



# Memorandum

## MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT

Reviewed by:  Date: 3-11-22  
General Manager

DATE: March 11, 2022  
TO: General Manager  
FROM: Director of Engineering & Compliance/District Engineer  
SUBJECT: Approve a Change Order for TetraTech for Phase IV of the GCCS Improvements Project in the Amount of \$170,000.

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**RECOMMENDATION:** That the Board Approve a Change Order for TetraTech for Phase IV of the GCCS Improvements Project in the Amount of \$170,000 inclusive of 5% Contingency.

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### BACKGROUND

On July 16, 2016, the CEC released a notice of Grant Funding Opportunity GFO-15-606 Community-Scale and Commercial-Scale Advanced Biofuels Production. At that time, staff together with Tetra Tech (TT) began development of conceptual project scoping and preparation of a pre-application submittal in the Community-Scale project category (public project). On August 24, 2016, Staff together with TT submitted the pre-application to CEC with the interest to be selected as a qualified submittal to gain eligibility to prepare a final grant application. On October 4, 2016, the CEC posted the results of the pre-application process and provided notice that the District's pre-application was selected as being eligible to submit a full grant application for consideration of final selection. At their regularly scheduled meeting on October 21, 2016, the District's Board of Director's approved the proposal by TT to assist Staff's preparation of the full grant application. On December 7, 2017, the California Energy Commission (CEC) announced as part of their Second Revised Notice of Proposed Award - GFO-15-606 - Community-Scale and Commercial-Scale Advanced Biofuels Production Facilities that the Monterey Regional Waste Management District had been approved for a matching funds Grant Award of \$1,816,800 Grant to convert biogas to a CNG transportation fuel (\$3,647,989 project estimate). On March 23, 2018, the Board approved the CEC Grant Award and initiated the project's design, permitting, and construction development.

### DISCUSSION

An element added to TT's scope of work on the CEC Grant is to make improvements to the Gas Collection and Control System (GCCS) in the landfill. Three phases of GCCS improvements have been completed including over 50 new wells and improvements to the gas transmission network. As new waste is disposed and old gas collection wells become impacted by waste settlement, new gas collection wells are required to be added to the landfill to maintain the performance of the GCCS to extract gas from the waste mass in-place. The Phase IV improvements to the GCCS represent the next increment of adding gas collection capacity to the GCCS. A change order of \$170,000 for the design engineer, TT, has been determined to be necessary for this next increment of GCCS improvements (Phase IV). TT's services will include wellfield assessment, design, preparation of bid documents, bidding support, and QA/QC construction support activities. Refer to the attached proposal from TT.

**FINANCIAL IMPACT**


The expenditures for the Phase IV improvements project will be incurred over the current fiscal year and also in the upcoming fiscal year. Funds are budgeted in the current FY21/22 budget and are also in the planned budget for the upcoming fiscal year FY22/23.

**STRATEGIC PLAN**

The District’s routine and periodic expansion of the GCCS to collect, control, and beneficial reuse landfill gas fits under several general policy directives cited in the District’s “Pillars of Sustainability” plan. Principally under the Community and Environment pillars which speak to the protection of Public Health and the Environment whereby the project will reduce both fugitive and permitted emissions from the District’s landfill operations.

**CONCLUSION**

Staff respectfully recommends that the Board approve a Change Order for TetraTech for Phase IV of the GCCS Improvements Project in the Amount of \$170,000 inclusive of 5% Contingency.

  
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Guy R. Petraborg, P.E., G.E.

Attachment: TetraTech Proposal for Professional Engineering Services – Gas Collection and Containment System (GCCS) Improvements at the Landfill in Monterey County, California dated March 9, 2022



March 9, 2022

Mr. Guy Petraborg  
Director of Engineering & Compliance  
Monterey Regional Waste Management District  
Physical: 14201 Del Monte Blvd., Monterey County, CA 93908  
Mailing: P.O. Box 1670, Marina, CA 93933

Re: Proposal for Professional Engineering Services – Gas Collection and Containment System (GCCS)  
Improvements at the Landfill in Monterey County, California

Dear Mr. Petraborg:

Tetra Tech BAS, Inc. (Tetra Tech) is pleased to present this proposal to Monterey Regional Waste Management District (MRWMD) for professional engineering services for expansion of the landfill gas (LFG) collection and control system (GCCS) at the Marina Landfill located in Monterey County, California. The scope of services includes GCCS wellfield evaluation and recommendations, GCCS design, assistance in contractor solicitation and selection, GCCS construction quality assurance and quality control (QA/QC) support.

## PROJECT SCOPE

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Tetra Tech has prepared this proposal and developed the proposed tasks based on our discussions with MRWMD, knowledge of the site's GCCS, and experience with GCCS compliance, design, and construction.

The following tasks have been developed based on correspondence with MRWMD and Tetra Tech's knowledge and experience on similar projects:

- Task 1 – GCCS Evaluation and Recommendations
- Task 2 – GCCS Wellfield Improvements Design
- Task 3 – GCCS Construction Bidding Documents
- Task 4 – GCCS Wellfield Improvements Bidding and Contractor Selection
- Task 5 – GCCS Wellfield Improvements Construction QA/QC

### Task 1 – GCCS Evaluation and Recommendations

Tetra Tech will prepare an evaluation of the GCCS wellfield using up to six months of the most recent wellfield performance data (all data provided by MRWMD) to prepare a summary of recommendations and wellfield improvements geared towards improving LFG quality for the GCCS and specifically towards the requirements for the LFG-to-RNG project. Tetra Tech will prepare a wellfield status map, which assigns each well to a group or priority according to key operational parameters that determine potential actions to be taken at or near the well. The methane content, oxygen content, available system vacuum, LFG flow rates, and percentage of perforations watered in will be considered at each well location. Tetra Tech will analyze trends based on the previous six months of wellfield data. Missing information and decommissioned wells will be omitted from these efforts.

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Tetra Tech will prepare recommendations which will include a summary and discussion of GCCS performance to further evaluate and assess the success of efforts to increase LFG quality for the RNG project. The recommendations will present a list of near-term repairs and upgrades, such as additional GCCS wells, to the on-site GCCS to meet the current requirements for the GCCS, as well as further address LFG quality in the wellfield. The repairs and upgrades will focus on enhancing the GCCS to optimize the GCCS both now and in the future. Tetra Tech has assumed for budgeting purposes that the near-term repairs and GCCS upgrades and compliance recommendations will be described in general narrative form. Detailed construction drawings and specifications are not provided under this task but are provided later within this scope of work.

Upon 85-percent completion of the recommendations for the site, an electronic copy will be submitted to MRWMD for review and comments. At this time, a conference call with MRWMD and Tetra Tech will be set up to review the assessment and recommendations. Tetra Tech will then include mutually agreeable comments and prepare a PDF of the final recommendations for MRWMD. No additional site visits have been budgeted to discuss results of the assessment at this time.

Task 1 - Deliverables, Meetings, and Conference Calls:

The following summarizes the deliverables, meetings, and teleconferences to be prepared and submitted under this task:

- Preparation of a draft GCCS evaluation and recommendations to be submitted electronically (PDF) to MRWMD;
- Host one teleconference call with MRWMD to discuss the draft GCCS evaluation and recommendations; and
- Incorporate mutually agreed upon edits and submit a final electronic PDF of the draft GCCS evaluation and recommendations.

**Task 2 – GCCS Wellfield Improvements Design**

Tetra Tech will prepare design drawings for the construction of GCCS improvements including well and piping improvements. The goal of the design would be to collect higher quality LFG (i.e., lower oxygen and nitrogen content, high methane quality) to be provided to the GCCS control devices and specifically the RNG project. This may also include reducing the flow from or elimination of poor quality LFG collection wells. Based upon the current topography, Tetra Tech will prepare preliminary GCCS design drawings.

The plan set will consist of a title sheet, a site plan showing current topography, existing GCCS, proposed improvements, and detail sheets. Detail sheets will show how connections to piping will be made, and indicate which materials, fittings, and valves shall be used.

Once MRWMD has reviewed the preliminary GCCS design drawings, Tetra Tech will incorporate any mutually agreed upon comments, and finalize the GCCS design drawings, suitable for obtaining contractor bids from contractors familiar with GCCS construction.

Tetra Tech assumes that MRWMD will provide Tetra Tech with the necessary details of the current active phase of the landfill, the location and details of construction for the existing GCCS components, plans for future phases, and information regarding waste depths, liner elevations, and leachate/condensate management systems.

Task 2 - Deliverables, Meetings, and Conference Calls:

The following summarizes the deliverables, meetings, and teleconferences to be prepared and submitted under this task:

- One electronic file of preliminary GCCS improvements design drawings for the improvements;

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- Host one teleconference call with MRWMD to discuss the draft GCCS improvements design drawings; and
- One electronic file of preliminary GCCS improvements design drawings, with comments from MRWMD incorporated.

### **Task 3 – GCCS Construction Bidding Documents**

Tetra Tech will assist with MRWMD’s public bidding process by preparing bidding documents in accordance with MRWMD’s format. The Construction Plans finalized in Task 2 will be of sufficient detail to allow for installation by experienced GCCS contractors. Specifications for key components, such as valves, pumps, or appurtenances, will be provided in the GCCS improvements design drawings. As such, a technical specifications package will not be included in the design. Tetra Tech assumes that the bid solicitation will be to experienced LFG contractors only.

Under this task, Tetra Tech will prepare a preliminary bid schedule and an engineer’s estimate for use in the bid package. Tetra Tech will submit the preliminary bid schedule and engineer’s estimate to MRWMD for review and comment. Tetra Tech will then incorporate mutually agreeable comments and finalize the bid schedule and engineer’s estimate for MRWMD’s use in bid solicitation.

#### Task 3 - Deliverables, Meetings, and Conference Calls:

The following summarizes the deliverables, meetings, and teleconferences to be prepared and submitted under this task:

- One electronic file of the prepared preliminary bid schedule and an engineer’s estimate;
- Host one teleconference call with MRWMD to discuss the draft engineer’s estimate; and
- One electronic file of the final bid schedule and engineer’s estimate.

### **Task 4 – GCCS Wellfield Improvements Bidding and Contractor Selection**

Upon release of the Bidding Documents, Tetra Tech will assist MRWMD for the duration of the bidding process. Tetra Tech personnel will attend a Pre-Bid meeting at MRWMD to discuss the project with the prospective contractors and answer any questions.

The bid process will include a deadline for any questions or clarifications requested by the prospective contractors. Upon receipt of all questions and clarification requests, Tetra Tech will prepare an addendum (or addenda, as necessary) to provide answers to contractor questions and to provide clarifications regarding the project.

Tetra Tech will provide a review of contractor bids upon receipt of proposals from prospective contractors for the GCCS installation. Tetra Tech will prepare a summary of the bids received and provide a recommendation for contractor selection. This summary and recommendation will be submitted to MRWMD for review.

#### Task 4 - Deliverables, Meetings, and Conference Calls:

The following summarizes the deliverables, meetings, and teleconferences to be prepared and submitted under this task:

- One site visit for Tetra Tech’s project manager to attend the Pre-Bid meeting;
- Addendum, or addenda, as necessary, to address contractor clarifications;
- Review of contractor bids; and
- Summary of bids with recommendation to MRWMD.

## **Task 5 – GCCS Wellfield Improvements Construction QA/QC**

### **Pre-Construction**

Following contract execution between MRWMD and the selected contractor, Tetra Tech will arrange a construction kickoff meeting at the site prior to the start of construction activities. This meeting may occur immediately prior to construction. MRWMD personnel, the selected contractor, and Tetra Tech, will review the staging areas for construction, materials storage and laydown areas, the general and special conditions, scope of work, project schedule, health and safety issues, project management protocols, coordination with MRWMD staff and operations, technical issues, schedule milestones.

Tetra Tech will assist with the engineering related services for (quality assurance/quality control) QA/QC of the design drawings. To avoid issues during construction, a pre-construction survey will be performed by the contractor's surveyor. This survey will include the staking of proposed wells and piping alignments by a California licensed survey contractor. Based on the survey data, Tetra Tech will update the GCCS improvements design drawings to reflect current field conditions and perform QA/QC on the well schedule to prepare the well schedule for signatures. Tetra Tech assumes, survey points for piping alignments will be received in increments of one point per every ten feet in order to assure that piping alignments can be designed with proper slope. Tetra Tech assumes one round of QA/QC may be done. Once the drawings have been updated, Tetra Tech will finalize the drawing package and resubmit it to MRWMD as Issued for Construction in PDF.

### **During Construction**

For budgeting purposes, Tetra Tech included full time construction quality assurance (CQA) and will attend weekly construction progress meetings. Construction progress meetings will be led by MRWMD.

Tetra Tech will provide CQA oversight during the construction improvements to observe critical items including but not limited to, tie-ins and below grade piping. Tetra Tech will be on site to witness all significant construction activities and will adhere to the policies and procedures outlined in the design drawings and specifications.

Tetra Tech estimates that the CQA monitor will be on site for eight weeks, with five 10-hour work days, and the budget provided later in this proposal reflects this assumption. The budget will need to be modified with any changes to the actual construction duration and schedule. Tetra Tech recognizes the actual construction activities may exceed eight weeks. Tetra Tech also assumes that the project will be scheduled as such to allow Tetra Tech to witness the critical items within the eight weeks of on-site CQA.

Additionally, as issues or concerns arise throughout the construction period, Tetra Tech will be available to answer specific questions regarding the design and specifications of the GCCS. Tetra Tech will coordinate all questions or clarification requests through MRWMD personnel to ensure proper communication between all parties. All requests and clarifications will be documented and will be provided to the contractor and MRWMD personnel. On a weekly basis, Tetra Tech will prepare a memorandum with meeting notes from the weekly progress meetings, a summary of all clarification requests received in that period, and a budget status update.

### **Substantial Completion**

Upon completion of the GCCS installation, Tetra Tech's project manager or engineer will attend a final construction completion job walk and will prepare a construction completion punch list. Tetra Tech will work with the construction contractor to assure that the project punch list is completed.

Tetra Tech will prepare a construction report summarizing engineering and quality control observations and inspections of the horizontal collector tie-ins and piping installation. This report will describe the methods and procedures with respect to compliance with the design and technical specifications and contain photographic documentation of construction activities. A draft of the construction report will be submitted to the MRWMD for review and comment. Upon receipt of the MRWMD's review comments, the construction report will be finalized and four copies submitted to the MRWMD.

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Tetra Tech will utilize construction notes, photographs, as-built survey data, and as-built drawings to provide a complete set of record drawings for the project. The final as-built survey will be completed by the contractor and provided to Tetra Tech. When completed, Tetra Tech will submit two reproducible sets and electronic copies of the record plans to the MRWMD along with the construction report for recordkeeping.

Task 5 - Deliverables, Meetings, and Conference Calls:

The following summarizes the deliverables, meetings, and teleconferences to be prepared and submitted under this task:

- Attend an onsite pre-construction meeting;
- Complete QA/QC and submit the Issued for Construction drawings ;
- Agenda and meeting minutes following the pre-construction conference;
- Full time CQA for eight weeks at five days per week, 10 hours per day;
- Attend an onsite final walk through at the completion of construction;
- Prepare a punch list based on the walk through and distribute electronically; and
- Submit one electronic copy of the construction report and record drawings.

**BUDGET**

Tetra Tech proposes to perform the scope of work on a time and materials (T&M) basis. For this project, Tetra Tech will invoice according to the completed portion of the respective tasks, as per the estimated task budget shown.

Task	Labor Cost	Other Direct Costs	Total Task Cost
Task 1 – GCCS Evaluation and Recommendations	\$11,838	\$592	\$12,430
Task 2 – GCCS Wellfield Improvements Design	\$18,634	\$932	\$19,566
Task 3 – GCCS Construction Bidding Documents	\$7,464	\$373	\$7,837
Task 4 – GCCS Wellfield Improvements Bidding and Contractor Selection	\$9,718	\$879	\$10,597
Task 5 – GCCS Wellfield Improvements Construction QA/QC	\$91,644	\$20,820	\$112,464
<b>Total</b>	<b>\$139,298</b>	<b>\$23,596</b>	<b>\$162,894</b>

The estimated cost and proposed scope of work are based on information available to Tetra Tech at this time. If conditions change, unforeseen circumstances are encountered, or work efforts are redirected, the cost estimate may require modification.

## ASSUMPTIONS

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Tetra Tech made the following assumptions while preparing the budget and schedule:

- MRWMD will provide any necessary existing information needed to complete the tasks, including, but not limited to, as-built information in AutoCAD format and any design drawings/components completed by third parties, at no cost to Tetra Tech;
- Tetra Tech CQA personnel will be on site to witness construction activities for a total of ten hours per day, for five days a week, for eight weeks, which includes all meetings, survey assistance, and the final job walk. Additional time will be a changed condition;
- Tetra Tech's CQA Monitor and Project Manager will be present at the final walk-through meeting;
- If the construction contractor is required to don supplied air PPE to enter an area with unsafe hydrogen sulfide levels, it is assumed the Tetra Tech CQA Monitor will observe construction activities from an upwind, safe location;
- Survey will be included as part of the GCCS Contractor's scope of work;
- No permitting efforts will be included in this scope of work;
- Tetra Tech will be provided access to the site to verify the existing site conditions and construction and to review and reproduce hard copy materials that may be stored on-site;
- Additional site visits are not included unless indicated as such in the subtasks;
- Tetra Tech assumes software that will be needed is limited to Microsoft Office suite and AutoCAD, any additional software that is required to be purchased will be charged to MRWMD;
- Vendors providing information and work product for fulfillment of the tasks outlined above will not be contracted through Tetra Tech; and
- MRWMD will provide Tetra Tech with the design drawings/components completed by third parties at no cost to Tetra Tech.

## SCHEDULE

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Tetra Tech is prepared to begin work on this project upon receipt of notice to proceed from MRWMD.

## TERMS AND CONDITIONS/APPROVAL

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This work will be governed in accordance with the terms and conditions for Professional Consulting Services by and between Tetra Tech and MRWMD and Tetra Tech's Schedule of Charges. Please indicate your approval by signing below. Approval indicates your acceptance of the scope of work and pricing and becomes an addendum to the Master Service Agreement for Professional Consulting Services. Any modifications to the attached language must be accepted by both parties.


We appreciate the opportunity to present this proposal for your review. Do not hesitate to contact us if you have any questions or comments or require additional information. We look forward to providing MRWMD with these services should you find this proposal acceptable.



Mr. Guy Petraborg  
March 9, 2022

**TETRA TECH BAS, INC.**

  
Alex Newell, P.E.  
Engineering Manager

  
Paul Stout, P.E.  
Vice President of Operations

This proposal and all enclosures have been reviewed and are hereby agreed to and approved.

**Monterey Regional Waste Management District**

By \_\_\_\_\_

Date \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_