

Advanced Metering with Telemetry for Turnouts in the Stockton East Water District, Phase I

WaterSMART Small-Scale Water Efficiency Grant

Funding Opportunity Announcement No. BOR-DO-21-AS00300



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March 11, 2021

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Technical Proposal and Evaluation Criteria

Date: March 11, 2021

Applicant: Stockton East Water District
Stockton, CA. San Joaquin County

Project Title: Advanced Metering with Telemetry for Turnouts in the Stockton East Water District

Executive Summary

The Stockton East Water District (District) adopted a Water Management Plan (WMP) in 2019 to describe the District's agricultural and urban water management activities in accordance with the U.S. Bureau of Reclamation (USBR or Reclamation) Mid-Pacific Region 2017 Standard Criteria. Preparation of the WMP includes a detailed evaluation of the District's water management operations as they relate to the implementation of all critical and other locally cost-effective best management practices (BMPs). These BMPs include a goal to meter all flow at turnouts and equip each flow meter with remote telemetry for automated data acquisition. This proposal requests funding from the USBR, combined with the District's funds, to deploy electromagnetic flow meters with telemetry on 80 turnouts in the District.

Approximate Length: Two Years

Completion Date: July 1, 2024

Federal Facility: The District is not a federal facility, but does receive Reclamation water. All water delivered by the District is derived from two Reclamation contracts.

Background Data

The District was founded in 1948 and provides surface water for agricultural and urban purposes. The District's boundaries cover approximately 143,300 acres of which 59,712 acres are irrigated. The District serves a population of approximately 358,000 people. In 2018, the District received 116,980 acre-feet of water. The amount of water for urban uses was 42,393 AF, while the other 74,587 AF was used for agricultural purposes. The District has annual allocations from the New Melones Reservoir of about 75,000 to 80,000 AF per year. The main agricultural crops for the area are walnuts, cherries, and grapes. The District has a total of 224 delivery sites. The District has 64 miles of unlined natural channels and about 50 miles of pipeline.

The District is dedicated to its mission to ensure proper management of its groundwater basin and provides supplemental surface water supplies. In 2017, the District became a Groundwater Sustainability Agency (GSA) under the Sustainable Groundwater Management Act (SGMA) and

has joined with 15 other GSAs covering the Eastern San Joaquin Groundwater Basin to form an Eastern San Joaquin Groundwater Authority (GWA) to manage the basin sustainably.

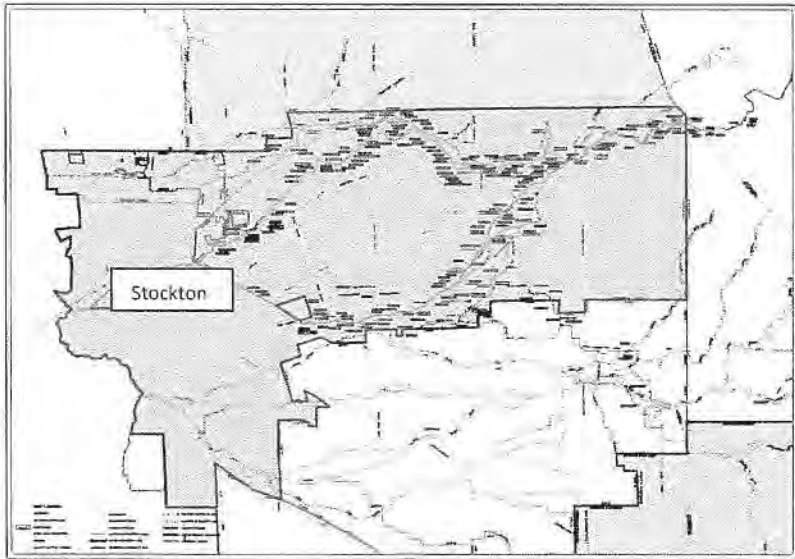
Water for irrigation is essential to support agriculture, which serves as the leading economic activity in San Joaquin County. In 2017, \$2.5 billion in agricultural commodities were produced countywide. The District also supplies wholesale treated drinking water to Stockton area customers that is retailed by the California Water Service Company (Cal Water), the City of Stockton, and San Joaquin County. Key strategies employed by the District to support overall water management objectives are the conjunctive management of surface and groundwater supplies and water conservation.

In addition, the State of California passed SB 88 in June of 2015 which establishes measurement and reporting requirements for a substantial number of diverters. The frequent measurement requirements apply to all who divert 10 AF of water or more per year. Districts that apply more than 1,000 AF/yr must monitor diversions hourly with a required accuracy of at least 10%. This project will make the District compliant with this state requirement.

Project Location

The District is located on the floor of the San Joaquin Valley in San Joaquin County, California with the City of Stockton as its western boundary. The City of Stockton is located at the confluence of the San Joaquin and Calaveras Rivers on the eastern edge of the Sacramento-San Joaquin Delta. Westerly portions of the City of Stockton are slightly above sea level. The District extends 15 miles into the adjoining easterly foothills along the alignment of the Calaveras River. The District is not a Reclamation Facility, but does receive water from two Reclamation contracts.

Figure 1: District Service Area Boundaries in Green



Technical Project Description and Milestones

Stockton East Water District (District) intends to improve surface water extraction measurement within the District by upgrading to electromagnetic flow meters with remote telemetry for water measurement with assistance from the WaterSMART Small-Scale Water Efficiency Grant. The District proposes to implement Phase One of this project over two years to upgrade each of its turnouts to electromagnetic meters with no moving parts.

In 2019 the District conducted a pilot project to evaluate flow meters and telemetry options for their District. The *Badger Orion™ Water Endpoints* telemetry system was proven very effective and was selected as the mode of communications for water meter readings in the District. The Badger Orion telemetry system required a flow meter with Sensus Protocol in order to communicate totalizer readings from the meter register across the Orion Water Endpoint system. The District also favored an electromagnetic flow meter for their Agricultural Water Measurement Program for improved accuracy, less maintenance, and ease of installation. The McCrometer McMag3000 was proven effective in the pilot phase of the project and was selected to complement the Badger Orion Telemetry system for metering and remote telemetry in the District.

In the Pilot Phase, the District was able to install 45 meters with telemetry, leaving approximately 170 turnouts to be metered. This project will install **80** meters with remote telemetry over two years and will represent Phase 1 (of 2) of an innovative program that will complete the installation of meters with remote telemetry on all 224 delivery turnouts in the District.

The District's staff will install all meters and telemetry equipment for this project. However, the District's in-kind contribution to this project will be cash. Consequently, installation is an in-kind contribution that is not reflected in the budget of this proposal.

The proposed project will upgrade old propeller flow meters to new electromagnetic flow meters with no moving parts and featuring remote telemetry capabilities. In some cases, turnouts have not been metered with a totalizing flow meter and deliveries have been estimated with hour meters. Both actions will greatly increase the measurement accuracy of all water deliveries and the frequency at which they are received by the District. The new meters will also reduce the amount of staff time required for meter service and repairs. Meter down-time will be reduced, thereby improving water use reporting and records at the District. The meters planned to be installed will be the McCrometer McMag3000 electromagnetic flow meter. The McMag3000 is a battery-powered saddle-style insertion electromagnetic flow meter. These meters will provide operational advantages to the District, as well as improving data collected for water management. Each meter will be equipped with Sensus™ protocol communications to transmit exact totalizer readings over ORION cellular water endpoints directly to the District for billing and water management purposes.

Orion
Water
Endpoint



McCrometer
McMag3000



Evaluation Criteria

Evaluation Criterion (A) - Project Benefits: *Up to 35 points may be awarded based upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including the significance of the anticipated water management benefits and the public benefits of the project. This criterion prioritizes projects that modernize existing infrastructure in order to address water reliability concerns, including making water available for multiple beneficial uses and resolving water related conflict in the region.*

Describe the expected benefits and outcomes of implementing the proposed project.

What are the benefits to the applicant's water supply delivery system?

This project will secure several benefits within the Stockton East Water District (District). Accuracy in water measurement will improve as a result of this project. Many of the propeller meters installed in the District are out of specification measuring +/- 6% accurate while the McMag3000 is +/- 2% accurate. In addition, 20 turnouts have no meters and hour meters are used which are only within 25-30% of actual readings. Achieving accurate measurement at all turnouts within the District will improve water management and distribution within the District.

All the flow meters installed as a result of this project will have no moving parts. Consequently, they will require less maintenance than propeller flow meters and will maintain their accuracy over time. The meters selected for this project are battery-powered and basic maintenance will be to change the batteries every five years. The design of this meter also features a sensor probe that is essentially "self-cleaning" since the probe is angled away from the water flow direction causing any foreign matter (grass, moss, etc) in the water to be washed off of the sensor and not affect readings.

The telemetry system selected will feature a cloud-based interface for the District to access water delivery data, and eventually allow all water users to access their data. This immediate access to metering information will allow the District to bill more efficiently. This system has no limits on user access and will provide real-time access to deliveries. When real-time water use data is supplied to all water users, there will be an opportunity to improve water management on the district/watershed level as well as on-farm water use efficiency.

Finally, this project will meet and exceed measurement and reporting requirements of SB88, which requires measurement and recording deliveries in hourly intervals.

- *If other benefits are expected explain those as well. Consider the following:
Extent to which the proposed project improves overall water supply reliability*

Since the District delivers water to its customers by volume, the new meters will provide more accurate flow measurements to ensure that the amount delivered is correct. This will improve on-farm water management and distribution throughout the District. Farmers will also be able to

quantify the amount of water being used for on-farm irrigation management purposes.

- *The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)*

Once both phases of this project are complete, the benefits will be conveyed across all 59,712 acres of irrigated farmland. Municipal customers will benefit as well since the District will be able to better manage agricultural deliveries with accurate measurements and real-time telemetry thereby increasing water use efficiency.

- *Extent to which the proposed project will increase collaboration and information sharing among water managers in the region*

These meters also have no moving parts and consequently will not stop due to mechanical wear and tear. New meters will be telemetry-enabled which the district can use for real-time data and sharing water delivery data to customers and other irrigation districts during the irrigation season.

- *Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)*

Real-time data from new meters will improve water distribution and water delivery. The District also will be more drought resilient in the event of a water short period for the region, because of increased water use efficiency.

- *Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.*

New meters also have remote telemetry capability in case farmers want to integrate flow data into their irrigation management program. Having meters at individual turnouts will facilitate the Environmental Quality Incentive Program applications for such practices as soil moisture monitoring, surge valves, and drip systems.

Evaluation Criterion (B)-Planning Efforts Supporting the Project: *Up to 35 points may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant's existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the applicant. This criterion prioritizes projects that are identified through local planning efforts and meet local needs.*

Describe how your project is supported by an existing planning effort.

- *Does the proposed project implement a goal or address a need or problem identified in the existing planning effort?*

Yes, this project is a direct result of the 2019 Stockton East Water District Water Management Plan which was drafted August 2019 and approved on Dec. 19, 2019. The USBR notified the District by email on Nov. 2, 2020 of its approval. Meter Program Upgrades are identified in Section 1.G "Water Measurement, Pricing and Billing". In this section, the Plan identifies 224 turnouts in the District that will need to be metered. Out of the 224 turnouts 170 of them are

active. Through this project, the active turnouts will be upgraded from propeller meters or hour meters to electromagnetic flow meters with remote telemetry.

- *Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.*

If a water year is identified as a dry year based on CVP projections and DWR forecasts, the District asks its customers for voluntary reductions in use. If a second subsequent year is identified as a dry year, the District still requests voluntary reductions, but identifies these reductions as critical. A third subsequent dry year may result in continued voluntary reductions or may require mandatory reductions. The District makes this determination at the beginning of the water year. Voluntary or mandatory reductions in water deliveries will be easier to implement with accurate water measurement and real-time data on water deliveries by installing these magnetic flow meters.

Evaluation Criterion (C)-Project Implementation: *Up to 10 points may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.*

- *Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.*

July 2021: Successful notification of award from USBR.

September 2021: Sign contract with the USBR.

October 2021: Initiate Environmental Compliance with local USBR office.

April-June 2022: District will install ten telemetry aided flow meters.

July-September 2022: District will install ten telemetry aided flow meters.

October-December 2022: District will install ten telemetry aided flow meters.

January-March 2023: District will install final ten telemetry aided flow meters for FY 21-22.

April-June 2023: District will install ten telemetry aided flow meters.

July-September 2023: District will install ten telemetry aided flow meters.

October-December 2023: District will install ten telemetry aided flow meters.

January-March 2024: District will install final ten telemetry aided flow meters for FY 22-23.

June 2024: The District will prepare Final Project Report for USBR.

- *Describe any permits that will be required, along with the process for obtaining such permits.*

No permits will be required for this project.

- *Identify and describe any engineering or design work performed specifically in support of the proposed project.*

The District will complete the necessary design work for the diversion points and pipelines. The District has extensive experience completing similar projects and will complete the necessary designs for meter installation at each delivery point for this project.

- *Describe any new policies or administrative actions required to implement the project.*

No new policies are needed.

- *Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?*

District staff has contacted David White of the Sacramento USBR office. The District expects environmental costs to be minimal since the meters installed will be using the same footprint (or smaller) as currently metered pipelines.

Evaluation Criterion (D)-Nexus to Reclamation: *Up to 10 points may be awarded based on the extent that the proposal demonstrates a nexus between the proposed project and a Reclamation project or activity. Describe the nexus between the proposed project and a Reclamation project or activity, including:*

- *Is the proposed project connected to a Reclamation project or activity? If so, how?*

Yes. In 1983, the District contracted with Reclamation for annual allocations of 75,000 ac-ft from the New Melones Reservoir. In 1983, the District expanded its surface water irrigation capabilities by constructing the 12,000 gallons per minute (GPM) Potter Creek Pump Facility to facilitate diversions from New Melones Reservoir to Potter Creek.

Does the applicant receive Reclamation project water? Is the project on Reclamation project lands or involving Reclamation facilities?

Yes, the District receives Reclamation water from two contracts and equipment will be installed on pipelines owned and managed by the District. The District is not a federal facility, however all water delivered by the District is Reclamation water. All meters purchased for this project will be installed on turnouts within the District that receives and distributes Reclamation water.

- *Is the project in the same basin as a Reclamation project or activity?*

Yes. All installations of equipment will be on pipelines owned and operated by the District and will deliver Reclamation water to its customers.

The District has been actively working on ground water recharge projects since the mid 1990's. Since the mid 1990s, the District has received surface water supplies from the Stanislaus River to

supplement the Calaveras River water supply. The goal of receiving these water supplies is to provide ground water recharge projects to address the over-drafted condition of the Eastern San Joaquin County Ground Water Basin.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

Yes.

- *Will the project benefit any tribe(s)?*

No tribes reside in the project area. Some disadvantaged communities exist in the District.

Environmental and Cultural Resources Compliance

- *Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

The District plans to accomplish meter upgrades or improvements with this project. The meters are in the same locations as previous meters or diversions and any environmental impacts will be minimal. All pipeline work to be done will be at above-ground installations. The District has contacted David White with the Sacramento, CA Reclamation office.

- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*

No. The District is not aware of any threatened or endangered species or critical habitat in the project area.

- *Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States?" If so, please describe and estimate any impacts the proposed project may have.*

No.

- *When was the water delivery system constructed?*

The District was formed in 1948 under the 1931 Water Conservation Act of the State of California. The District was originally organized as the Stockton and East San Joaquin Water Conservation District, an independent political subdivision of the state government. As such, the District was deemed responsible for acquiring a supplemental surface water supply and developing water use practices that will promote conjunctive use and secure a balance between the District's surface and groundwater supplies.

- *Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

Discharge pipes of existing wells will need slight modifications, but no changes will be made to canals, head gates, or flumes as a result of this project.

- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*

No.

- *Are there any known archeological sites in the proposed project area?*

No.

- *Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?*

No.

- *Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

No.

- *Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

No.

Board Resolution

Resolution No. 20-21-17

A RESOLUTION OF THE BOARD OF DIRECTORS OF STOCKTON EAST WATER DISTRICT

AUTHORIZATION TO FILE A GRANT APPLICATION WITH THE DEPARTMENT OF INTERIOR UNITED STATES BUREAU OF RECLAMATION FOR THE WATERSMART: SMALL-SCALE WATER EFFICIENCY PROJECTS FOR METER REPLACEMENT FOR FISCAL YEAR 2021 & EXECUTE ANY REQUIRED DOCUMENTS AND PROVIDE DELEGATION OF AUTHORITY

WHEREAS, the Board of Directors of the Stockton East Water District desires to file a grant application with the Department of the Interior United States Bureau of Reclamation for the WaterSMART: Small-Scale Water Efficiency Projects (Funding No. R21AS00257) for the Meter Replacement Project; and

WHEREAS, the General Manager, Scot A. Moody of the Stockton East Water District is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with Department of the Interior United States Bureau of Reclamation; and

WHEREAS, the General Manager, Scot A. Moody of the Stockton East Water District and his designee of the Stockton East Water District are hereby authorized and delegated to submit reports, request for cost reimbursement, and conduct day-to-day business with Department of the Interior United States Bureau of Reclamation;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Stockton East Water District that the grant application be made to the Department of the Interior United States Bureau of Reclamation to obtain a WaterSMART: Small-Scale Water Efficiency Project Grant (Funding No. R21AS00257), and to enter into an agreement to receive the grant.

PASSED AND ADOPTED at a regular meeting by the Board of Directors of the Stockton East Water District on the 16th day of February 2021 by the following vote of the members thereof:

AYES: Atkins, Cortopassi, McGaughey, McGurk, Panizza, Sanguinetti, Watkins
NAYES: None
ABSENT: None
ABSTAIN: None


Andrew Watkins, President

ATTEST:


Scot A. Moody
Secretary of the Board



Project Budget

Funding Plan

Table 1 - Total Project Cost Table

| Funding Sources | % of Total Project Cost | Total Cost by Source |
|---|-------------------------|----------------------|
| Costs to be reimbursed with the requested federal funding | 37.6% | \$75,000 |
| Costs to be paid by applicant, SEWD | 62.4% | \$124,260 |
| TOTAL PROJECT COST | 100% | \$199,260 |

Table 2 - Budget Proposal

| Budget Item Description | Computation | | Quantity Type (hours/days) | Total Cost |
|-------------------------------------|---|----------|-------------------------------|------------------|
| | \$/unit | Quantity | | |
| Salaries and Wages | | | | |
| | No federal funds to be used for salaries/wages | | | |
| Fringe Benefits | | | | |
| | No fringe benefits provided by this project | | | |
| Travel | | | | |
| | No federal funds to be used for travel to install equipment | | | |
| Equipment | | | | |
| 10" McMag3000 Electromagnetic Meter | \$ 2,321.38 | 80 | ea | \$185,710 |
| Subtotal | | | | \$185,710 |
| subtotal | | | | |
| Orion Endpoints | \$ 125.00 | 80 | | \$10,000 |
| Subtotal | | | | \$10,000 |
| Contractual/Construction | | | | |
| Initial Training and Setup (Orion) | \$ 3,550.00 | 1 | ea | \$3,550 |
| | | | | \$0 |
| Subtotal | | | | \$3,550 |
| Total Direct Costs | | | | \$199,260 |

Funding for this project will be provided by the Stockton East Water District combined with funding from the Small-Scale Water Efficiency WaterSMART grant. No letters of commitment from outside sources will be needed.

Budget Narrative

The estimated project cost is **\$199,260**. Upon delivery of the supplies, the grant funds from USBR will help pay for the equipment purchased from the meter distributors. Quotes for meters have been obtained from distributors and are included in Attachment 1.

In-kind contributions from the District will be **62.4%** of the cash required to purchase meters and accessories. This will amount to approximately **\$124,260** as noted in the Budget Proposal. The District will be responsible for all the labor, heavy equipment, and the materials needed for the alterations at the sites to accommodate the new equipment, but these expenses are not included in the project budget.

In-kind contributions that do not cover our share will be made up by the District Operating fund. The expenditures benefit the project by improving the District's ability to monitor and deliver constant water flows to the farmers and to our own laterals.

District staff will conduct installation of all meters and telemetry equipment related to this project. This represents an in-kind contribution that is not reflected in the preceding budget tables.

Total Costs

The district requests **\$75,000** from the Bureau's Small-scale Water Efficiency Grant. The remaining **\$124,260** will come from the Stockton East District in cash.

Unique Entity Identifier and System for Award

The District is registered on the SYSTEM for Award Management (SAM). The unique entity identifier is **066122854**. The District will maintain an active SAM registration throughout the project.

Attachment 1



Quotation

Quote Number: 159020 Rev 1

Codes: 001 / 032 / 066

Company: STOCKTON EAST WATER
 Address: PO BOX 5157
 City: STOCKTON
 State: CA Postal Code: 95205

Quoted By: Cherish Stack
Date Quoted: Feb-15 2021 **Expires:** Mar-17 2021
Payment Terms: TO BE ADVISED (TBA)
Shipping Terms: FCA SELLER'S PREMISES (FCA)

Following is the information requested

| Line #: | Item Number: | Description: | Qty: | UM: | List Price: | Disc: | Net Price: | Ext. Price: |
|---|--------------|---|------|-----|-------------|-------|------------|--------------|
| 1.000 | G310-X-ITR9 | McMag3000 10" Batt 10" Battery Powered Itron 9 digit Protocol | 80 | EA | \$3,137.00 | 26% | \$2,321.38 | \$185,710.40 |
| *When placing an order we will need the following information: * OD and ID of the pipe * Units of measure you would like the meter to read in | | | | | | | | |

All Prices are in US Dollars (USD) Total List Quoted: **\$250,960.00** Total Net Quoted: **\$185,710.40**

****Above price does not include tax or shipping cost****

This quotation applies to equipment cost and does not include freight, site visits for pipe measurement, cable run evaluations, equipment start-up, end user training or submittals. These value added services will be quoted separately through your local McCrometer Factory Representative.

McCROMETER, INC 'S STANDARD TERMS AND CONDITIONS OF SALE FOR PRODUCTS AND SERVICES
 REV 1.4 04/17

SECTION 1. PRODUCT SALES AND FIELD SERVICES

ARTICLE 1: THE CONTRACT

ANY PREPRINTED TERMS AND/OR CONDITIONS ON BUYER'S PURCHASE ORDER OR INVOICE SHALL NOT APPLY AND MCCROMETER GIVES NOTICE OF REJECTION OF SUCH TERMS AND/OR CONDITIONS IN THEIR ENTIRETY.

This document sets forth the Terms & Conditions of Sale for goods manufactured and/or supplied, and services provided, by McCrometer, Inc. of Hemet, California ("McCrometer") and sold to the original purchaser thereof ("Buyer"). Unless otherwise specifically stated herein, the term "McCrometer" includes only McCrometer, Inc. and none of its affiliates. The Contract shall be comprised of the following terms, together with such terms and conditions set forth in McCrometer's written proposal or quotation (the "Quotation"), including any documents, drawing or specifications incorporated by reference, and any additional or different terms proposed in Buyer's purchase order (the "Purchase Order") that are accepted by McCrometer in writing, which together shall constitute the entire agreement between the parties and supersede all previous communications, representations or agreements, either oral or written, with respect to the subject matter hereof. These terms and conditions are subject to change without notice.

ARTICLE 2: APPLICABLE TERMS AND CONDITIONS:

An offer by McCrometer in its Quotation that does not stipulate an acceptance date is not binding. These Terms & Conditions of Sale are contained directly and/or by reference in McCrometer's quote, order acknowledgment, and invoice documents. The first of the following acts constitutes an acceptance of McCrometer's offer and not a counteroffer, and creates a contract of sale ("Contract") in accordance with these Terms & Conditions. (i) Buyer's issuance of a purchase order document against McCrometer's offer or quote, (ii) acknowledgement of Buyer's order by McCrometer, or (iii) commencement of any performance by McCrometer pursuant to Buyer's order. Provisions contained in Buyer's purchase documents (including electronic commerce interfaces) that materially alter, add to or subtract from the provisions of these Terms & Conditions of Sale are expressly not a part of the Contract. The Contract shall be deemed to have been entered into upon written acknowledgement of the Purchase Order by an officer or authorized representative of the party to be bound. In the event of a conflict or

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Continues on next page..

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