PSA - 1325

AMENDMENT NO. 2

CITY OF CHICO - PROFESSIONAL SERVICES AGREEMENT

AGREEMENT DATED OCTOBER 20, 2014

BETWEEN CITY OF CHICO

AND

EMKO ENVIRONMENTAL, INC.
Consultant

GROUNDWATER MONITORING AND GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATIONS AND MAINTENANCE 2014-**2016** – CHICO MUNICIPAL AIRPORT
Project Title

312-000-8801/45052-312-4150
Budget Account No.

THIS PROFESSIONAL SERVICES AGREEMENT AMENDMENT (Amendment) is entered into on 1/4/16, 2015, between the City of Chico, a municipal corporation under the laws of the State of California (City), and EMKO Environmental, Inc., a California corporation, (Consultant). On October 20, 2104, City and Consultant entered into "City of Chico - Professional Services Agreement" (Agreement). On December 4, 2014, City and Consultant entered into Amendment No. 1 to the Agreement. The provisions of the Agreement are hereby amended as follows:

1. Exhibit A is hereby superseded and replaced by revised Pages A-1R2 through A-3R2 attached hereto.

2. Exhibit B is hereby superseded and replaced by revised Pages B-1R2 through B-11R2 attached hereto

3. Exhibit C is hereby superseded and replaced by revised Pages C-1R1 through C-3R2 attached hereto.

4. All other provisions of the Agreement shall remain in full force and effect.

CITY:

Mark Orme

Mark Orme, City Manager*

CONSULTANT:

By: Andrew A. Kopania, Principal

*Authorized pursuant to Section 3.08.060
of the Chico Municipal Code.

APPROVED AS TO FORM:

Vincent C. Ewing, City Attorney*

*Approved pursuant to The Charter of the
City of Chico § 906(D)

APPROVED AS TO CONTENT:

Brendan Ottoboni, Acting Public Works
Director - Engineering

REVIEWED AS TO CONTENT:

Frank Fields, Administrative Services Director*

*Reviewed by Risk Management, Human
Resources, Finance and Information Systems.

AMENDMENT NO. 2

CITY OF CHICO - PROFESSIONAL SERVICES AGREEMENT

EMKO ENVIRONMENTAL, INC.
Architect/Consultant/Engineer

GROUNDWATER MONITORING AND GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATION AND MAINTENANCE 2014-**2016** – CHICO MUNICIPAL AIRPORT
Project Title

312-000-8801/45052-312-4150
Budget Account No.

AMENDED
EXHIBIT A

DESCRIPTION OF PROJECT

2014-2015 SERVICES:

Under this Project, the Consultant shall provide semi-annual groundwater monitoring, operation, and maintenance (O&M) of the existing BCVE-1 groundwater extraction and treatment system (GWETS) and the BCV-27 GWETS, and preparation of monitoring reports for the Chico Municipal Airport (CMA).

This scope of services is based on the City's and Consultant's collective experience at the CMA site and the requirements of the Field Sampling and Laboratory Analysis Plan (FSLAP), which is Appendix B of the *BCVE-2 Groundwater Extraction and Treatment System; Final Remedial Design Report, Chico Municipal Airport, Chico, California* (Design Report), dated February 17, 2003.

These services shall cover the period from October 2014 through June 2015, to coincide with the City's fiscal year and to cover the second 2014 semi-annual groundwater monitoring period and the first 2015 semi-annual groundwater monitoring period.

This scope of services includes several repair and maintenance items that have been identified during field inspections and in recent correspondence with the Department of Toxic Substances Control (DTSC). Overall, there are three primary Project tasks, two specific maintenance tasks, and two additional tasks to address actions requested by the DTSC.

The three primary Project tasks are:

- Task 1: Well Sampling and Analysis
- Task 2: GWETS Operation and Maintenance
- Task 3: Reporting and Project Management

The following tasks address specific maintenance items for the BCV-27 groundwater treatment system and include:

- Task 4: BCV-27 Treatment System Enhancements and Safety Improvements
- Task 5: Double Containment and Safety Enhancements at the BCV-27 Well Head

The following two additional tasks shall address the requested actions listed in two DTSC letters: *Review of Second Half 2012 and First Half 2013 Groundwater Monitoring Reports Chico Municipal Airport, Chico, Butte County*, dated October 15, 2013; and *Review of Second Half 2013 and First Half 2014 Groundwater Monitoring Reports Chico Municipal Airport, Chico, Butte County*, dated July 24, 2014.

- Task 6: Extraction Well Efficiency Testing
- Task 7: Monitoring Well Survey and Repair

Amendment No. 1

The Consultant shall remove and replace the pump in extraction well BCVE-1 ten feet deeper than its current depth, lower the pump ten feet in extraction well BCV-27, and restart both systems.

Amendment No. 2

2015-2016 SERVICES:

The Consultant shall provide groundwater monitoring and O&M of the existing BCVE-1 GWETS and the BCV-27 GWETS at the CMA, and preparation of semi-annual monitoring reports for submittal to the DTSC for the period from October 2015 through June 2016.

This scope of services is based on the requirements described in the Settlement Agreement and Consent Decree between the California Environmental Protection Agency (EPA)/DTSC and the City (United State District Court, Eastern District of California, Case No. CIV-S-93-604 FCD JFM) and was developed to address these requirements as described below in the three primary Project tasks:

- **Task 1: Well Sampling and Analysis**
- **Task 2: GWETS Operation and Maintenance**
- **Task 3: Data Management and Reporting**

In addition to these primary tasks, the following additional task is included to address the requested action in the DTSC letter regarding *Review of Second Half 2012 and First Half*

***2013 Groundwater Monitoring Reports Chico Municipal Airport, Chico, Butte County*, dated October 15, 2013.**

- **Task 4: Extraction Well Efficiency Testing**

In addition, the Consultant shall prepare an update to the O&M Manual for the BCVE-1 and BCV-27 GWETS at the CMA. The update shall address April 8, 2015, comments from the DTSC and shall include changes to Appendix D: FSLAP.

AMENDMENT NO. 2

CITY OF CHICO - PROFESSIONAL SERVICES AGREEMENT

EMKO ENVIRONMENTAL, INC.
Architect/Consultant/Engineer

GROUNDWATER MONITORING AND GROUNDWATER
EXTRACTION AND TREATMENT SYSTEM OPERATION
AND MAINTENANCE 2014-**2016** – CHICO MUNICIPAL AIRPORT
Project Title

312-000-8801/45052-312-4150
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AMENDED
EXHIBIT B

SCOPE OF PROFESSIONAL SERVICES - BASIC; COMPLETION SCHEDULE

Scope of Professional Services - Basic

The Consultant, with the assistance of Subconsultant Brown and Caldwell (B&C) shall provide professional services as follows:

2014-2015 SERVICES:

Task 1: Well Sampling

As specified in the FSLAP, the Consultant, with the assistance of subconsultant Brown and Caldwell (B&C), shall gauge accessible monitoring wells to determine water levels and sample them semi-annually for volatile organic compounds (VOCs) using passive diffusion bags (PDBs). This scope of services includes collecting Project site-wide groundwater level data and groundwater samples, and purchasing and installing PDBs for two semi-annual sampling events. Each sampling shall only require one Project site visit.

This scope of services consists of two semi-annual Project site-wide groundwater sampling to include the following:

- Purchasing 35 laboratory-filled PDBs for two sampling events scheduled to be conducted in August 2013 and February 2014. A total of 70 PBDs shall be purchased for this subtask. The 35 PDBs for each event shall be utilized as follows: 30 shall be used for collecting primary well samples, two for duplicate

samples, one PDB water blank, and two for use as replacements in case of breakage.

- Measuring the depth to water and total well depth of each of the 30 monitoring wells during each sampling event.

- Removing and sampling the PDBs that were previously installed in the 30 monitoring wells.

- Submitting the well and quality assurance samples from each sampling event under chain-of-custody to a California-accredited analytical laboratory for analysis of VOCs by U.S. Environmental Protection Agency (EPA) Method 8260B.

In response to DTSC requests in their letter dated October 15, 2013, the Consultant shall sample two wells using a micro-purge methodology. This sampling shall be conducted during the semi-annual sampling described above but shall require the following additional efforts beyond the typical sampling requirements:

- Rental expense for sampling equipment;
- Three additional samples for analysis by EPA Method 8260B; and
- Five additional hours to procure equipment and to perform sampling.

Task 2: GWETS O&M

Under this task, the Consultant and subconsultant B&C shall perform the following activities for the O&M of the BCVE-1 GWETS and BCV-27 GWETS:

- Performing quarterly inspections of each GWETS. As the schedule allows, the O&M visits shall be performed simultaneously with the well sampling events described in Task 1. Each of these inspections for each GWETS shall consist of: Recording the system totalizer reading; determining the well pumping rate; cleaning the particulate trap; measuring the water depth in the extraction well; assessing the optimal well pumping rate based on the water level data; checking the above-ground piping and carbon vessels for leakage; and testing the compound components (e.g. sump pump, high-level switches, emergency shutoff switch) for proper operation.

- Sampling the extracted groundwater at the two GWETS quarterly, as described in the FSLAP. During each event, the Consultant shall collect water samples from the influent, midpoint, and effluent carbon vessel sample ports and have them analyzed for VOCs by EPA Method 8260B. Services shall also include collecting and analyzing a field duplicate and travel blank for each visit. A total of 32 samples shall be collected and analyzed for the BCVE-1 GWETS and BCV-27 GWETS. The Consultant and subconsultant B&C shall submit the samples under chain-of-custody to a California-accredited analytical laboratory.

- Coordinating four carbon canister changeouts, two for each GWETS. Each canister contains approximately 1,000 pounds of virgin carbon.

- Analyzing flow data and adjusting systems as required. Each GWETS system shall be adjusted manually, as necessary, during Project site visits.

- Maintaining and repairing normal "wear and tear" of degraded parts for each system.

- Three additional Project site visits to address unforeseen malfunctions of the system that require troubleshooting prior to restart of the system. Should significant repairs be required, the City will provide prior written authorization.

Task 3: Data Management and Reporting

This task includes data management and reporting related to the GWETS operations and groundwater monitoring as required by the Consent Decree. The Revised RAP removed the requirement of previous years to submit monthly progress reports. The *Final Amended Remedial Action Plan for Chico Municipal Airport Groundwater Remediation Project of Chico, Chico, California,* dated February 2011, requires submitting semi-annual reports of monitoring activities to the DTSC. Two semi-annual reports shall be prepared during the 2014-2015 operations year. Each draft report shall be consistent in scope and format with those prepared between 2003 and 2013 and shall include a summary of field activities and methods, tabulated groundwater elevation and analytical data, two potentiometric surface maps (one for each hydrogeologic zone) based on the water level monitoring data, and two trichloroethylene (TCE) distribution maps (one for each hydrogeologic zone). In response to DTSC requests in their letter dated October 15, 2013, the addition of trend plots of PCE and water level shall also be included.

Data management shall consist of Level III verification of the laboratory reports for the samples described in Tasks 1 and 2. The verified data shall be downloaded into the Project database, which shall be used to support the semi-annual reports described above.

This task shall also include general Project management to address personnel and task management, subconsultant invoices, vendor invoices, quality assurance and quality control checks, and communications.

Task 4: BCV-27 Treatment System Enhancements and Safety Improvements

Through this task, the Consultant shall address maintenance items associated with the long-term operation of the BCV-27 GWETS. Well BCV-27 was converted to an extraction well with an associated GWETS on July 26, 2007, and was intended to be operated temporarily for approximately one year as a pilot. The system now requires enhancements to maintain proper functionality and safety for long-term operations. Enhancement and safety improvements to the BCV-27 GWETS shall be completed by subconsultant Northstate Environmental (Northstate) and shall include:

- Electrical system repairs including the installation of an external power disconnect and repair of the electrical panel mount;

- Installation of a permanent sump below the trailer-top surface to manage precipitation and to increase the level of protection should a release occur; and

- Installation of a hand rail and stairs to improve safety and access to the GWETS trailer top.

These repairs are necessary to assure the safety of the system operators as well as continued normal conditions for system operation.

Task 5: Double Containment and Safety Enhancement at BCV-27 Well Head

The Consultant shall install a sump along the access road near the BCV-27 well head to improve the containment capabilities in the event of a pipeline break between the well and the treatment system. The system currently requires significant water to full the dual containment line prior to the filling of the above-grade containment basins and triggering of the automatic shutdown. This work shall be performed by subconsultant Northstate and shall include hard plumbing of the new sump to the well heads, eliminating the flexible hose connections currently installed.

Task 6: Extraction Well Efficiency Testing

The Consultant shall complete step drawdown aquifer tests for each of the two GWETS–BCVE-1 and BCV-27–in order to assess current well efficiencies as requested by the DTSC in their letter dated October 15, 2013. Setup for the aquifer tests shall consist of placing pressure transducers within each of the extraction wells and one or two nearby observation wells to assess response to pumping changes during the test. After placement of the pressure transducers, the Consultant shall shut the extraction wells off and monitor the water levels until recovery indicates that water levels are near static conditions.

After reaching static conditions, the Consultant shall record a hand measurement of the water level using an electric well sounder and initiate the step drawdown. This scope of services anticipates that three 30-minute steps shall be conducted at pumping rates of ten gallons per minutes (gpm), 20 gpm, and 27 gpm (anticipated maximum pumping rates). During the step-drawdown tests, the Consultant shall record hand measurements of the water levels to confirm the data recorded by the pressure transducers. The time interval for each step may be increased or decreased based on the Consultant's observation of the drawdown curves. After completion of the third step, the Consultant shall shut off the pump and record the recovery until the water levels have reached 90 percent of the recorded static water level.

After completion of the field program, the Consultant shall prepare a technical memorandum in letter format which shall include a summary of the field methods and the

results of the step-drawdown aquifer tests, including well-efficiency estimates for each of the two extraction wells.

Task 7: Well Survey and Repair

In this task the Consultant shall evaluate 31 monitoring wells at the Project site to identify potential well repair requirements and address comments by the DTSC in their letter dated July 24, 2014, including the following:

- Evaluation of drainage around all the monitoring wells and addressing of identified issues at GW-2, GW-4, BCV-1, BCV-3, BCV-4, and BCV-14. This task assumes the need for well monument drainage repairs at up to five monitoring wells to prevent surface water runoff from impacting the well vaults and the replacement of compression well caps on 31 monitoring wells, with no excavation or concrete cutting required.

- Consolidation of tasks assigned to subconsultant B&C to allow for efficiencies and optimization of labor effort.

- Installation of permanent well identification placards.

- Evaluation of PDB hanger depth and hanger repairs on the 31 monitoring wells.

- Well casing elevation survey.

Well monument repairs are necessary to address the drainage of surface water away from the well vaults. The conditions may have changed since installation and shall be addressed to prevent water from entering the well vaults and potentially draining into the monitoring wells. The Consultant shall evaluate the wells during the inspection associated with the semi-annual groundwater monitoring event described in Task 1 above. Based upon the inspection, the Consultant shall make plans for any necessary repairs. This task anticipates the replacement of up to five vaults to improve drainage.

The Consultant shall install permanent well placards on all 31 monitoring wells to provide such information as the well identification number, total well depth, and screen interval. The intent is to provide a permanent identifier for each well in order to reduce the potential for mislabeling of monitoring wells during inspections.

The PDB hanger evaluation is necessary to ensure that the hanger cables are in good condition and to evaluate proper PDB installation depth within the well. As part of this evaluation, the Consultant shall establish and incorporate protocols into the field sampling forms to assure that the PDBs are installed to appropriate depths and that the quality of collected samples is high.

Subconsultant NorthStar Engineering (NorthStar) shall survey the existing monitoring and production wells to document any elevation changes and to locate PZ-2. Subconsultant

B&C's geologist shall escort NorthStar staff through the restricted areas. NorthStar staff shall locate horizontal locations at the center of each well and provide them such locations as latitude and longitude for GeoTracker purposes and as California State Plan Coordinates Zone 2, NAD 83. In this format, the well-location coordinates will be directly compatible with the City's existing geographic information system (GIS). Subconsultant NorthStar shall obtain the elevations for the wells on the top of each well casing and immediately adjacent to the casing at a point that would a make a suitable reference mark (e.g. the top of the housing, collar, or rim of the well lid). The relative vertical accuracy between well casings shall be plus or minus 0.01 feet. Oversight and access shall be provided by subconsultant B&C during the execution of the subtasks above.

2014-2015 Completion Schedule

Tasks 1 - 3: Well sampling and O&M visits shall occur on the schedule described in the tasks above. After receipt of the analytical laboratory reports for each sampling event, the Consultant shall provide the City with draft and final monitoring reports summarizing the results of each task.

Tasks 4 - 5: Completed by November 30, 2014.

Tasks 6 - 7: Completed by December 31, 2014.

Amendment No. 1 Services

Based on current groundwater levels and system performance at the CMA, it has been determined that the well pumps at both BCVE-1 and BCV-27 need to be lowered to ensure performance, efficiency, and longevity. BCV-1 is currently operating at a flow rate of approximately 16 gpm while breaking suction intermittently on roughly 30-second intervals. The well is currently equipped with a three-inch Grundfos 30 SQE-130 submersible pump rated to operate between flow rates of 24 to 55 gpm. Until typical conditions, the pump operates at approximately 25 gpm. Continued operation of this pump outside of its specified flow range will result in damage and possible failure.

For this reason, it's necessary for the old pump to be removed and replaced with a similar pump to that installed at BCV-27. During previous repairs to BCV-27, a replacement pump was purchased and never installed. This scope of services assumes that the City is still in possession of the pump so purchase of a new pump is not necessary as the replacement should meet system performance expectations similar to BCV-27.

The BCVE-1 pump is currently installed with the pump intake positioned at 107 feet below ground surface (ft bgs) and a screen interval for the well of 70 to 120 ft bgs. The recommended installation depth shall be 117 ft bgs with the replacement pump. The replacement pump is capable of operating at low flow rates without causing damage to the pump. Subconsultant National Exploration, Wells and Pumps (National) shall pull the existing pump, install the new pump, and reset it approximately ten feet deeper within the well.

BCV-27, set at 85 ft bgs and with a screen interval for the well of 85 to 105 ft bgs, is currently operating at a flow rate of approximately 16 gpm and is breaking suction less frequently than BCVE-1. Subconsultant National shall reset the existing pump ten feet deeper within the well, at 95 ft bgs.

Subconsultant B&C shall provide site access and oversight to subconsultant National, perform final inspection and system operation modifications, and provide documentation of the pump replacements and modifications in the Annual Monitoring Report.

Amendment No. 1 Services Completion Schedule

The Consultant shall complete the services described above within two weeks of receipt of the City's Notice to Proceed, contingent upon weather without rain and ground conditions capable of supporting vehicle traffic.

Amendment No. 2

2015-2016 SERVICES:

A. GWETS O&M

Task 1: Well Sampling and Analysis

As specified in the Draft O&M Manual that was prepared in October 2014 in accordance with the Consent Decree, the Consultant and Subconsultant B&C shall gauge the accessible monitoring wells to determine water levels and shall sample them semi-annually for VOCs using PDBs. This scope of services includes collecting Project site-wide groundwater level data and groundwater samples as well as purchasing and installing PDBs for two semi-annual sampling events. This scope of services assumes that each sampling will only require one Project site visit.

The two semi-annual Project site-wide groundwater sampling events shall include the following:

- **Purchasing 35 laboratory-filled PDBs for the two sampling events scheduled to be conducted in September 2015 and March 2016. A total of 70 PBDs shall be purchased for this subtask. The 35 PDBs for each event shall be utilized as follows: 30 shall be used for collecting primary well samples, two for duplicate samples, one PDB water blank, and two for use as replacements in case of breakage.**

- **Measuring the depth to water and total well depth of each of the 30 monitoring wells during each sampling event.**

- **Removing and sampling the PDBs that were previously installed in the 30 monitoring wells.**

- **Submitting the well and quality assurance samples from each sampling event under chain-of-custody to a California-accredited analytical laboratory for analysis of VOCs by EPA Method 8260B.**

Task 2: GWETS Operation and Maintenance

Operation of GWETS at the CMA shall be as described in the Draft O&M Manual. This task shall contain the necessary O&M activities to assure system operations and performance. This scope of services includes the following activities for the operation and maintenance of the BCVE-1 GWETS and BCV-27 GWETS from July 1, 2015, through June 30, 2016:

- **Performing quarterly inspections of each GWETS. As the schedule allows, the O&M visits shall be performed simultaneously with the well sampling events described in Task 1. Each of these inspections for each GWETS shall consist of: Recording the system totalizer reading; determining the well pumping rate; cleaning the particulate trap; measuring the water depth in the extraction well; assessing the optimal well pumping rate based on the water level data; checking the above-ground piping and carbon vessels for leakage; and testing the compound components (e.g. sump pump, high-level switches, emergency shutoff switch) for proper operation.**

- **Sampling the extracted groundwater at the two GWETS quarterly, as described in the O&M Manual. During each event, the Consultant and Subconsultant B&C shall collect water samples from the influent, midpoint, and effluent carbon vessel sample ports and have them analyzed for VOCs by EPA Method 8260B. Services shall also include collecting and analyzing a field duplicate and travel blank for each visit. A total of 32 samples shall be collected and analyzed for the BCVE-1 GWETS and BCV-27 GWETS. The samples shall be submitted under chain-of-custody to a California-accredited analytical laboratory.**

- **Coordinating four carbon canister changeouts, two for each GWETS. Each canister contains approximately 1,000 pounds of virgin carbon. This task covers estimated fees from the carbon supplier for a total of 4,000 pounds of virgin granular activated carbon, including transport and recycling.**

- **Analyzing flow data and adjusting systems as required. Each GWETS system shall be adjusted manually, as necessary, during Project site visits.**

- **Maintaining and repairing normal "wear and tear" of degraded parts for each system.**

- **Three additional Project site visits to address unforeseen malfunctions of the system that require troubleshooting prior to restart of the system. Should significant repairs be required, the City will provide prior written authorization.**

Task 3: Data Management and Reporting

This task includes data management and reporting related to the GWETS operations and groundwater monitoring as required by the Consent Decree. The Revised RAP removed the requirement of previous years to submit monthly progress reports. *The Final Remedial Action Plan for Municipal Airport of Chico, Chico, California*, dated January 2002, requires submitting semi-annual reports of monitoring activities to the DTSC. The Consultant shall prepare two semi-annual reports during the 2015-2016 fiscal year. Each draft report shall be consistent in scope and format with those prepared between 2003 and 2015 and shall include a summary of field activities and methods, tabulated groundwater elevation and analytical data, two potentiometric surface maps (one for each hydrogeologic zone) based on the water level monitoring data, two TCE distribution maps (one for each hydrogeologic zone), and trend plots of perchloroethylene (PCE) and water level.

Data management shall consist of Level III verification of the laboratory reports for the samples described in Tasks 1 and 2. The verified data shall be downloaded into the Project database, which shall be used to support the semi-annual reports described above.

This task shall also include general Project management to address personnel and task management, subconsultant invoices, vendor invoices, quality assurance and quality control checks, and communications.

Task 4: Extraction Well Efficiency Testing

To assess current well deficiencies, as requested by the DTSC in their letter dated October 15, 2013, the Consultant shall complete step-drawdown aquifer tests for each of the two GWETS, BCVE-1 and BCV-27. Set-up for the aquifer tests shall consist of placing pressure transducers within each of the extraction wells and one or two nearby observation wells to assess response to pumping changes during the test. After placement of the pressure transducers, the extraction wells shall be shut off and water levels monitored until recovery indicates that water levels are near static conditions.

After reaching static conditions, the Consultant shall record a hand measurement of water level using an electric well sounder and shall initiate the step-drawdown test. This scope of services anticipates that three 30-minutes steps shall be conducted at pumping rates of ten gpm, 20 gpm, and 27 gpm (anticipated pumping rates). During the step-drawdown tests, hand measurements of water levels shall be recorded to confirm data recorded by the pressure transducers. The time interval for each step may be increased or decreased based on observation of the drawdown curves. After

completion of the third step, the pump shall be shut off and recovery recorded until water levels have reached 90 percent of the recorded static water level.

After completion of the field program, the Consultant shall prepare a technical memorandum in letter format which shall include a summary of the field methods and results of the step-drawdown aquifer tests, including well efficiency estimates for each of the two extraction wells.

GWETS O&M - Completion Schedule

The Consultant shall complete all services by June 30, 2016. The first sampling event shall occur in September 2015 and shall include Project site-wide groundwater monitoring and GWETS performance sampling and maintenance. The second sampling event shall occur in March 2016.

B. O&M MANUAL UPDATE

Background

Operation of the GWETS and updates to the associated O&M Manual are required by the Settlement Agreement and Consent Decree between the California Environmental Protection Agency (EPA)/DTSC and the City (United States District Court, Eastern District of California, Case No. CIV-S-93-604 FCD JFM). Consultant-proposed responses to the April 8, 2015, DTSC comments were provided to the City on June 26, 2015, by Subconsultant B&C under a previous agreement between the City and the Consultant. Approval of the proposed revisions and direction to proceed were provided by the City to the Consultant via e-mail on August 4, 2015.

The Consultant, with the assistance of Subconsultant B&C shall provide professional services as follows:

Task 1: Draft Revisions to O&M Manual

The Consultant shall revise the O&M Manual to include the revisions which were provided to the City in an Excel file entitled *Response to Comments* and shall change the O&M Manual's organization to incorporate DTSC requests. The text shall be updated as shown in the *Response to Comments*, with additional figures and tables provided.

The FSLAP, which was prepared as a stand-alone document in 2003, shall be updated based on DTSC comments and shall be included as an appendix to the O&M Manual.

***Deliverable:* One draft of the updated O&M Manual to the City.**

Task 2: Final Revisions to O&M Manual

Upon receipt of City comments, the Consultant, with the assistance of Subconsultant B&C, shall incorporate them into a final updated O&M Manual for delivery to the DTSC. This scope of services assumes that only one round of edits will be necessary to address City comments.

> ***Deliverables:*** **Three hard copies and electronic copy of the final O&M Manual to both the City and the DTSC.**

O&M Manual Update - Completion Schedule

The Consultant shall complete the services above in compliance with the following schedule:

- **A draft of the revised O&M Manual shall be provided to the City within five weeks of receipt of the City's Notice to Proceed.**
- **The final O&M Manual shall be prepared and transmitted to the DTSC within five working days of receipt of the City's comments on the draft O&M Manual.**

AMENDMENT NO. 2

CITY OF CHICO - PROFESSIONAL SERVICES AGREEMENT

EMKO ENVIRONMENTAL, INC.
Architect/Consultant/Engineer

GROUNDWATER MONITORING AND GROUNDWATER
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AMENDED
EXHIBIT C

COMPENSATION

Compensation for the services shall be in accordance with the following schedule of hourly rates. Total maximum compensation for the services outlined herein shall not exceed **$250,047.00**.

Compensation shall be based upon actual invoices received and shall be paid in accordance with the completion of each task.

2014-2015 SERVICES:

1.	Well Sampling	$ 27,270.00
2.	GWETS O&M	$ 30,792.00
3.	Data Management & Reporting	$ 29,490.00
4.	BCV-27 Treatment System Enhancements & Safety Improvements	$ 11,265.00
5.	Double Containment & Safety Enhancements at BCV-27 Well Head	$ 8,185.00
6.	Extraction Well Efficiency Testing	$ 6,693.00
7.	Well Survey & Repair	$ 18,188.00
	Subtotal:	$ 132,583.00
	Amendment No. 1 Services	$ 6,239.00
	2014-2015 TOTAL:	**$ 138,822.00**

EMKO Environmental, Inc./Brown and Caldwell

2014-2015 Hourly Rate Schedule

Labor

Project Manager	$175.00/Hour
Project Hydrogeologist	$164.03/Hour
Project Quality Manager	$219.46/Hour
Project Geologist	$148.83/Hour
Staff Geologist	$ 84.61/Hour
Field Technician	$ 84.48/Hour
Technical Illustrator	$114.88/Hour
Project Assistant	$ 95.94/Hour
Document Specialist	$ 93.34/Hour
Word Processing	$ 84.00/Hour

Expenses

Subsistence	$200.00/Day
Vehicle	$ 0.56/Mile
APC	$ 8.00/Hour
VOCs - EPA Method 8260B	$ 95.00/Each
Passive Diffusion Bags - Laboratory Filled	$ 36.00/Each
Carbon (Envirosupply 4,000 lbs.)	$2,350.00/Vessel

Amendment No. 2

2015-2016 SERVICES:

A. GWETS O&M

Task 1:	**Well Sampling and Analysis**	**$ 28,175.00**
Task 2:	**GWETS O&M**	**$ 30,265.00**
Task 3:	**Data Management and Reporting**	**$ 29,220.00**
Task 4:	**Extraction Well Efficiency Testing**	**$ 6,651.00**
	Subtotal:	**$ 94,311.00**

B. O&M MANUAL UPDATE

Task 1:	**Draft Revisions to O&M Manual**	**$ 11,105.00**
Task 2:	**Final Revisions to O&M Manual**	**$ 5,809.00**
	Subtotal:	**$ 16,914.00**

2015-2016 TOTAL: $ 111,225.00

***GRAND TOTAL:* $ 250,047.00**

EMKO Environmental, Inc./Brown and Caldwell
2015-2016 Hourly Rate Schedule

Manager	**$226.05/Hour**
Project Manager	**$154.78 – 175.00/Hour**
Staff Geologist	**$ 90.21/Hour**
Field Technician	**$ 73.86 – 87.20/Hour**
Technical Illustrator	**$120.64/Hour**
Project Assistant	**$ 99.30/Hour**
Document Specialist	**$ 80.00/Hour**
Word Processing	**$ 87.04/Hour**