

THE INFORMATION IN THIS BOX IS NOT A PART OF THE CONTRACT AND IS FOR COUNTY USE ONLY



Contract Number

18-144-A1

SAP Number

Real Estate Services Department Project Management Division

Department Contract Representative	<u>Darlynn Wissert</u>
Telephone Number	<u>909-387-5000</u>
Contractor	<u>Tetra Tech, Inc.</u>
Contractor Representative	<u>Benjamin Weink</u>
Telephone Number	<u>909-381-5120</u>
Contract Term	<u>April 1, 2018 – March 31, 2023</u>
Original Contract Amount	<u>\$3,510,540.63</u>
Amendment Amount	<u>\$2,871,200.76</u>
Total Contract Amount	<u>\$6,381,741.39</u>
Cost Center	<u>WBSE 10.10.0556</u>

IT IS HEREBY AGREED AS FOLLOWS:

AMENDMENT NO. 1

The County and Tetra Tech, Inc. (Contractor) hereby agree to amend Contract No. 18-144 as follows:

ARTICLE 1. THE PROJECT, Section 1.2 is amended to read:

1.2 Total Contract Amount

The total Contract amount as determined by the County shall not exceed \$6,381,741.39, for the term of this Contract, subject to any amendments.

ARTICLE 4. COMPENSATION, Section 4.1 is amended to read:

4.1. The maximum amount of payment under this Contract shall not exceed \$6,381,741.39. The Deputy Director is authorized to move funds between the tasks identified in the Contract, but the total payments under this Contract shall now exceed \$3,510,540.63. The consideration to be paid to Contractor, as provided herein, shall be in full payment for all Contractor's services and expenses incurred in the performance hereof, including travel and per diem. Compensation payments shall be per Attachments B-1 through B-6, Rate Schedule, for the term of this Contract.

Attachment A, Contractor Scope of Work is deleted and replaced in its entirety with the revised Attachment A, Contractor Scope of Work.

All other terms and conditions of the Contract remain in full force and effect.

This Amendment may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, and such counterparts shall together constitute one and the same Amendment. The parties shall be entitled to sign and transmit an electronic signature of this Amendment (whether by facsimile, PDF or other email transmission), which signature shall be binding on the party whose name is contained therein. Each party providing an electronic signature agrees to promptly execute and deliver to the other party an original signed Amendment upon request.

SAN BERNARDINO COUNTY

▶ *Curt Hagman*
Curt Hagman, Chairman, Board of Supervisors

Dated: NOV 16 2021

SIGNED AND CERTIFIED THAT A COPY OF THIS DOCUMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD

By *Layna Morrell*
Layna Morrell, Clerk of the Board of Supervisors
San Bernardino County
Deputy



Tetra Tech, Inc.

(Print or type name of corporation, company, contractor, etc.)

By ▶ *BM Weink*
(Authorized signature - sign in blue ink)

Name Benjamin M. Weink
(Print or type name of person signing contract)

Title Vice President
(Print or Type)

Dated: 11/3/21

Address 301 E. Vanderbilt Way, Suite 450
San Bernardino, California 92408

FOR COUNTY USE ONLY

Approved as to Legal Form
▶ *Kristina M. Robb*
Kristina M. Robb, Principal Assistant County Counsel
Date 11/2/21

Reviewed for Contract Compliance
▶ _____
Date _____

Reviewed/Approved by Department
▶ *James E. Jenkins*
James E. Jenkins, Director
Date 11/3/2021



ATTACHMENT A

SCOPE OF WORK CONTRACT FOR TETRA TECH, INC. FOR GROUNDWATER REMEDIATION PROJECT SUPPORT

Period of Performance: April 1, 2018 through March 31, 2023

Tetra Tech has prepared this scope of work (SOW) for the County of San Bernardino Real Estate Services Department – Project Management Division (PMD) in response to the requirements identified in California Regional Water Quality Control Board (RWQCB) Santa Ana Region Cleanup and Abatement Order (CAO) No. R8-2017-0011 for Chino Airport (2017) and the proposed remedial actions outlined in the *Draft Interim Remedial Action Plan, Chino Airport, San Bernardino County, California* (Tetra Tech, 2017). The SOW has been organized by the planned activities associated with the Groundwater Remediation Project over the five year period of performance (April 1, 2018 through March 31, 2023). The following tasks will be completed to keep the County in compliance with the CAO and move the program forward with the development, stakeholder approval, design, procurement support, and oversight of the final groundwater remedy approved by the RWQCB.

Planned Activities

- Task 1 - Construction Administration for Well Installations, Destructions, and Aquifer Testing
- Task 2 - Numerical Groundwater Modeling and Reporting
- Task 3 - Preliminary Remedial Design
- Task 4 - Remedial Action Work Plan
- Task 5 - Final Design and Permitting
- Task 6 - Construction Bid Documents
- Task 7 - Construction Oversight
- Task 8 - Groundwater Monitoring
- Task 9 - Plume Mitigation Support and Strategic Planning
- Task 10 - Community Outreach Support
- Task 11 - Operations, Maintenance and Monitoring (OM&M) Reporting
- Task 12 - Additional RWQCB Required Sampling, Testing, and Studies for Compliance with the Cleanup and Abatement Order



Labor rates for this contract are included as Attachments A-1 through A-5. The total estimated costs for each of the tasks described in this SOW are shown in Table A-1 on page \$ 6,381,741.39.

TASK 1: CONSTRUCTION ADMINISTRATION FOR WELL INSTALLATIONS, WELL DESTRUCTIONS, AND AQUIFER TESTING

Tetra Tech will provide construction administration support to the County for the well installations, well destructions, and aquifer testing outlined in the *Groundwater Well Installation and Aquifer Pumping Test Work Plan* (Tetra Tech, 2017) and the County issued bid documents and technical specifications for Project No. 10.10.0560 (8Q03). The planned activities in support of this task include the following.

- Provide on-site geologists to oversee drilling, well installation, well destruction, and aquifer testing activities performed by the Contractor
- Collection of soil and groundwater samples for analytical testing
- Prepare well designs based on lithologic data and soil and groundwater analytical results
- Review of Contractor submittals as requested by PMD
- Coordination with PMD regarding on-site inspections
- Support the County with well permitting and right-of-entry (ROE) agreements
- Provide support to the County regarding notifications to property owners and tenants regarding site access and the schedule of field activities

Under this task, Tetra Tech will perform the sampling activities as described in the RWQCB-approved work plan prepared to meet the requirements of the CAO. Tetra Tech will provide on-site geologists to oversee the field activities performed by the Contractor which will include pumping and observation well installations, monitoring well installations, on-site production well destructions, installation of a temporary groundwater pump and treat system, step testing, well surveying activities, and investigative-derived waste management including on-site treatment and surface discharge of well water generated during the aquifer tests. Tetra Tech's on-site activities in support of the field program will include lithologic logging, screening soil headspace and the workers' breathing zone for total organic vapors, collection of soil and groundwater samples, development of well designs, data collection during aquifer testing, and supervision of well installations and general direction of the Contractor to comply with the contract scope of work and technical specifications. Tetra Tech will provide oversight and scheduling for the surveying of extraction, observation, and monitoring wells upon completion of installation activities. Surveying will be performed



by a licensed surveyor under separate contract with the County. It is assumed that cost for well permits (installation and destruction) and ROE agreements, and any other permits required for this project will be paid by others.

TASK 2: NUMERICAL GROUNDWATER MODELING AND REPORTING

For this task, Tetra Tech will update the existing steady-state groundwater model prepared for the feasibility study. The proposed model update will use aquifer testing data collected at specific Airport monitoring and pumping wells to calibrate the site-specific groundwater flow model to transient conditions. The transient groundwater flow model will then be used to assist with the final remedial design.

Under this task a report will be prepared that presents the results of the well installations, well destructions, and aquifer testing performed. Upon completion of field activities, a draft report will be prepared and submitted to the RWQCB. The report will summarize findings of the field program, analytical data from the samples collected, and a summary of the aquifer testing. Recommendations for additional work, if any, will be included in this report.

The preliminary draft report will be submitted to the County for review. Comments that arise from these reviews will be addressed in a draft report that will be submitted to RWQCB. Upon receipt of comments, one final report will be generated and submitted to the RWQCB. It is anticipated that no more than two rounds of comments will be needed to finalize the report. All submittals will be uploaded in electronic format to Geotracker.

TASK 3: PRELIMINARY DESIGN

This task will consist of developing the preliminary design for the Chino Airport groundwater remedy. The bulk of the design will take place during this task, following approval of the Interim Remedial Action Plan (IRAP) for the site and development of the transient groundwater flow model. The first step will be to develop the basis of design that presents the technical approach and reasoning for the design, as well as the design parameters to be used. Tetra Tech will discuss the design basis with the County of San Bernardino prior to initiating the design to ensure that the various factors influencing the project are accounted for and that the County's requirements are incorporated into the design.



The preliminary design will build upon the engineering parameters (for example, groundwater extraction flow rates, equipment sizing, and well construction and pipeline specifications) and design requirements or constraints (for example, permit and building code requirements, electrical requirements, and Chino Basin Desalter Authority (CDA) or other discharge facility requirements) presented in the IRAP, and will include engineering design specifications and calculations such as equipment sizing, road crossings, materials of construction, seismic stabilization of storage tanks, process control parameters, and electrical supply options. It is anticipated that a preliminary design will also be generated for a second treatment system location, although it is assumed that the system will be similar to the primary treatment system. This task does not, however, include design work for any brine treatment or management.

Draft drawings will be developed up to an approximately 60% level and will be sufficient for discussion and internal review purposes. Draft Technical Specifications will be developed and presented in Construction Specifications Institute format (if requested). Tetra Tech will meet with the County of San Bernardino to discuss the design package and to receive any review comments on the design.

TASK 4: REMEDIAL ACTION WORK PLAN

Tetra Tech will prepare a Remedial Action Work Plan (RAWP) that provides the procedures for implementing remedial action fieldwork to address the objectives of the Final Interim Remedial Action Plan (IRAP) for the Airport. The RAWP will expand on the IRAP and the design by describing the specific activities required to implement the remedy at the site and accomplish the Remedial Action Objectives that were formalized in the IRAP. The RAWP will summarize the scope of work; relevant site background information and current conditions; regulatory framework guiding the remedial action; supporting project plans such as a health and safety plan and traffic control plan, among others; pre-remedial action activities such as permitting, notifications, and access agreements; and remedial action implementation, including mobilization, temporary facilities, installation of pipelines (both onsite and in public roadways) and two groundwater treatment systems, and ancillary services such as electrical and water supply and hookup to the receiving facility such as the CDA or Inland Empire Utilities Agency (IEUA).

The anticipated list of supporting plans includes the following:

- Health and Safety Plan
- Community Safety Plan



- Construction Quality Assurance (CQA) Plan
- Ambient Air Monitoring Plan
- Storm Water Pollution Prevention Plan
- Traffic Control Plan
- Waste Management Plan
- Operation, Maintenance, and Monitoring (OM&M) Plan / Major Equipment List and Cut Sheets

A draft RAWP will be submitted to the County for distribution to the RWQCB. Tetra Tech will respond to RWQCB comments, revise the RAWP, and submit a final RAWP for approval. It is anticipated that no more than two rounds of comments will be addressed prior to approval. All submittals will be uploaded in electronic format to Geotracker.

TASK 5: FINAL DESIGN AND PERMITTING

This task will consist of developing the final design for the Chino Airport groundwater remedy. The preliminary design plans and specifications will be taken to 90-100% and will include incorporation of review comments from the preliminary design package. Additional comments will be incorporated following Chino Airport's review of the 90-100% package, and the package will be finalized for submittal to the RWQCB. The final design package will include 100% design-level drawings, specifications, engineering calculations, and equipment lists. The design for the second treatment plant location will also be finalized. All final for-construction plans, specifications, and supporting engineering documents will be stamped by a licensed Professional Civil Engineer (CE) registered in California.

A large part of the final design and cost will be the production of pipeline plan and profile drawings for the more than 13,000 feet of piping that will be installed within public roadways. This will require not only generating the profiles but also obtaining the current roadway drawings from the City depicting roadway and improvement elevations, as well as profiles of existing pipelines.

Following completion of the final design, Tetra Tech will submit the final Construction Plans to the appropriate City departments (i.e., Building/Fire/Public Works, etc) for Plan review and approval. Tetra Tech will prepare permit applications for a South Coast Air Quality Management District permit if required for the plant operation, a Caltrans permit for crossing Euclid Avenue with the influent pipeline, a Construction General NPDES permit, and City permits as needed for access to public roadways or other



City properties. Tetra Tech will prepare the permit applications and any required supporting documentation for review and approval by the County. The actual permit fees will be paid by the County or others. Tetra Tech did not include the cost of negotiating with or obtaining a discharge permit or approval from CDA or the IEUA for the VOC treated discharge water.

TASK 6: CONSTRUCTION BID DOCUMENTS

This task will consist of preparing construction/bid documents for the Chino Airport groundwater remedy, including Construction Bid Specifications, Contract Bid Documents, and Construction Plans. It is anticipated that the final Technical Specifications and Construction Plans generated during the final design (Task 5) will be suitable for incorporation into the County's construction contractor procurement package, although with more clearly written details regarding the scope of work than the CSI format provides, and with incorporating the County's and Chino Airport's specific requirements (i.e., safety) during the project. Tetra Tech will then prepare the Bid Documents, including a detailed Bid Sheet, for the bid package. Tetra Tech will work with PMD throughout the procurement process to ensure that the Bid Documents and Specifications meet the County's specific needs for public project procurement. Tetra Tech personnel will attend the bidder's walk(s) at the Airport, answer bidder's questions and provide written clarifications, and assist the County as requested in evaluating bids in the event that clarifications are required.

TASK 7: CONSTRUCTION OVERSIGHT

This task includes several aspects of overseeing the general contractor during remedial action implementation. Several kick-off meetings are anticipated due to the complex nature of implementation, including a meeting between Tetra Tech and the County, an additional meeting at the site that includes the contractors and subcontractors, and one between Tetra Tech, PMD, and the general contractor to discuss specific roles and responsibilities, inspections, project sequencing and tracking, etc.

In addition, a Tetra Tech engineer would be on-site as requested by PMD to inspect the progress and the work to ensure conformance with the design and to offer clarification of any issues that may arise. Tetra Tech will also provide other engineering services during construction that include reviewing and providing answers/clarifications to contractor questions, reviewing and approving (or offering advice to the County for approving) contractor change orders, and discussing potential design changes with the County and the general contractor based on field conditions and observations. Tetra Tech will finalize the OM&M manual



based on the final equipment, process systems, and discharge option installed, and at the completion of construction, we will prepare a Final Remedial Action Completion Report (RACR) that documents all implementation activities through start-up of the system, including inspection reports, field forms, QA test results, site photos, waste manifests, and other documentation, and Final Record Drawings that will be signed by a licensed California Professional Civil Engineer who is also the Engineer of Record.

Although general construction oversight and inspections have been included, overall management of the project (schedule/cost tracking and ongoing meetings with the County, contractors, and/or RWQCB) and tasks typically performed as part of the construction, such as air monitoring, health and safety monitoring, and waste sampling and management, have not been included.

TASK 8: GROUNDWATER MONITORING AND REPORTING

Groundwater monitoring and reporting for the Chino Airport Groundwater Remediation Project will continue as outlined in the updated groundwater monitoring plan (GMP) (Tetra Tech, 2017). The groundwater monitoring program includes the sampling of the 75 site-related wells sampled on a quarterly, semiannual, annual, or biennial basis and newly installed wells that will be sampled quarterly for one year before being rolled into the GMP.

All existing groundwater monitoring wells will be measured for groundwater levels during each of the quarterly events. Newly installed wells in 2018 will be sampled in Summer 2018 and Fall 2018 after the wells have been surveyed and the dedicated pumps have been installed in the monitoring wells. Extraction wells will be sampled after installation for a period of two quarters utilizing a portable submersible bladder pump.

Semiannual groundwater monitoring reports for the Winter-Spring and Summer-Fall sampling events will be submitted to the County, County Counsel, Chino Basin Watermaster (CBW), and CDA. Reports will be delivered electronically via Geotracker to the RWQCB. The groundwater monitoring reports will include tabulated summaries of the data collected, groundwater elevation hydrographs, and groundwater contour maps. Winter-Spring groundwater monitoring reports will also include contaminant concentration plume maps and statistical evaluation. Statistical and temporal trend analysis will be performed after each spring sampling event has been completed. Tetra Tech will continue to use the C Tech Earth Volumetric Studio software for three-dimensional mapping of the impacted groundwater and Monitoring and Remediation



Optimization System (MAROS) software to assist with the groundwater data trend analysis and long-term monitoring optimization.

TASK 9: PLUME MITIGATION SUPPORT AND STRATEGIC PLANNING

For this task, Tetra Tech will continue to provide as needed technical and engineering support and strategic planning to the County of San Bernardino for the Chino Airport Groundwater Remediation Project. This task will include discussions, meetings, preparation of work-products, and strategic planning with outside legal counsel, County Counsel, Department of Airports, and PMD to evaluate implementation of the final remedy and the County's participation in treatment requirements for existing desalter wells. In addition, Tetra Tech will continue to support the County with the insurance claims and potential cost-recovery efforts from potentially responsible parties (PRPs) regarding the environmental pollution originating from Chino Airport. As needed, Tetra Tech will prepare presentation materials and attend meetings with the County, outside legal counsel, CDA, CBW, the RWQCB, and/or the insurance carriers regarding the Chino Airport Groundwater Remediation Project or other issues related to contamination at Chino Airport.

TASK 10: COMMUNITY OUTREACH SUPPORT

Provide continued support with the community outreach program for the Chino Airport Groundwater Remediation Project. The public meeting for the IRAP was held on January 18, 2018 and the public comment period for the IRAP is expected to end on April 18, 2018. Tetra Tech will continue to work with the public to clarify and/or address any questions on the IRAP during the public comment period in addition to additional community outreach efforts during the remedy design and construction phase.

TASK 11: OPERATIONS, MAINTENANCE AND MONITORING REPORTING

After the installation of the groundwater extraction and treatment system (GETS), the primary method for evaluating the effectiveness of hydraulic containment of contaminants of concern (COCs) by the GETS is performance groundwater monitoring, which includes collection of water level and water quality data. As stated in the Section 5.3 of the *Interim Remedial Action Plan*, the groundwater monitoring program would consist of long-term monitoring (LTM) and Monitored Natural Attenuation (MNA) monitoring. The MNA monitoring would be combined with the groundwater LTM program to monitor ongoing MNA processes and point of compliance wells to verify that the plume is not expanding.



A monitoring report would be prepared following each semi-annual sampling event. Results of each annual sampling event would be presented in an Annual OM&M Report, which would include an evaluation of plume stability, COC trend analysis, and the geochemical environment in the groundwater aquifer and its ability to naturally degrade site contaminants over time. In addition, the existing transient groundwater flow model will be updated and recalibrated as part of this task to include aquifer test data gathered from hydraulic testing of off-site groundwater extraction wells installed as part of remedial action construction. The updated groundwater flow model will then be used to provide additional evidence to confirm the effectiveness of the hydraulic containment of COCs by the GETS. The groundwater flow model will also be used to assess the effects of changing hydraulic conditions that are noted during the monitoring period. The Annual Report would include evaluation of the GETS performance with respect to capture of groundwater as well as the resulting changes in groundwater quality. Semi-Annual and Annual OM&M reports would be prepared in years 2021 and 2022 and submitted to the RWQCB for review.

TASK 12: ADDITIONAL RWQCB REQUIRED SAMPLING, TESTING, AND STUDIES FOR COMPLIANCE WITH THE CLEANUP AND ABATEMENT ORDER

For this task, Tetra Tech will prepare, implement and submit technical reports and work plans for any additional work that the Executive Officer of the RWQCB deems necessary to sufficiently characterize the lateral and vertical extent of VOCs in soil and groundwater that are discharging, have been discharged, or threaten to be discharged and are attributable to the Airport. All work plans shall be submitted and implemented in accordance with time schedules approved by the Executive Officer of the RWQCB. Work under this task may include additional sampling and testing or technical studies to demonstrate the final groundwater remedy is meeting the remedial action objectives set forth in the final IRAP as required by the RWQCB for compliance with the CAO.

References:

California Regional Water Quality Control Board (RWQCB) Santa Ana Region
2017, *Cleanup and Abatement Order (CAO) No. R8-2008-0064 for San Bernardino County*
Department of Airports, Chino Airport, City of Chino, San Bernardino County, June 27.

Tetra Tech, Inc.
2017, *Groundwater Well Installation and Aquifer Pumping Test Work Plan, Chino Airport, San Bernardino County, California*, (Prepared for the County of San Bernardino, Department of Airports Administration), July.



2017, *Draft Interim Remedial Action Plan, Chino Airport, San Bernardino County, California*,
 (Prepared for the County of San Bernardino, Department of Airports Administration), December.

Table A-1
Total Estimated Cost 2018-2023

Task No.	Description	Cost
1	Construction Administration for Well Installations, Destructions, and Aquifer Testing	\$ 749,831.40
2	Numerical Groundwater Modeling and Reporting	\$ 306,396.69
3	Preliminary Remedial Design	\$ 464,909.61
4	Remedial Action Work Plan	\$ 154,848.00
5	Final Design and Permitting	\$ 1,114,638.04
6	Construction Bid Documents	\$ 181,133.00
7	Construction Oversight	\$ 893,532.60
8	Groundwater Monitoring	\$ 1,490,335.19
9	Plume Mitigation Support and Strategic Planning	\$ 415,924.66
10	Community Outreach Support	\$ 51,339.47
11	Operations, Maintenance and Monitoring (OM&M) Reporting	\$ -
12	Additional RWQCB Required Sampling, Testing, and Studies for Compliance with the Cleanup and Abatement Order	\$ 558,852.75
	TOTAL	\$ 6,381,741.39