777

EQUIPMENT RENTAL RATES
(Effective January 1, 2013 to December 31, 2015)

TYPE OF EQUIPMENT	DAY	WEEK	MONTH
4 Gas Range Meter CH4, H2S, CO, O2 (Sentinel 44)	\$75	\$200	\$500
Alpha - 1 Personal Sampling Pump	\$75	\$200	\$500
Disposable Bailer	\$20/each	n/a	n/a
CO2 Calorimetric Analysis Tubes	\$40	\$125	\$250
Downhole Camera	\$75/hr	n/a	n/a
Dupont Dosimeter Mark-3 (Personal Sample Pump)	\$50	\$150	\$300
Flow Calibrator (Gilian)	\$50	\$150	\$300
Gas Extraction Monitor (GEM 500 / 2000 / 2000 Plus)	\$125	\$350	\$900
Lung Sampler (Nutech 218)	\$100	\$300	\$800
Mini-Ram Data Logger	\$40	\$125	\$250
Mini-Ram Dust Meter	\$50	\$150	\$300
Organic Vapor Analyzer (OVA128)	\$125	\$400	\$1,000
Photo Ionization Detector (OVM580B)	\$125	\$400	\$1,000
Sample Train (Gas Extraction Pump)	\$50	\$150	\$300
Soil Auger/Sampler	\$30	\$90	\$180
Sounder (Liquid Level Indicator)	\$40	\$125	\$250
Horiba Meter	\$50	\$200	\$400
MiniRae 2000	\$75	\$200	\$500
GT Surveyor	\$75	\$200	\$500
Groundwater Sampling Equipment	\$25/hour	n/a	n/a
Company Vehicle	\$120	\$480	\$1,250
Field Sampling Supplies:	100/day	n/a	n/a
LEVEL C (Per Person)	\$150	n/a	n/a
Respirator with Cartridge (full or half faced)			
Tyvek Coveralls			
Outer Gloves			
Glove Liners			
Neoprene Boots			



DEPARTMENT OF ENVIRONMENTAL RESOURCES
3800 Cornucopia Way, Suite C, Modesto, CA 95358
Phone: (209) 525-6770
Fax: (209) 525-6773

AMENDMENT NO. 1

TO

PROFESSIONAL DESIGN SERVICES MASTER AGREEMENT

TETRA TECH BAS, INC.

This Amendment No.1 to the Master Agreement for Professional Design Services ("Amendment No. 1") by and between the County of Stanislaus ("County") and Tetra Tech BAS, Inc., ("Consultant") is made and entered into on June 25, 2013.

Whereas, the County and Consultant entered into a Master Agreement for Professional Design Services dated December 11, 2012 ("the Agreement"); and

Whereas, Paragraph 7.20 of the Master Agreement provides that the Agreement may be amended only by a written Amendment executed by both parties; and

Whereas, the County has a need to increase the Master Agreement's not to exceed amount by \$230,000 to compensate Consultant for services performed under Project Authorizations issued against this Agreement; and

Whereas this amendment is for the mutual benefit of County and Consultant;

Now, therefore, the County and Consultant agree as follows:

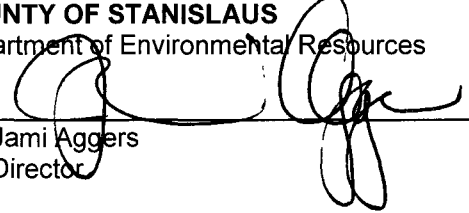

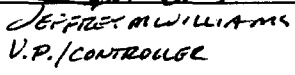

1. Section 2.1 - Compensation is amended as follows:

"For each task or project let under this Agreement Consultant shall be paid in accordance with the fee schedule set forth in Exhibit "C", attached hereto and made a part of this Agreement (the "Fee Schedule"). Consultant will be compensated on a time and materials basis, based on the hours worked by the Consultant's employees or subcontractors at the hourly rates specified in the Fee Schedule. Fee Schedule rates shall include direct salary costs, employee benefits, and overhead. The rates stated in the Fee Schedule are not adjustable during the term of this Agreement. Consultant's compensation under this Master Agreement shall in no case exceed **Three-Million, Three-Hundred and Nine Thousand, Four-Hundred and Forty-Six Dollars (\$3,309,446.00)** The County may retain ten percent of all periodic or progress payments made to the Consultant until completion and acceptance of all work tasks and County shall have right to withhold payment from Consultant for any unsatisfactory service until such time service is performed satisfactorily."

2. Except as stated herein, all other terms and conditions of the Agreement remain unchanged.

(Signatures on the next page)

In witness whereof, the parties have executed this Amendment on the date written above.

<p>COUNTY OF STANISLAUS Department of Environmental Resources</p> <p>By:  _____ Jami Aggers Director</p> <p>Date: _____</p> <p style="text-align: center;">"County"</p>	<p>TETRA TECH BAS</p> <p>By:  _____ Bryan A. Stirrat President</p> <p> _____ JEFFREY M. WILLIAMS V.P./CONTROLLER</p> <p>Date: _____</p> <p style="text-align: center;">"Consultant"</p>
<p>APPROVED AS TO FORM: John P. Doering County Counsel</p> <p>By:  _____ Thomas E. Boze Deputy County Counsel</p> <p>Date: _____</p>	



DEPARTMENT OF ENVIRONMENTAL RESOURCES
 3800 Cornucopia Way, Suite C, Modesto, CA 95358
 Phone: (209) 525-6770
 Fax: (209) 525-6773

PROJECT AUTHORIZATION

For

Implementation of the new Report of Waste Discharge

Project Authorization Number 13-002-SMG

A. Terms and Conditions

Except as hereinafter provided, the services provided by the Consultant under this Project Authorization and Attachment A, shall be subject to the terms and conditions set forth in *Master Agreement For Professional Design Services* number A101412 made and entered into by and between the County of Stanislaus ("County") Tetra Tech BAS Inc., ("Consultant"), on June 27, 2013.

B. Scope of Work

Consultant shall provide all of the labor, materials, equipment, supplies and supervision to perform services associated with the implementation of the new Report of Waste Discharge for the Geer Road Landfill. The work shall include 1) preparation for the attendance of meetings with the Central Valley Regional Water Quality Control Board (RWQCB) regarding the recently submitted Report of Waste Discharge (ROWD) and Plume Investigation Report (PIR); (2) support of the County's cost recovery for the site; and (3) implementation of the activities described in the County's March 15, 2013, letter to the RWQCB regarding additional activities being performed. The specific Tasks for work covered under this Agreement include:

TASKS

1. Meetings with the RWQCB or locally as needed
2. Cost Recovery Support
3. Sampling and Analysis of Background Groundwater Well
4. Preparation of a Verification Testing Work Plan
5. Evaluation of Triangle Ranch Monitoring Well
6. Preparation of Updated ROWD

Additional activities were included in the March 15, 2013, letter to the RWQCB. However, the specific scope of work for these items is subject to concurrence from the RWQCB, which is currently pending. The following describes each of the above listed tasks in greater detail.

TASK 1 – Meetings with the RWQCB or locally as needed

Consultant prepared and provided a presentation on February 26, 2013, which will be billed for under Project Authorization (PA) 13-001-SMG, to the RWQCB containing a detailed summary of the past 18 months of activities providing landfill gas system upgrades, a review of the updated groundwater numerical model, and a description of the proposed groundwater and/or landfill gas corrective action approach. The presentation incorporated responses to preliminary feed-back received by the County from the RWQCB regarding the ROWD and PIR. Under this PA, Consultant shall also attend additional RWQCB or local meetings as needed in support of the ROWD implementation

TASK 2 – Cost Recovery Support

Consultant shall meet with and provide support to the County's attorneys (Brown & Winters) in their ongoing cost recovery activities. The exact nature of the support activities required under this Task shall include but not be limited to attendance with periodic meetings; participation in conference calls; gathering, reproducing and distributing reports, work plans, invoices and other supporting documents; and at least one site visit. This is necessary to explain the nature of the needed work to assist in the determination of whether the expenses will be covered under the County's insurance.

TASK 3 – Sampling and Analysis of Background Groundwater Well

In April 2013, Consultant mobilized to the site to conduct routine groundwater sampling of existing background wells MW-24S and MW-24D which will be billed under PA 13-001-SMG. Consultant collected samples in accordance with the established protocols for the site and Consultant analyzed the samples consistent with the current monitoring reporting program. Consultant used the data from this sampling to establish proposed Water Quality Protection Standards for the site, which shall be included in the updated ROWD. In order for Consultant to develop a statistical baseline for developing water quality protection standards appropriate for the Geer Road Landfill, eight data points were required. This Task was performed to establish the eight data points for the First Semi-Annual Groundwater Monitoring Report for 2013 which is due July 31, 2013. Under this PA, it is assumed an interim technical memorandum regarding the proposed Standards shall be prepared prior to ROWD submittal, and that a meeting shall take place with the RWQCB and the County regarding this topic.

TASK 4 – Preparation of a Verification Testing Work Plan

In accordance with the County's March 15, 2013, letter to the RWQCB, the Consultant prepared and submitted a verification Testing Work Plan to perform aquifer testing of wells along the proposed alignment of the new GWETS; pilot scale aeration channel testing to demonstrate the effectiveness of this treatment technology; and percolation testing within the Triangle Ranch Property to allow for proper design of the infiltration design for the new GWETS which will be billed under PA 13-001-SMG. The work plan was submitted for County review and comment, and will subsequently be submitted to the RWQCB. Under this PA, it is anticipated that comments will be received from the RWQCB, which shall be addressed and a final work plan submittal provided. Also included in this task is a meeting with the RWQCB and County to review the proposed scope of work, and development of an implementation schedule for submittal to the County and the RWQCB. Implementation of the activities described in the work plan shall be covered under a separate agreement.

TASK 5 – Evaluation of Triangle Ranch Monitoring Well

Consultant reviewed past data with regard to hydrogeology and groundwater quality, and provided a technical memorandum to the County for submittal to the RWQCB regarding the justifications for not installing a new monitoring well along the north boundary of the Triangle Ranch Area. A memorandum was provided to the County for review prior to submittal to the RWQCB which will be billed to PA 13-001-SMG. Under this PA, it is anticipated that the RWQCB will have questions or comments to the memorandum and that a meeting or other Consultant staff time may be required for this task to respond to those questions or comments either in person or in writing.

TASK 6 – Preparation of Updated ROWD

Under this PA, based on the results of Tasks 3 through 5, and implementation of the Verification Testing Work Plan, Consultant shall provide an updated ROWD for submittal to the RWQCB. In addition to the elements of the ROWD provided to the RWQCB on December 27, 2012, the updated ROWD shall include:

- a. Proposed Water Quality Protection Standards for all organic and inorganic compounds based on the newly established background statistical baseline.
- b. A more detailed new GWETS design, which shall include a basis of design supported by the updated Groundwater Numerical Model.
- c. The Landfill Gas System performance criteria for system expansion.
- d. Revised financial assurances

Consultant shall submit to the County an updated ROWD for review and comment. Consultant shall incorporate the County comments, and a final version of the Updated ROWD shall be submitted to the RWQCB by the County.

C. Project Timeline

The project timeline for the TASKs described are as follows:

- TASK 1: Completion of RWQCB meeting on February 26, 2013, which was billed separately un PA 13-001-SMG. Other local meetings would be completed by January 31, 2014.
- TASK 2: Completion by January 31, 2014. Completion is contingent on the progress of the County's cost recovery efforts.
- TASK 3: Completion by June 28, 2013.
- TASK 4: Completion by June 28, 2013. Completion is contingent on the RWQCB response to County.
- TASK 5: Completion is dependent on RWQCB timeliness in responding with comments. Anticipated completion is June 28, 2013.
- TASK 6: Completion is dependent on RWQCB timeliness in responding with comments other items. Anticipated completion is January 31, 2014

D. Project Authorization Period

Services shall commence on June 1, 2013, and continue until January 31, 2014, or upon completing the agreed upon services.

E. Compensation

The Consultant shall be compensated for the services provided under the Agreement and this scope of work as follows:

1. Project Price

1.1 The below project pricing is devised to allow the County the ability to identify costs associated with the frequency of tasks performed in a given project. The Consultant shall be compensated on a time and material basis, based on the rates set forth below and in the Master Agreement to perform the work associated with each task, not to exceed the amounts listed below. Maximum Total Task Price includes fees and reimbursable expenses that have been agreed to by the both parties in accordance with the Master Agreement Exhibit C – Fee Schedule. The County shall not reimburse for fax, phone, postage or copies and other items as identified in Exhibit C – Fee Schedule. The County shall not pay a mark up on travel expenses and items identified in the Master Agreement.

1.2 A Summary of the Project fees is below:

TASK	DESCRIPTION	NOT TO EXCEED LIMIT
1	Meetings with the RWQCB or locally as needed	\$5,000
2	Cost Recovery Support	\$15,000
3	Sampling & Analysis of Background Groundwater Well	\$ 4,000
4	Preparation of a Verification Testing Work Plan	\$30,000
5	Evaluation of Triangle Ranch Monitoring Well	\$ 2,500
6	Preparation of Updated ROWD	\$30,000

1.3 A detailed breakdown of Reimbursable Expenses is included in Attachment A.

1.4 PROJECT TOTAL: \$86,500.00

*Note: Invoices submitted for cost under the following categories shall be in accordance with this Project Authorization and Master Agreement Exhibit C.

F. Payment and Invoicing

1. Consultant shall submit a detailed invoice for work actually completed. The invoice is to include but not be limited to the following information: hours worked by Consultant's Staff, the title of the Staff, billable rate, actual copies of equipment rental invoices, detailed information on equipment being rented, and reimbursable items that are reasonable, necessary and actually incurred by the Consultant in connection with the services. All invoices including reimbursable items shall have appropriate back up documents (i.e., copies of receipts) attached to the invoices. Consultant shall be compensated for services rendered and accepted under this Agreement and shall be paid monthly, in arrears, on a time and material basis not to exceed the per task totals for work performed and services provided.
2. The County shall pay the Consultant 30 days after approval of the invoice.

Invoices shall be mailed or delivered to the Department indicated below. The remit to address is:

Stanislaus County
 Department of Environmental Resources Landfill
 Attention: Jami Aggers
 3800 Cornucopia Way, Suite C
 Modesto, California 95358

G. Representatives

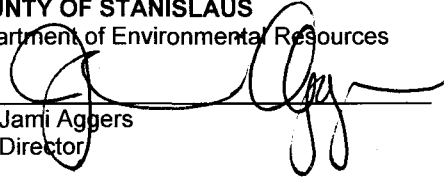
The County's representatives are Jami Aggers, (209) 535-6768 and Gerry Garcia, (209) 837- 4816. The Consultant's representatives are Bryan Stirrat as the primary contact, Lee Daigle as Landfill Gas contact and Greg Acosta as the Groundwater contact.

H. Counterparts

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

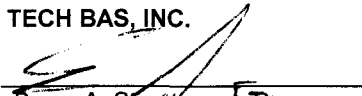
IN WITNESS WHEREOF, the parties have executed this Project No. 13-002-SMG on June 27, 2013.

COUNTY OF STANISLAUS
Department of Environmental Resources

By: 
Jami Aggers
Director

"County"

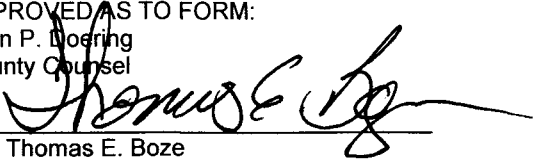
TETRA TECH BAS, INC.

By: 
Bryan A. Stirrat
President

"Consultant"

APPROVED AS TO FORM:

John P. Doering
County Counsel

By: 
Thomas E. Boze
Deputy County Counsel



DEPARTMENT OF ENVIRONMENTAL RESOURCES
 3800 Cornucopia Way, Suite C, Modesto, CA 95358
 Phone: (209) 525-6770
 Fax: (209) 525-6773

PROJECT AUTHORIZATION

For

Landfill Gas Collection and Control System Expansion Design

Project Number 13-003-SMG

A. Terms and Conditions

Except as hereinafter provided, the services provided by the Consultant under this Project Authorization and Exhibit A, shall be subject to the terms and conditions set forth in *Master Agreement For Professional Design Services* number A101412 made and entered into by and between the County of Stanislaus ("County") Tetra Tech BAS Inc., ("Consultant"), on December 11, 2012.

B. Background

The Geer Road Landfill is located approximately 10 miles southeast of the City of Modesto in Stanislaus County, on the northern bluff of Tuolumne River in central Stanislaus County. The 167-acre site is jointly owned by Stanislaus County and the City of Modesto. It is classified as a Class III landfill and is currently closed.

When the landfill was in active operation, it was operated by the Stanislaus County Department of Public Works, and accepted municipal and cannery wastes, from November 1970, until July 1990. The site operated as an area/trench fill sanitary landfill between 1970 and 1990. Approximately 144 acres (footprint) were used for refuse disposal. An estimated 4.5 million tons of municipal solid waste was disposed of at the site. The maximum depth of refuse is estimated to range between 50-60 feet. The Stanislaus County Department of Environmental Resources currently maintains the landfill as a closed facility.

The site is within a meander bend of the Tuolumne River. The landfill was capped in 1995 with a final cover system, a geomembrane on the top deck and clay on the side slopes. The final cover is a modified California Title 23, Chapter 15 design. The top deck cover (approximately 51 acres) consists of a 1-foot foundation layer overlain by a 60-mil High Density Polyethylene (HDPE) geo-membrane that is protected by a 1-foot thick vegetative cover layer. The side-slope has a 1-foot clay barrier in place of the HDPE. The cap was installed to divert rainfall from the landfill waste and to reduce the generation of leachate. A landfill gas (LFG) extraction system was installed in two (2) phases, with two (2) well fields covering the site, in 1992 and 1995.

On April 24, 2009, the Regional Water Quality Control Board (RWQCB) issued new Waste Discharge Requirements (WDR) and associated Monitoring and Reporting Program (MRP) Order No. R5-2009-0051 for the Geer Road Landfill. The County was in the process of complying with the requirements of the new WDRs when on April 8, 2011, the RWQCB issued a Cease and Desist Order R5-2011-0021 to the County, which required that the County optimize the existing LFG collection and control system and submit a LFG Extraction System Optimization Report by September 30, 2011. On April 8, 2011, the RWQCB also issued a revised MRP Order No. R5-2011-0022.

On December 9, 2010, the County contracted with Meyers Nave Riback Silver & Wilson, to provide legal advice related to the Geer Road Landfill Cease and Desist Order. Meyers Nave Riback Silver & Wilson, retained Bryan A. Stirrat and Associates on behalf of the County to review existing site data and conduct certain environmental investigations, and develop remedial recommendations for the site. On May 18, 2011, Bryan A. Stirrat and Associates recommended certain remedial action be taken by the County.

Under a previous Master Agreement Number A072711, two (2) Project Authorizations (PA 11-002 and PA 12-002) authorized Tetra Tech BAS to perform what was designated as Phase I and Phase II repairs to optimize the existing LFG collection and control system at the County's Geer Road Landfill to help control LFG migration. On August 18, 2011, (the commencement date) Phase I repairs included the regrading of landfill gas header lines to allow proper drainage of condensate throughout the system. This provided sufficient vacuum throughout the entire landfill gas collection and control system (GCCS). Furthermore, under previous Master Agreement Number A072711, PA 11-003 and 12-002, repairs were performed on numerous components including the UV sensor at the flare stack, the condensate injection system, and the condensate storage tank, including the replacement of the condensate injection pump. The completion of the Phase I repairs enabled the system to be brought to operational status and allowed the GCCS system to be optimized. Tetra Tech BAS was authorized under Professional Design Services Agreement Number A091511 dated September 22, 2011, to prepare a LFG Extraction System Optimization Report and submit to the County.

On May 16, 2012, (the commencement date) Phase II repairs included further header line regrading and stabilization, replacement and standardization of condensate pumps, replacement of numerous vertical extraction wellheads, replacement of the flare station's programmable logic controller (PLC), and repair or replacement of additional ancillary components. The completion of these activities further improved overall system performance.

A Vadose Zone Investigation was also concurrently performed during the Operations, Monitoring and Maintenance (OMM) of the GCCS at the Landfill. This investigation was performed to determine the impact on the vadose zone through the operation of vadose zone extraction wells with a reduced vacuum. The results of this investigation were summarized in two reports that were submitted to the Regional Water Quality Control Board (RWQCB) in July and October 2012. The results indicated that the operation of the vadose zone extraction wells with a minimal vacuum was positively impacting the vadose zone; meaning the concentrations of landfill gas significantly decreased with the reduction in vacuum applied to the system. At a meeting on November 14, 2012, the RWQCB informed the County that the request submitted in the summary reports to suspend the operation of the vadose zone wells had been declined. The RWQCB stated that in order to remove the vadose zone extraction wells from the active GCCS, replacement wells would be required.

On December 28, 2012, a Report of Waste Discharge was submitted to the RWQCB. The Report included a recommendation to install a 20 vertical landfill gas (LFG) extraction well expansion in order to satisfy regulatory requirements. This recommendation is also consistent with the discussion and direction received from the RWQCB during the February 26, 2013, meeting between the County and the RWQCB. The following Scope of Work identifies the Work covered under this Project Authorization.

C. Scope of Work

Consultant shall provide all of the labor, materials, and supervision to perform services associated with the design of the LFG Collection and Control System Expansion (GCCS) for the Geer Road Landfill. The scope of services shall consist of the engineering design and preparation of 100% contract documents consisting of, but not limited to, plans, specifications, cost estimates, GPS Survey and bid assistance for this project. Consultant shall coordinate each submittal with the County and any other agency that might have a stake in the project. The specific Tasks for work covered under this Agreement include:

TASKS

1. Assessment of Existing GCCS
2. Permitting and Regulatory Coordination
3. Preliminary 60% Design
4. Secondary 90% Design
5. Construction Documents
6. Bid Assistance

TASK 1 – Assessment of Existing GCCS

1.1 Consultant shall perform an expanded review of the data collected from the existing extraction wells since August 2011, to determine areas where there is an insufficient concentration of extraction wells and identify optimal locations for the new wells. Consultant shall re-examine the data and results of the Vadose Zone Investigation to determine where an appropriately designed and constructed extraction well can be located to satisfy the requirements of the RWQCB. Consultant shall also identify the remaining 24 vertical extraction wells that have yet to have new wellheads installed. These wellheads shall be replaced during this expansion of the GCCS. Consultant shall examine the condensate sumps at the Geer Road Landfill and identify which, if any, of the condensate sumps should be replaced. The information collected by the Consultant during this Task is critical to prevent either an over-design or under-design of the upcoming expansion of the GCCS. Consultant shall summarize this information in a memorandum and submit to the County. This memorandum shall serve as a guideline during the design of the expansion.

Task 1 Assumptions:

2 day site visit for the Senior Designer and Project Engineer

Task 1 Deliverables:

Assessment of Existing GCCS Memorandum

TASK 2 – Permitting and Regulatory Coordination

2.1 The Landfill is currently operating under a Cease and Desist Order from the RWQCB due to contamination of the groundwater at the Landfill. In an effort to increase the cooperation between the RWQCB and the County, Consultant shall coordinate with the RWQCB, for the upcoming proposed expansion of the landfill gas collection system. This coordination will occur through both meetings and correspondence on an as needed basis to facilitate the successful completion of the project.

2.2 Consultant shall contact the San Joaquin Valley Air Pollution Control District (SJVAPCD) to identify any submittals that are required for this expansion. Consultant's precursory discussion with the SJVAPCD did not identify any specific submittals that will be required for a permit modification; however, Consultant shall verify this during the Permitting and Regulatory Coordination task of this project. This coordination will occur through both meetings and correspondence on an as needed basis to facilitate the successful completion of the project.

Task 2 Assumptions:

No meeting with either the SJVAPCD or the RWQCB will be required

Task 2 Deliverables:

RWQCB and SJVAPCD Notification and Coordination (both if applicable)

TASK 3 – Preliminary 60% Design

3.1 Consultant shall develop a preliminary (60%) design based upon the information identified in Task 1. The Preliminary Design shall include 60% completion level design drawings, special provisions, standard specifications based on the WDRS and Public Contract Code for Public Works of Improvement, technical specifications, Engineer's Estimate of Probable Cost, and a quantity take-off estimate. Consultant shall submit the Preliminary Design Documents to the County for review and approval. A 60% Design Meeting shall occur between Consultant and the County to facilitate a clear understanding of the approach that was taken.

3.2 The 60% design drawings shall include the following sheets:

- a. Cover Sheet
- b. General Notes Sheet
- c. Existing Conditions Layout
- d. Proposed Expansion Layout
- e. Proposed Abandonment Layout
- f. Proposed Replacement Layout
- g. Well Schedule and Detail Sheet
- h. Collection Piping Detail Sheet
- i. Sump Replacement Detail Sheet
- j. Wellhead Replacement Detail Sheet

3.3 Consultant shall prepare Special provisions relevant to the project that will be used by the County to advertise and construct the project. Three hard copies and one electronic copy on a CD of special Provisions shall be delivered to the County after 100% plans are ready and signed by the engineer.

3.4 Project estimate prepared by the Consultant shall use Caltrans standard bid item descriptions wherever possible. Three hard copies and one electronic copy on a CD of final signed and stamped engineer's estimates shall be delivered to the County after 100% plans are signed by the engineer.

Task 3 Assumptions:

- a. Preliminary Design Documents shall be submitted as one (1) full-size hardcopy of drawings and one (1) hardcopy of other associated deliverables
- b. One 60% design meeting between County staff and Consultant staff
- c. Consultant's Project Engineer and Principal shall attend the 60% design meeting

Task 3 Deliverables:

- a. 60% Design Drawings (Layouts and Details)
- b. 60% Design Standard Specifications, Special Provisions Technical Specifications
- c. 60% Design Engineer's Estimate of Probable Cost
- d. 60% Design Quantity Take-Off

Task 4 – Secondary 90% Design

4.1 Consultant shall develop a secondary (90%) design based upon the information identified in Task 1 and during the 60% Design Meeting, and associated comments from the County. This Secondary Design shall include 90% completion level design drawings, specifications, Engineer's Estimate of Probable Cost, and quantity take-off estimate. Consultant shall submit the Secondary Design Documents to the County for review and approval. A 90% Design Meeting shall occur between Consultant and the County to facilitate a clear understanding of the approach taken. Consultant shall update the specifications to a 90% completion level for delivery to the County for review at the 90% Design Meeting.

4.2 GPS Surveying:

Consultant shall perform GPS Surveying services consisting of a one (1) man GPS Survey Crew. The Consultant's GPS Survey Crew shall verify the elevations of each proposed landfill gas extraction well, verify the elevations of the existing components that will be modified or incorporated in the new design, and shall verify the slopes of the proposed piping.

4.2.1 Prevailing Wage: By its execution of this Agreement, Consultant certifies that it is aware of the requirements of California Labor Code Section 1720 et seq. and 1770 et seq. as well as California Code of Regulations, Title 8, Section 16000 et seq. ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on certain "public work" and "maintenance" projects. Senate Bill 1999 amended Section 1720 of the California Labor Code in part to provide that: "For purposes of this paragraph "construction" includes work performed during the design and preconstruction phase of construction including, but not limited to, inspection and land surveying work". This phase of the project includes pre-construction work that is subject to payment of prevailing wage pursuant to Labor Code section 1720A.

4.2.2 Pursuant to Labor Code Section 1771, the work under this project is subject to the provision of Article 2 (commencing with section 1770) of Chapter 1 of Part 7 of Division 2 of the Labor Code, and the Contractor shall pay all workers the general prevailing rate per diem wages applicable to the work to be done for straight time, overtime, Saturday, Sunday and holiday work. These wage rates, are set forth by the Director of the Department of Industrial Relations and shall be part of the Agreement.

4.2.3 If the Scope of Work is being performed as part of an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and if the total compensation is \$1,000 or more, Consultant agrees to fully comply with such Prevailing Wage Laws. Consultant shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to execute the Scope of Work available to interested parties upon request, and shall post copies at the Consultant's principal place of business and at the project site. Consultant shall also adhere to any other applicable requirements, including but not limited to, those regarding the employment of apprentices, travel and subsistence pay, retention and inspection of payroll records, workers compensation and forfeiture of penalties prescribed in the Labor Code for violations. Consultant shall defend, indemnify and hold the County, its elected officials, officers, employees and agents free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with Prevailing Wage Laws.

4.2.4 Notwithstanding any other term of this Project Authorization or the Master Agreement, the compensation for this Project Authorization includes the cost for prevailing wage.

4.3 The 90% design drawings shall include the following sheets:

- a. Cover Sheet
- b. General Notes Sheet
- c. Existing Conditions Layout
- d. Proposed Expansion Layout
- e. Proposed Abandonment Layout
- f. Proposed Replacement Layout
- g. Well Schedule and Detail Sheet
- h. Collection Piping Detail Sheet
- i. Sump Replacement Detail Sheet
- j. Wellhead Replacement Detail Sheet

Task 4 Assumptions:

- a. Secondary Design Documents shall be submitted as one (1) full-size hardcopy of drawings and one (1) hardcopy of other associated deliverables
- b. One 90% design meeting between County staff and Consultant's staff
- c. Consultant's Project Engineer and Senior Project Designer shall attend the 90% design meeting

Task 4 Deliverables:

- a. 90% Design Drawings (Layouts and Details)
- b. 90% Design, Standard Specifications, Special Provisions and Technical Specifications
- c. 90% Design Engineer's Estimate of Probable Cost
- d. 90% Design Quantity Take-Off

Task 5 – Construction Documents

5.1 Consultant shall bring the 90% Design Documents to construction level for County's use during the County's bidding process. The Construction Documents shall also include an updated Engineer's Estimate of Probable

Cost and construction level quantity take-off for inclusion in County's bid documents. The Construction Documents shall be signed and sealed by Consultant's California registered Professional Engineer in the state of California. Consultant shall assist the County during the initial phases of the bidding process by identifying potential bidders and recommending contact information.

Task 5 Assumptions:

- a. Construction Documents shall be submitted as one (1) full-size hardcopy of drawings and one (1) hardcopy of other associated deliverables
- b. Electronic copies of the deliverables shall be made available to County as required for the County's bidding process. Plan submittal and specifications must be in a digital format. The CAD files including all topographical data, topographical surfaces, points, alignments, sites, corridors, and pip networks must be prepared using AutoCAD Civil 3D 2010 format. Standard Caltrans abbreviations shall be strictly used throughout.

Task 5 Deliverables:

- a. Construction Drawings (Layouts and Details) Signed and Sealed by a California registered Professional Engineer
- b. Construction Specifications Signed and Sealed by a California registered Professional Engineer
- c. Engineer's Estimate of Probable Cost
- d. Quantity Take-Off

Task 6 – Bid Assistance

Consultant shall attend the Pre-Bid Meeting at the Geer Road Landfill (or at another location in Modesto at the request of the County). Consultant shall attend this meeting with the County and any contractors who are preparing to bid on the project. Background information regarding the expansion of the collection system or any specific design issues shall be discussed at this meeting.

Consultant shall be available to assist the County in responding to all Requests for Information (RFI) specifically regarding the design during the advertisement phase. Consultant shall be available to provide the County with written responses to the bidder specific design questions. The County shall include the Consultant's responses in the addenda that shall be distributed by the County to the bidders.

After the bids have been received by the County, and upon request of the County, Consultant shall assist County with the review of the approved lowest responsible and responsive bidders, bid response to provide comments to the County for potential clarifications on the bid. Should any additional follow up questions be required or responses require review, Consultant shall be available to assist at the County's disposal.

Additionally, the Consultant will be available to review and revise the design documents if required, due to discrepancies which resulted from negligence of the design plans. Engineering support, including but not limited to review of Contractor submittals, review/approval of change orders, and requests for design changes from the Contractor are not included in this task.

Task 6 Assumptions:

- a. Consultant shall attend and participate, as requested by the County, in a Mandatory Pre-Bid Meeting
- b. Consultant shall attend the Mandatory Pre-Bid Meeting with the Project Engineer and Principal
- c. Consultant shall, upon request from the County, assist the County in responding to all RFI specifically regarding the design during the advertisement phase.
- d. Consultant's fee for this task assumes providing assistance with responses to design specific RFI for a total of two (2) addenda.

Task 6 Deliverables:

- a. Consultant shall respond to all RFI that are regarding design specific questions for two (2) addenda.

D. Cost Estimates

A project cost estimate for each task shall be submitted with each design submittal. Estimates shall use as a basis, wherever possible, historic and current cost data from County construction projects or from historic or current cost data from like industry standard construction projects. Escalation factors shall be used to adjust cost data. Estimates shall be prepared using quantities extended by unit prices to the greatest extent possible. Lump-sum bid items shall only be used where appropriate. Contractor fees for permits, inspection, utility services and other known items of work shall be included in the cost estimate as allowances.

An independent review of the project estimate unit rates and quantities shall be provided by a different individual to verify the accuracy and completeness of the estimate and to ensure that all items of work are included. The Consultant's ability to accurately estimate project construction costs relative to actual contractors' bids will be a key factor in the evaluation of their overall performance.

E. Project Timeline

The project timeline for the Tasks described in the Scope of Work is in Exhibit A attached hereto and made a part of this Agreement.

F. Project Authorization Period

Services shall commence on July 22, 2013, or upon the signing of this Agreement, and continue until October 31, 2013, or upon completing the agreed upon services.

G. Compensation

The Consultant shall be compensated for the services provided under the Agreement and this scope of work as follows:

1. Project Price

1.1 The below project pricing is devised to allow the County the ability to identify costs associated with the frequency of tasks performed in a given project. The Consultant shall be compensated on a time and material basis, based on the rates set forth below and in the Master Agreement to perform the work associated with each task, not to exceed the amounts listed below. Maximum Total Task Price includes fees and reimbursable expenses that have been agreed to by the both parties in accordance with the Master Agreement Exhibit C – Fee Schedule. The County shall not reimburse for fax, phone, postage or copies and other items as identified in Exhibit C – Fee Schedule. The County shall not pay a mark up on travel expenses and items identified in Exhibit C – Fee Schedule of the Master Agreement. Consultant shall include all receipts for travel expense reimbursement. Travel expense reimbursement shall be in accordance with the County's travel policy.

1.2 A Summary of the Project fees is below:

TASK	DESCRIPTION	MAXIMUM NOT TO EXCEED TOTAL TASK PRICE
1	Assessment of Existing GCCS	\$11,646
2	Permitting and Regulatory Coordination	\$12,208
3	Preliminary 60% Design	\$25,938
4	Secondary 90% Design	\$35,780
5	Construction Documents	\$28,518
6	Bid Assistance	\$16,808

1.3 Detailed fees below:

Task 1			
Staff Title	Billing Rate	Hours/Qty	Maximum Not to Exceed Total
Principal	\$264.00	2	\$ 528.00
Principal Engineer	\$225.00	4	\$ 900.00
Project Engineer	\$167.00	16	\$ 2,672.00
Project Manager	\$187.00	8	\$ 1,496.00
General Clerk	\$ 68.00	20	\$ 1,360.00
Sr. Project Designer	\$162.00	20	\$ 3,240.00
			\$ 10,196.00
<i>Reimbursable</i>			
Airline	\$400.00	2	\$ 800.00
Hotel	\$150.00	2	\$ 300.00

Task 1 (continued)			
Staff Title	Billing Rate	Hours/Qty	Maximum Not to Exceed Total
Food	\$ 50.00	4	\$ 200.00
Rental Car	\$ 75.00	2	\$ 150.00
			\$ 1,450.00
SUB TOTAL			\$ 11,646.00
Task 2			
Staff Title	Billing Rate	Hours/Qty.	Maximum Not to Exceed Total
Principal	\$264.00	8	\$ 2,112.00
Principal Engineer	\$225.00	8	\$ 1,800.00
Project Engineer	\$167.00	16	\$ 2,672.00
Project Manager	\$187.00	8	\$ 1,496.00
Engineer III	\$129.00	32	\$ 4,128.00
			\$ -
SUB TOTAL			\$ 12,208.00
Task 3			
Staff Title	Billing Rate	Hours/Qty.	Maximum Not to Exceed Total
Principal	\$264.00	16	\$ 4,224.00
Principal Engineer	\$225.00	4	\$ 900.00
Project Engineer	\$167.00	40	\$ 6,680.00
Project Manager	\$187.00	8	\$ 1,496.00
General Clerk	\$ 68.00	8	\$ 544.00
Sr. Project Designer	\$162.00	40	\$ 6,480.00
Engineer III	\$129.00	20	\$ 2,580.00
Sr. Project Manager	\$198.00	8	\$ 1,584.00
			\$ 24,488.00
Airline	\$400.00	2	\$ 800.00
Hotel	\$150.00	2	\$ 300.00
Food	\$ 50.00	4	\$ 200.00
Rental Car	\$ 75.00	2	\$ 150.00
			\$ 1,450.00
SUB TOTAL			\$ 25,938.00
Task 4			
Staff Title	Billing Rate	Hours/Qty.	Maximum Not to Exceed Total
Principal	\$264.00	4	\$ 1,056.00
Principal Engineer	\$225.00	4	\$ 900.00
Project Engineer	\$167.00	40	\$ 6,680.00
Project Manager	\$187.00	8	\$ 1,496.00
General Clerk	\$ 68.00	8	\$ 544.00
Sr. Project Designer	\$162.00	60	\$ 9,720.00
Engineer III	\$129.00	60	\$ 7,740.00
Sr. Project Manager	\$198.00	8	\$ 1,584.00
1 Man GPS Survey	\$198.00	20	\$ 3,960.00
			\$ 33,680.00

Task 4 (continued)			
Staff Title	Billing Rate	Hours/Qty.	Maximum Not to Exceed Total
Airline	\$400.00	3	\$ 1,200.00
Hotel	\$150.00	3	\$ 450.00
Food	\$ 50.00	6	\$ 300.00
Rental Car	\$ 75.00	2	\$ 150.00
			\$ 2,100.00
SUB TOTAL			\$ 35,780.00
Task 5			
Staff Title	Billing Rate	Hours/Qty.	Maximum Not to Exceed Total
Principal	\$264.00	16	\$ 4,224.00
Principal Engineer	\$225.00	4	\$ 900.00
Project Engineer	\$167.00	40	\$ 6,680.00
Project Manager	\$187.00	8	\$ 1,496.00
General Clerk	\$ 68.00	8	\$ 544.00
Sr. Project Designer	\$162.00	40	\$ 6,480.00
Engineer III	\$129.00	40	\$ 5,160.00
Sr. Project Manager	\$198.00	8	\$ 1,584.00
			\$ 27,068.00
Airline	\$400.00	2	\$ 800.00
Hotel	\$150.00	2	\$ 300.00
Food	\$ 50.00	4	\$ 200.00
Rental Car	\$ 75.00	2	\$ 150.00
			\$ 1,450.00
SUB TOTAL			\$ 28,518.00
Task 6			
Staff Title	Billing Rate	Hours/Qty.	Maximum Not to Exceed Total
Principal	\$264.00	16	\$ 4,224.00
Principal Engineer	\$225.00	4	\$ 900.00
Project Engineer	\$167.00	32	\$ 5,344.00
Project Manager	\$187.00	6	\$ 1,122.00
General Clerk	\$ 68.00	6	\$ 408.00
Sr. Project Designer	\$162.00	8	\$ 1,296.00
Engineer III	\$129.00	16	\$ 2,064.00
			\$ 15,358.00
Airline	\$400.00	2	\$ 800.00
Hotel	\$150.00	2	\$ 300.00
Food	\$ 50.00	4	\$ 200.00
Rental Car	\$ 75.00	2	\$ 150.00
			\$ 1,450.00
SUB TOTAL			\$ 16,808.00

1.4 PROJECT TOTAL SHALL NOT EXCEED: \$130,898.00

*Note: Invoices submitted for cost under the following categories shall be in accordance with this Project Authorization and Master Agreement Exhibit C.

H. Payment and Invoicing

1. Consultant shall submit a detailed invoice for work actually completed. The invoice is to include but not be limited to the following information: hours worked by Consultant's Staff, the title of the Staff, billable rate, actual copies of equipment rental invoices, detailed information on equipment being rented, and reimbursable items that are reasonable, necessary and actually incurred by the Consultant in connection with the services. All invoices including reimbursable items shall have appropriate back up documents (i.e., copies of receipts) attached to the invoices. Consultant shall be compensated for services rendered and accepted under this Agreement and shall be paid monthly, in arrears, on a time and material basis not to exceed the per task totals for work performed and services provided.
2. The County shall pay the Consultant 30 days after approval of the invoice.

Invoices shall be mailed or delivered to the Department indicated below. The remit to address is:

Stanislaus County
 Department of Environmental Resources Landfill
 Attention: Jami Aggers
 3800 Cornucopia Way, Suite C
 Modesto, California 95358

I. Representatives

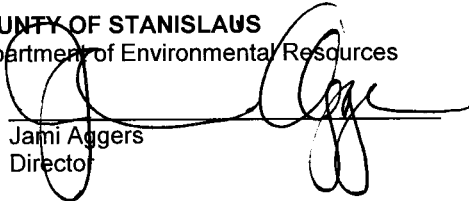
The County's representatives are Jami Aggers, (209) 525-6768 and Gerry Garcia, (209) 837- 4816. The Consultant's representatives are Bryan Stirrat as the primary contact, Lee Daigle as Landfill Gas contact.

J. Counterparts

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

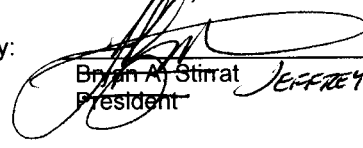
IN WITNESS WHEREOF, the parties have executed this Project No. 13-003-SMG on Aug 1, 2013.

COUNTY OF STANISLAUS
 Department of Environmental Resources

By: 
 Jami Aggers
 Director

"County"

TETRA TECH BAS, INC.

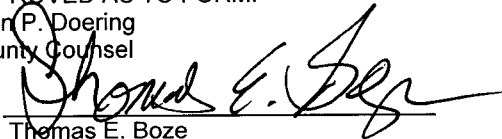
By: 
 Bryan A. Stirrat
 President

JEFFREY M WILLIAMS

"Consultant"

APPROVED AS TO FORM:

John P. Doering
 County Counsel

By: 
 Thomas E. Boze
 Deputy County Counsel

Award Master Agreement to Tetra Tech BAS, Inc.

Jami Aggers, Interim Director
Dept. of Environmental Resources

December 11, 2012

Background

- Dept. of Environmental Resources staff perform routine maintenance at the Geer Road Landfill
- For this closed site, however, outside services and expertise are needed for env. monitoring, testing, and reporting
- In concert with GSA Purchasing, a competitive procurement process was begun back in May so as to complete the process by 12/31/12

Background Cont'd.

- Four proposals were received for the Geer site
- The scoring criteria were as follows:
 - Professional Qualifications: 15 pts
 - Past Involvement w/ Similar Projects: 15 pts
 - Successes w/ Significant Enforcement Action: 25 pts
 - Pricing: 20 pts

Background Cont'd.

- Three evaluators reviewed & analyzed the proposals: two members from DER plus a representative from SJ County Public Works
- Tetra Tech BAS, Inc. (Tetra Tech), one of two existing service providers, was the highest scoring proposer.
- The results were as follows:

RFP Results

- Tetra Tech BAS • 265 points
- SCS Engineers • 230 points
- CH2MHill • 223 points
- HerSchy
Environmental • 142 points

Geer Road LF Master Agreement for Services

- First entered into a Master Agreement w/ Tetra Tech in Aug. 2011, for svcs specific to the LFG system through June 2012
- In May 2012 that contract was amended to provide add'l funds for: upgrades to the LFG system, oversight assoc. w/ those repairs, non-routine/emergency svcs, analytical svcs re: the LFG/groundwater interface, & extra vadose zone well monitoring

Geer Road LF Master Agreement for Services, Cont'd.

- Funding for the services at Geer Road come from pledged revenues from Fink Road as per Agreement between the County and the Dept. of Resources, Recycling and Recovery
- Two transfers are made annually to the Geer Road Closure Fund totaling approx. \$721,000

Geer Road LF Cease & Desist Order

- 2 remaining compliance items in the CDO due to the RWQCB by Dec. 30, 2012:
 - Groundwater Plume Investigation Report
 - Newly installed wells (done)
 - Lateral & vertical extent of the plume
 - Downstream survey of wells (done)
 - Report of Waste Discharge
 - New Water Quality Protection Standards
 - Effectiveness of systems
 - Whether add'l monitoring wells are needed

Staff Recommendation

Successfully worked with Tetra Tech BAS, Inc., for the past two years, initially as an expert to assist the County in the CDO Hearing process, and over the past 17 months as a direct provider of services

- Approve the Master Agreement w/ Tetra Tech for professional env. monitoring, testing and reporting services

Questions?



DEPARTMENT OF ENVIRONMENTAL RESOURCES
 3800 Cornucopia Way, Suite C, Modesto, CA 95358
 Phone: (209) 525-6770
 Fax: (209) 525-6773

PROJECT AUTHORIZATION

For

Construction Management and Construction Quality Assurance Proposal for Geer Road Landfill Gas Collection and Control System Phase III Expansion

Project Number 14-001-SCM

A. Terms and Conditions

Except as hereinafter provided, the services provided by the Consultant under this Project Authorization and Exhibit 1 shall be subject to the terms and conditions set forth in *Master Agreement for Professional Services* number A101412 made and entered into by and between the County of Stanislaus ("County") and Tetra Tech BAS Inc., ("Consultant"), on December 11, 2012.

B. Background

The Geer Road Landfill is located approximately 10 miles southeast of the City of Modesto in Stanislaus County, on the northern bluff of Tuolumne River in central Stanislaus County. The 167-acre site is jointly owned by Stanislaus County and the City of Modesto. It is classified as a Class III landfill and is currently closed.

When the landfill was in active operation, it was operated by the Stanislaus County Department of Public Works, and accepted municipal and cannery wastes from November 1970, until July 1990. The site operated as an area/trench fill sanitary landfill between 1970 and 1990. Approximately 144 acres (footprint) were used for refuse disposal. An estimated 4.5 million tons of municipal solid waste was disposed of at the site. The maximum depth of refuse is estimated to range between 50-60 feet. The Stanislaus County Department of Environmental Resources currently maintains the landfill as a closed facility.

The site is within a meander bend of the Tuolumne River. The landfill was capped in 1995 with a final cover system, a geomembrane on the top deck and clay on the side slopes. The final cover is a modified California Title 23, Chapter 15 design. The top deck cover (approximately 51 acres) consists of a 1-foot foundation layer overlain by a 60-mil High Density Polyethylene (HDPE) geo-membrane that is protected by a 1-foot thick vegetative cover layer. The side-slope has a 1-foot clay barrier in place of the HDPE. The cap was installed to divert rainfall from the landfill waste and to reduce the generation of leachate. A landfill gas (LFG) extraction system was installed in two (2) phases, with two (2) well fields covering the site, in 1992 and 1995.

On April 24, 2009, the Regional Water Quality Control Board (RWQCB) issued new Waste Discharge Requirements (WDR) and associated Monitoring and Reporting Program (MRP) Order Number R5-2009-0051 for the Geer Road Landfill. The County was in the process of complying with the requirements of the new WDRs when on April 8, 2011, the RWQCB issued a Cease and Desist Order R5-2011-0021 to the County, which required that the County optimize the existing LFG collection and control system and submit a LFG Extraction System Optimization Report by September 30, 2011. On April 8, 2011, the RWQCB also issued a revised MRP Order Number R5-2011-0022.

On December 9, 2010, the County contracted with Meyers Nave Riback Silver & Wilson, to provide legal advice related to the Geer Road Landfill Cease and Desist Order. Meyers Nave Riback Silver & Wilson, retained Bryan A. Stirrat and Associates on behalf of the County to review existing site data and conduct certain environmental investigations, and develop remedial recommendations for the site. On May 18, 2011, Bryan A. Stirrat and Associates recommended certain remedial action be taken by the County.

Under a previous Master Agreement Number A072711, two (2) Project Authorizations (PA 11-002 and PA 12-002) authorized Tetra Tech BAS to perform what was designated as Phase I and Phase II repairs to optimize the existing LFG collection and control system at the County's Geer Road Landfill to help control LFG migration. On August 18, 2011, (the commencement date) Phase I repairs included the regrading of landfill gas header lines to allow proper drainage of condensate throughout the system. This provided sufficient vacuum throughout the entire landfill gas collection and control system (GCCS). Furthermore, under previous Master Agreement Number A072711, PA 11-003 and 12-002, repairs were performed on numerous components including the UV sensor at the flare stack, the condensate injection system, and the condensate storage tank, including the replacement of the condensate injection pump. The completion of the Phase I repairs enabled the system to be brought to operational status and allowed the GCCS system to be optimized. Tetra Tech BAS was authorized under Professional Design Services Agreement Number A091511 dated September 22, 2011, to prepare a LFG Extraction System Optimization Report and submit to the County.

On May 16, 2012, (the commencement date) Phase II repairs included further header line regrading and stabilization, replacement and standardization of condensate pumps, replacement of numerous vertical extraction wellheads, replacement of the flare station's programmable logic controller (PLC), and repair or replacement of additional ancillary components. The completion of these activities further improved overall system performance.

A Vadose Zone Investigation was also concurrently performed during the Operations, Monitoring and Maintenance (OMM) of the GCCS at the Landfill. This investigation was performed to determine the impact on the vadose zone through the operation of vadose zone extraction wells with a reduced vacuum. The results of this investigation were summarized in two reports that were submitted to the Regional Water Quality Control Board (RWQCB) in July and October 2012. The results indicated that the operation of the vadose zone extraction wells with a minimal vacuum was positively impacting the vadose zone; meaning the concentrations of landfill gas significantly decreased with the reduction in vacuum applied to the system. At a meeting on November 14, 2012, the RWQCB informed the County that the request submitted in the summary reports to suspend the operation of the vadose zone wells had been declined. The RWQCB stated that in order to remove the vadose zone extraction wells from the active GCCS, replacement wells would be required.

On December 28, 2012, a Report of Waste Discharge was submitted to the RWQCB. The Report included a recommendation to install a 20 vertical landfill gas (LFG) extraction well expansion in order to satisfy regulatory requirements. This recommendation is also consistent with the discussion and direction received from the RWQCB during the February 26, 2013, meeting between the County and the RWQCB. The following Scope of Work identifies the Work covered under this Project Authorization.

C. Prevailing Wage

Prevailing Wage Laws as defined in Section 1720 of the California Labor Code, et seq., and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq., ("Prevailing Wage Laws"), require the payment of prevailing wage rates and the performance of other requirements on certain "public work" and "maintenance" projects. This shall include certain work performed during the design and preconstruction phase of construction including, but not limited to, inspection and land surveying work.

D. Scope of Work

1. Task 1 – Pre-Construction Activities

1.1 Consultant shall plan and prepare for the upcoming CM/CQA project. This shall include scheduling of outside services (i.e. hotels and equipment), attendance for CM/CQA staff at the Pre-Bid Meeting, internal Consultant project set up, and review of all applicable construction documents. The fee associated with this task shall be a time and materials cost indicated on the attached cost estimate, Exhibit 1.

2. Task 2 – Construction Management

2.1 Consultant shall provide the on-site observation of construction activities to verify installation in accordance with the design and specifications. Consultant shall provide a full time engineer experienced in observation of construction activities ten hours per day, six days per week for a total of thirty construction days. This task is estimated to be completed in thirty working days. This cost shall not include any delays due to contractor issues. Any additional increases to the total number of work days shall be at a daily rate of \$1,500. This task shall include vehicle and fuel costs, per the rates set forth in the Master Agreement Exhibit C– Fee Schedule, hotel costs (at the federally allowable level for Modesto, CA) and equipment. The fee associated with this task shall be a time and materials cost indicated on the attached cost estimate, Exhibit 1, for thirty days of on-site Construction Management.

3. Task 3 – Construction Quality Assurance

3.1 Consultant shall provide the management of the overall construction project and verify that all applicable codes and requirements are being achieved. Construction Quality Assurance shall be performed by senior members of the Consultant’s team with experience in the activities typically associated with construction projects. This task shall be managed from the Consultant’s office and shall include remote teleconferences with the Contractor, CM personnel, County and the Design Engineer. The fee associated with this task shall be a time and materials cost indicated on the attached cost estimate, Exhibit 1.

4. Task 4 – Construction Report

4.1 Consultant shall develop, submit, revise, and complete a Construction Report that shall summarize all of the activities performed under the Phase III Expansion. This report shall be developed in accordance with the Central Valley Regional Water Quality Control Board (RWQCB) requirements and shall be submitted to the Central Valley RWQCB upon approval of the County for inclusion in their records. This Construction Report shall include all applicable materials regarding the construction project including but not limited to submittals, schedules, construction meeting agendas, construction meeting minutes, boring logs and as-built drawings. The fee associated with this task shall be a time and materials cost indicated on the attached cost estimate, Exhibit 1.

5. Task 5 – Engineering Assistance

5.1 Consultant shall make available design staff through the construction period should questions arise. Typically, this task is already incorporated in the design budget; however, for this project the design phase ceases upon Award of Bid. Consultant shall extend ability to provide engineering support and designer review. The fee associated with this task shall be a time and materials cost indicated on the attached cost estimate, Exhibit 1.

6. Scope of Work Assumptions

- 6.1 A total of thirty working days shall be required for the completion of this project;
- 6.2 The project schedule shall be in accordance with the schedule included in the Request for Bid documents for the Phase III Expansion;
- 6.3 Contractor shall work Monday through Friday, ten hours per day only;
- 6.4 Prevailing wage shall not be required for engineering staff performing on-site Construction Management;
- 6.5 Federal per diem shall be required (\$51 per day); and
- 6.6 Federal housing allocation is required (\$84 per day).

E. Project Timeline

The project timeline for the tasks described in the Scope of Work of this Project Authorization is in Exhibit A of the Master Agreement attached hereto and made a part of this Agreement.

F. Project Authorization Period

Services shall commence on July 1, 2014, or upon the signing of this Agreement, and continue until January 2, 2015, or upon completing the agreed upon services.

G. Compensation

Consultant shall be compensated for the services provided under this Project Authorization as follows:

1. Project Price

1.1 The below project pricing is devised to allow the County the ability to identify costs associated with the frequency of tasks performed in a given project. The Consultant shall be compensated on a time and material basis, based on the rates set forth in the Master Agreement Exhibit C – Fee Schedule to perform the work associated with each task, not to exceed the amounts listed below. Maximum Total Task Price includes fees and reimbursable expenses that have been agreed to by the both parties in accordance with the Master Agreement, Exhibit C – Fee Schedule. The County shall not reimburse for fax, phone, postage or copies and other items as identified in the Master Agreement Exhibit C – Fee Schedule. The County shall not pay a mark-up on travel expenses and items identified in Exhibit C – Fee Schedule of the Master Agreement. Consultant shall include all receipts for travel expense reimbursement. Travel expense reimbursement shall be in accordance with Master Agreement Exhibit C – Fee Schedule and the County’s travel policy.

1.2 The not to exceed total for this Project Authorization consists of the following not to Exceed fees:

1.2.1	Task 1 – Pre-Construction Activities	\$5,344
1.2.2	Task 2 – Construction Management	\$43,290
1.2.3	Task 3 – Construction Quality Assurance	\$11,478
1.2.4	Task 4 – Construction Report	\$10,611
1.2.5	Task 5 – Engineering Assistance	\$20,844
1.2.6	Total Not Exceed Fee	\$91,567

*Note: Invoices submitted for payment under the above categories shall be in accordance with this Project Authorization, Exhibit 1 to this Project Authorization and the Master Agreement Exhibit C.

1.3 A detailed breakdown of the Fee Schedule for this Project Authorization is attached.

H. Payment and Invoicing

1. Consultant shall submit a detailed invoice for work actually completed. The invoice is to include but not be limited to the following information: Hours worked by Consultant’s Staff, the title of the Staff, billable rate, actual copies of equipment rental invoices, detailed information on equipment being rented, and reimbursable items that are reasonable, necessary and actually incurred by the Consultant in connection with the services. All invoices including reimbursable items shall have appropriate back up documents (i.e., copies of receipts) attached to the invoices.

No mark-up is allowed on travel reimbursement and copies of all receipts must accompany the invoice. Travel expenses shall be reimbursed in accordance with Master Agreement Exhibit C –

Fee Schedule and the County's travel policy which is incorporated herein by reference. Consultant shall be compensated for services rendered and accepted under this Agreement and shall be paid monthly, in arrears, on a time and material basis not to exceed the per-task totals for work performed and services provided. The County's project authorization number shall be submitted on the invoice in order for payment to be made.

3. The County shall pay the Consultant 30 days after approval of the invoice. Invoices shall be mailed or delivered to the Department indicated below.

The remit to address is:

Stanislaus County
Department of Environmental Resources Landfill
Attention: Jami Aggers (A101412 PA 14001)
P.O. Box 86
Crows Landing, California 95313

I. Representatives

The County's representatives are Jami Aggers, (209) 525-6786 and Gerry Garcia, (209) 837-4816. The Consultant's representatives are Bryan Stirrat as the primary contact, Lee Daigle as Landfill Gas contact.

J. Counterparts

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

K. Professional Services

All professional services to be provided by Consultant pursuant to this Agreement shall be provided by personnel experienced in their respective fields and in a manner consistent with the standards of care, diligence and skill ordinarily exercised by professional consultants in similar fields and circumstances in accordance with sound professional practices. Consultant also represents that it is familiar with all laws that may affect its performance of this Agreement and shall advise County of any changes in any laws that may affect Consultant's performance of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Project No. 14-001-SCM on

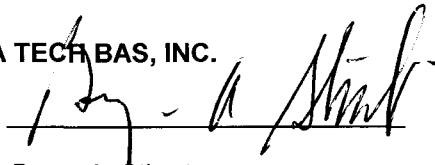
7/16/2014

COUNTY OF STANISLAUS
Department of Environmental Resources

By: 
Jami Aggers
Director

"County"

TETRA TECH BAS, INC.

By: 
Name: Bryan A. Stirrat
Title: President

"Consultant"

APPROVED AS TO FORM:

John P. Doering
County Counsel

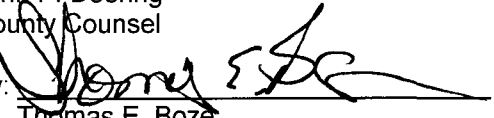
By: 
Thomas E. Boze
Deputy County Counsel

EXHIBIT 1

PROJECT AUTHORIZATION FEE SCHEDULE

TASK	DESCRIPTION	MAXIMUM NOT TO EXCEED TOTAL TASK PRICE
1	Pre-Construction Activities	\$5,344
2	Construction Management	\$43,290
3	Construction Quality Assurance	\$11,478
4	Construction Report	\$10,611
5	Engineering Assistance	\$20,844

TASK 1				
Staff Title	Billing Rate	Hours/Qty	Duration	Maximum not to Exceed Total
Engineer I	\$103	8	1 Each	\$824
Division Engineer	\$213	8	1 Each	\$1,704
Senior Project Designer	\$162	16	1 Each	\$2,592
Project Coordinator	\$112	2	1 Each	\$224
				SUBTOTAL \$5,344
TASK 2				
Staff Title	Billing Rate	Hours/Qty	Duration	Maximum not to Exceed Total
Engineer I	\$103	8 HRS/DAY	30 Days	\$24,720
Engineer I - OT	\$154.50	2 HRS/DAY	30 Days	\$9,270
<i>Reimbursable</i>				
Vehicle Cost	\$15	300		\$4,500
Per Diem Cost	\$51	30		\$1,530
Hotel Cost	\$84	30		\$2,520
Gas Meter Cost	\$500	1.5		\$750
				SUBTOTAL \$43,290
TASK 3				
Staff Title	Billing Rate	Hours/Qty	Duration	Maximum not to Exceed Total
Principal	\$264	1	6 Weeks	\$1,584
Principal Engineer	\$225	1	6 Weeks	\$1,350
Senior Project Manager	\$198	1	6 Weeks	\$1,188
Project Manager	\$187	2	6 Weeks	\$2,244
Division Engineer	\$213	4	6 Weeks	\$5,112
				SUBTOTAL \$11,478
TASK 4				
Staff Title	Billing Rate	Hours/Qty	Duration	Maximum not to Exceed Total
Principal	\$264	2	1 Each	\$528
Principal Engineer	\$225	3	1 Each	\$675
Senior Project Manager	\$198	4	1 Each	\$792
Project Manager	\$187	8	1 Each	\$1,496
Engineer I	\$103	40	1 Each	\$4,120
Division Engineer	\$213	8	1 Each	\$1,704
Senior Project Designer	\$162	8	1 Each	\$1,296
				SUBTOTAL \$10,611

FEE SCHEDULE (CONTINUED)				
TASK 5				
Staff Title	Billing Rate	Hours/Qty	Duration	Maximum not to Exceed Total
Principal	\$264	1	6 Weeks	\$1,584
Senior Project Manager	\$198	4	6 Weeks	\$4,752
Project Manager	\$187	6	6 Weeks	\$6,732
Senior Project Designer	\$162	8	6 Weeks	\$7,776
				SUBTOTAL \$20,844
				TOTAL \$91,567



DEPARTMENT OF ENVIRONMENTAL RESOURCES
3800 Cornucopia Way, Suite C, Modesto, CA 95358
Phone: (209) 525-6700
Fax: (209) 525-6773

AMENDMENT NO. 2

TO

PROFESSIONAL DESIGN SERVICES MASTER AGREEMENT

TETRA TECH BAS, INC.

This Amendment No. 2 to the Master Agreement for Professional Design Services ("Amendment No. 2") by and between the County of Stanislaus, a political subdivision of the State of California, hereinafter referred to as "County" and Tetra Tech BAS, Inc., hereinafter referred to as "Consultant" is made and entered into on Nov. 12, 2014.

Whereas, the County and Consultant entered into a Master Agreement for Professional Design Services dated December 11, 2012, ("the Agreement"), and

Whereas, Amendment No. 1 increased the not to exceed amount in Paragraph 2.1 of the Master Agreement by \$230,000; and

Whereas, Paragraph 7.20 of the Master Agreement provides that the Agreement may be amended only by a written Amendment executed by both parties; and

Whereas, the County has a need to increase the Master Agreement's not to exceed amount by \$100,000 to compensate Consultant for services performed under Project Authorizations issued against this Agreement; and

Whereas this amendment is for the mutual benefit of County and Consultant;

Now, therefore, the County and Consultant agree as follows:

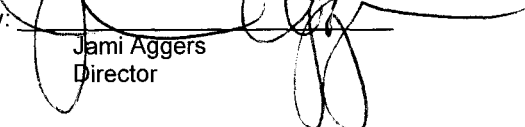
- 1. Section 2.1 - Compensation is amended as follows:

"For each task or project let under this Agreement Consultant shall be paid in accordance with the fee schedule set forth in Exhibit "C", attached hereto and made a part of this Agreement (the "Fee Schedule"). Consultant shall be compensated on a time and materials basis, based on the hours worked by the Consultant's employees or subcontractors at the hourly rates specified in the Fee Schedule. Fee Schedule rates shall include direct salary costs, employee benefits, and overhead. The rates stated in the Fee Schedule are not adjustable during the term of this Agreement. Consultant's compensation under this Master Agreement shall in no case exceed **Three-Million, Four-Hundred and Nine Thousand, Four-Hundred and Forty-Six Dollars (\$3,409,446.00)** The County may retain ten percent of all periodic or progress payments made to the Consultant until completion and acceptance of all work tasks and County shall have right to withhold payment from Consultant for any unsatisfactory service until such time service is performed satisfactorily."

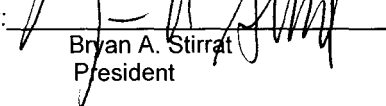
- 2. Except as stated herein, all other terms and conditions of the Agreement remain unchanged.

In witness whereof, the parties have executed this Amendment on the date written above.

COUNTY OF STANISLAUS
Department of Environmental Resources

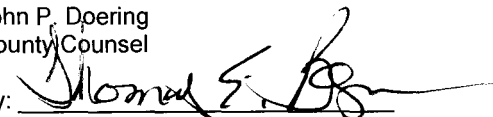
By: 
Jami Aggers
Director

TETRA TECH BAS, INC.

By: 
Bryan A. Stirrat
President

APPROVED AS TO FORM:

John P. Dpering
County Counsel

By: 
Thomas E. Boze
Deputy County Counsel



DEPARTMENT OF ENVIRONMENTAL RESOURCES
3800 Cornucopia Way, Suite C, Modesto, CA 95358
Phone: (209) 525-6700
Fax: (209) 525-6773

AMENDMENT NO. 3

TO

PROFESSIONAL DESIGN SERVICES MASTER AGREEMENT

TETRA TECH BAS, INC.

This Amendment No. 3 to the Master Agreement for Professional Design Services ("Amendment No. 3") by and between the County of Stanislaus, a political subdivision of the State of California, hereinafter referred to as "County" and Tetra Tech BAS, Inc., hereinafter referred to as "Consultant" is made and entered into on Dec. 12, 2014.

Whereas, the County and Consultant entered into a Master Agreement for Professional Design Services dated December 11, 2012, ("the Agreement"), and

Whereas, Amendment No. 1 and Amendment No. 2 increased the not to exceed amount in Paragraph 2.1 of the Master Agreement to \$3,409,446; and

Whereas, Paragraph 7.20 of the Master Agreement provides that the Agreement may be amended only by a written Amendment executed by both parties; and

Whereas, the County has a need to increase the Master Agreement's not to exceed amount by \$131,917 to compensate Consultant for services performed under Project Authorizations issued against this Agreement; and

Whereas this amendment is for the mutual benefit of County and Consultant;

Now, therefore, the County and Consultant agree as follows:

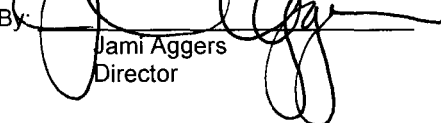
1. Section 2.1 - Compensation is amended as follows:

"For each task or project let under this Agreement Consultant shall be paid in accordance with the fee schedule set forth in Exhibit "C", attached hereto and made a part of this Agreement (the "Fee Schedule"). Consultant shall be compensated on a time and materials basis, based on the hours worked by the Consultant's employees or subcontractors at the hourly rates specified in the Fee Schedule. Fee Schedule rates shall include direct salary costs, employee benefits, and overhead. The rates stated in the Fee Schedule are not adjustable during the term of this Agreement. Consultant's compensation under this Master Agreement shall in no case exceed **Three-Million, Five Hundred and Forty-One Thousand, Three Hundred and Sixty-Three Dollars (\$3,541,363)** The County may retain ten percent of all periodic or progress payments made to the Consultant until completion and acceptance of all work tasks and County shall have right to withhold payment from Consultant for any unsatisfactory service until such time service is performed satisfactorily."

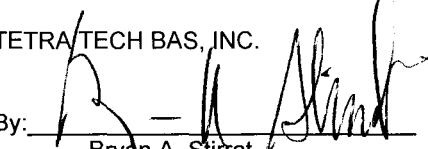
2. Except as stated herein, all other terms and conditions of the Agreement remain unchanged.

In witness whereof, the parties have executed this Amendment on the date written above.

COUNTY OF STANISLAUS
Department of Environmental Resources

By: 
Jami Aggers
Director

TETRA TECH BAS, INC.

By: 
Bryan A. Stirrat
President

APPROVED AS TO FORM:
John R. Doering
County Counsel

By: 
Thomas E. Boze
Deputy County Counsel