MOBILE AREA WATER & SEWER SYSTEM
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Mobile Area Water and Sewer System
4725 Moffett Road
Mobile, AL 36618-2236

PO Box 180249
Mobile, AL 36618-0249

INVITATION FOR BID
May 8, 2026

INVITATION FOR BID NUMBER	**IFB 26-032**
NAME OF BID	**Purchase of Ammonia Sensors for CC Williams WWTP**
BIDS WILL BE RECEIVED AT	**MAWSS Purchasing Dept. Bid Box** **East Visitor Entrance** **4725 Moffett Road** **Mobile, AL 36618** **If sending bids by UPS/Fed Ex, deliver to the Warehouse:** **1610 Shelton Beach Rd. Ext., Mobile, AL 36618** **with IFB# marked on envelope**
BID OPENING DATE	**May 14, 2026**
BID CLOSING TIME	**10:30 am Central Time**
AWARD WILL BE MADE BY	**Total Cost & Lead Time**
MATERIAL DELIVERED TO	**CC Williams WWTP** **1600 Yeend St.** **Mobile, AL 36603**
ADDITIONAL INFORMATION CONTACT	**Jed Barbour (251) 378-3513 Email:** jbarbour@mawss.com **Michael Ponder (251) 721-2850 Email:** mjponder@mawss.com
APPLICABLE SDP POLICY	**None**

Sealed bids must be in the Purchasing Department no later than the time specified in order to be considered. Submissions received after the deadline will not be considered. Envelopes must bear the name of the supplier, company address and the words "**IFB 26-032 Ammonia Sensors Purchase**" or "**IFB 26-032 NO QUOTE**." Facsimile or email bids will not be accepted.

All bids must be submitted on the attached forms, or your bid will be disqualified. Bidder shall furnish all the information required by the solicitation. The bidder's name must be typed or printed on the bid sheet and signed by the bidder or appropriate authorized executive officer of the bidder's company. Bidders must initial any changes or erasures. Bidders should retain a copy of bids for their records.

Bidders shall acknowledge receipt of all addenda to this solicitation by signing and returning each addendum or by identifying the addendum number and the date on the bid form. Failure to acknowledge receipt of any addendum by a bidder will result in rejection of the bid if MAWSS determines that the addendum contains information that materially changes the requirements.

All bids shall be quoted FOB Destination, freight prepaid with no additional charges. Unless otherwise specified in the bid, all prices will be on a firm-fixed price basis and are not subject to adjustments based on costs incurred. MAWSS reserves the right to reject any or all bids submitted, to waive any informality in any bid or in the bid process, or to terminate the bid process at any time, if deemed by MAWSS to be in MAWSS's best interest.

A Purchase Order and this "Invitation for Bid" with "Specifications," "Conditions," "Bid Form," signed by the successful bidder's authorized representative, and all attached drawings and other documents furnished by MAWSS to the bidders with the Invitation for Bid in order to illustrate the contract requirements, will constitute a contract for the goods and/or services to be purchased.

Joyce Sawyer, Buyer II
Board of Water and Sewer Commisioners

IFB 26-032 AMMONIA SENSORS PURCHASE
CONDITIONS

The Board of Water and Sewer Commissioners of the City of Mobile will accept bids for the **Ammonia Sensors Purchase** in our Purchasing Department Bid Box located at the East Visitor Entrance at 4725 Moffett Road, Mobile, AL. 36618 **no later than 10:30 a.m**. local time on **May 14, 2026**. Bids will be opened immediately after bid closing time in the Operations Center Board room located at the East Visitor Entrance. Award will be by **Total Cost & Lead Time**. The bidder offers and agrees, if this bid is accepted, to furnish the items as defined in the specifications for the unit price set opposite each item. Pricing shall be FOB Mobile, Alabama. All items shall be delivered to **CC Williams WWTP located at 1600 Yeend St., Mobile, AL 36603,** or to the job site as needed. The bidder shall state the expected length of delivery time on the Bid Form.

Bidder understands and agrees that manufacturer and part numbers are provided for descriptive purposes only. Items of equal or better quality will be considered but must be approved by MAWSS in writing. Upon delivery, if the quality, durability or performance of any product represented as equal or better is determined by MAWSS to be unsatisfactory, MAWSS will require a suitable substitute or will require that the originally specified item be delivered, at the unit price originally offered by bidder. No substitution for items to be provided pursuant to this contract shall be permitted during the contract period without the express written consent of MAWSS. All items provided shall be for commercial use and for the purposes reflected in the contract documents.

No bid on closed out or discontinued item(s) will be accepted. Item(s) that have a determinable shelf life must be disclosed at the time of bid submittal. Bidder understands that his/her bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.

Bidder understands and agrees that quantities will be purchased by MAWSS on an “as needed” basis to replenish inventory. MAWSS shall not be committed to the purchase of a pre-established minimum quantity for any one item.

A bidder may not modify its bid after bid opening. Errors in the extension of unit prices stated in a bid or in multiplication, division, addition or subtraction in a bid may be corrected by the MAWSS Purchasing Buyer prior to award. In such cases, unit prices shall not be changed.

It is the responsibility of the bidder to determine prior to the bid opening whether any amendment, additions, deletions or changes of any type have been made to this Invitation for Bid, Conditions, Specifications, Bid Form or any other bid documents. Bid documents and any amendments made to this bid will be posted on our website at www.mawss.com.

Invoicing Requirements: MAWSS requires additional information for all work performed and services provided. On the vendor’s invoice for payment should be a detailed listing of work performed, services provided, dates completed, locations involved, and any other pertinent information needed to verify the work and/or services were completed in accordance to the bid specs. This additional information can be supplied in the form of detailed invoices, work orders, checklists or any other documents used to track the work performed or services provided but details must be included on the actual invoice. A copy of the invoice and these additional details must be sent to the “ADDITIONAL INFORMATION CONTACT” found on Page 1 of the bid documents and a copy emailed to Accounts Payable at AcctsPayable@mawss.com.

END OF CONDITIONS

IFB 26-032 AMMONIA SENSORS PURCHASE
SPECIFICATIONS

WASTEWATER ANALYSIS INSTRUMENT CONTROLLER & PROBE SPECIFICATIONS

GENERAL

The purpose of this bid is to purchase:

1. Three (3) instrument controllers capable of transmitting sensor data from multiple water quality parameters
2. Three (3) sensors for continuous monitoring of ammonium nitrogen and nitrate nitrogen in wastewater treatment.
3. Two (2) high output air compressors capable of cleaning sensor equipment.
4. Items necessary for mounting/installation of the instrumentation.

Note: Potential bidders are encouraged to make a site visit to fully understand the requirements of a successful implementation.

PART 1 - INSTRUMENT CONTROLLER GENERAL

1. A dual channel water quality sensor transmitter with a local user interface AND the ability to access sensor data remotely through a browser enabled device.
2. Scope:
    A. Provide labor, material, equipment, related services, and supervision to install and operate the controller to drawings and manufacturer's specifications.
3. Alternates:
    A. Parameter-specific controllers that do not allow changing parameter configurations in the field are unacceptable.
    B. Controllers or transmitters without the possibility to access data through an internet browser enabled device and cannot present real-time instrument diagnostics are not acceptable.

System Descriptions

1. Design requirements
    A. Includes capability to actively monitor all internal components and present diagnostics on the overall health of connected sensors and time to next required maintenance, reducing user risk.
        i. Ability to see and be notified of upcoming and past due maintenance.
    B. Includes capability to provide real-time alerts when sensor issues occur with built in workflows with step-by-step guidance to perform calibration and maintenance tasks, reducing user risk.
    C. Includes ability for cellular network coverage OR Wi-Fi connection OR a LAN connection.

D. Supports advanced communication protocols, including Profibus DPV1, Modbus TCP/IP, Profinet IO, and Ethernet IP.
E. Provides capability to view all connected plant measurements, alerts, calibration, and maintenance status in real time on any internet browser capable device.
    i. Connects with overall data system for real time graphics of both online and laboratory data for a full picture of functional plant operational capability.
F. Controller designed to be used in indoor or outdoor locations.

2. Performance Requirements
    A. The controller accepts digital sensors in any combination to measure the following water quality parameters:
        i. pH/ORP
        ii. Conductivity
        iii. Dissolved Oxygen
        iv. UV Organics
        v. Sludge level
        vi. Ammonium
        vii. Ammonia
        viii. Nitrate
        ix. Combination of Ammonium and Nitrate
        x. Total suspended solids
        xi. Orthophosphate
        xii. Turbidity
        xiii. Free/total Chlorine
        xiv. Combination Chlorine HOCl /Chlorine+Acid / Total free chlorine
        xv. Ozone in water
        xvi. Chlorine Dioxide
        xvii. Oil in Water
        xviii. Nitrite

3. Environmental Requirements
    A. Operational Criteria
        i. Operating Temperature: –20 to 45 °C (–4 to 113 °F)
        ii. Storage temperature: –20 to 70 °C (–4 to 158 °F)
        iii. Relative humidity: 0 to 95%, non-condensing
        iv. Altitude ≤3000m (6,562 ft.)

4. Certifications
    A. EMC: CE approved (with all sensor types). Listed for use in general locations to UL and CSA safety standards by ETL (with all sensor types).
    B. Safety: General Purpose UL/CSA 61010-1 with cETLus safety mark
    C. Possibility for Hazardous Locations Use: Class 1 Div 2

5. Warranty
    A. Warranted for 1 year from date of shipment from manufacturer defects.

6. Unscheduled Maintenance
    A. Clean controller face
    B. Calibrate mA output signals

PART 2 - INSTRUMENT CONTROLLER PRODUCTS

1. Equipment shall be:
    A. Hach Company, Loveland, Colorado and Hach Lange GmbH, Berlin, Germany
        i. SC4500 Controller
    B. Or Approved Equivalent

2. Manufactured Unit
    A. Microprocessor-based sensor controller.
    B. Change digital sensors connected to the controller by unplugging and plugging in sensors as necessary.
    C. Modules for connection of Analogue sensors for pH, ORP or Conductivity
    D. The controller is available with the following power requirements:
        i. AC powered: 100–240 VAC ±10%, 50/60 Hz; 1 A (28 W sensor load)
        ii. DC powered: 24 VDC +15% –20%; 2.5 A (20 W sensor load)
    E. The controller uses a menu-driven operation system.
    F. The controller is equipped with a real-time clock.
    G. The controller is equipped with two security levels.
    H. The controller shall have worded operation menus in 24 languages.
    I. The controller is equipped with a USB reader for data download and controller software upload.
    J. High voltage:
        i. Two relays (SPDT);
        ii. Wire gauge: 0.75 to 1.5 mm2 (18 to 16 AWG)
        iii. AC controller:
            Maximum switching voltage: 100–240 VAC
            Maximum switching current: 5 A Resistive/1 A Pilot Duty
            Maximum switching power: 1200 VA Resistive/360 VA Pilot
        iv. Duty DC controller
            Maximum switching voltage: 30 VAC or 42 VDC
            Maximum switching current: 4 A Resistive/1 A Pilot Duty
            Maximum switching power: 125 W Resistive/28 W Pilot Duty
    K. Five analogs 0/4-20 mA outputs are provided with a maximum impedance of 500 ohms.
        i. The controller can be equipped with five 4-20 mA outputs with a maximum impedance of 500 ohms.

ii. The following can be programmed:
    1. Alarms:
        a. High and Low alarm point
        b. High and Low alarm point deadband
        c. On and Off delay
    2. Controls
        a. Linear
        b. PID

L. The controller can be equipped with the following forms of communication:
    i. Profibus DP
    ii. Modbus TCP/IP
    iii. Profinet (ODVA certified)
    iv. Ethernet IP (ODVA certified)

M. The controller can host one of the compatible RTC modules

N. All user settings of the controller are retained for 10 years in flash memory.

O. The controller is equipped with a system check for:
    i. Motherboard temperature
    ii. Field auto-test

3. Equipment
    A. Materials
        i. Housing: polycarbonate, aluminum (powder coated), and stainless-steel Metal enclosure with a corrosion-resistant finish
        ii. Rating: UL50E type 4X, IEC/EN 60529–IP 66, NEMA 250 type 4X
    B. Conduit openings: 0.5 in. NPT

PART 3 - INSTRUMENT PROBE GENERAL

1. Sensor for continuous monitoring of ammonium nitrogen and nitrate nitrogen in one probe in wastewater treatment.

2. Includes the capability to remotely monitor sensors on any browser-enabled device and present diagnostics on the overall health of the measurements (on Predictive Diagnostics-enabled sensors), as well as upcoming and required maintenance - reducing user risk and downtime. It includes the capability to connect to a laboratory spectrophotometer to correct process measurements based on lab samples, without having to remove the process sensor from the water.

3. Measurement Procedures
    A. The method of measuring ammonium nitrogen and nitrate nitrogen is by ion-selective electrodes (ISE).
        i. A differential pH electrode is used as the reference.
        ii. A potassium ISE is used to correct the ammonium value for the presence of potassium ion.
        iii. A chloride ISE is used to correct the nitrate value for the presence of chloride ion.

4. Alternates
    A. Other sensors that do not use a differential pH reference electrode are not acceptable.
    B. Other sensors that do not use both potassium ISE to correct the ammonium value and chloride ISE to correct the nitrate value are not acceptable.
    C. Other instruments that do not have predictive diagnostic capabilities are unacceptable

5. System Description
    A. Performance Requirements
        i. Measurement range ammonium: 0.2 to 1000 mg/L NH4-N
        ii. Measurement range nitrate: 0.2 to 1000 mg/L NO3-N
        iii. Accuracy: 5% of measured value ±0.2 mg/L (with standard solution)
        iv. Detection limit: 0.2 mg/L
        v. Response time: less than 3 minutes (T90)
        vi. When connected to a multi-parameter digital controller the overall status of the instrument performance is displayed as a percentage value via a measurement indicator
        vii. When connected to a multi-parameter digital controller the overall time remaining until maintenance tasks are due is displayed in days

6. Certifications
    A. CE approved

7. Environmental Requirements
    A. Operational Criteria
    B. Operating temperature -20 to 45 °C (-4 to 114 °F)
    C. Sample temperature: 2 to 40 °C (35 to 104 °F)
    D. Sample pH: 5 to 9
    E. Sensor immersion depth: 0.3 to 3.0 meters (1 to 10 feet) maximum
    F. Sample pressure: 0.3 bar (4.4 psi) maximum

8. Warranty
    A. The product shall include a one-year warranty from date of shipment covering diagnosis, parts, freight, and labor; excluding wear parts.

9. Maintenance Service
    A. Scheduled maintenance:
        i. 1. Monthly: visual inspection, if necessary, clean with brush and clear water
        ii. Bi-annually: replace calibrated sensor cartridge

PART 4 - INSTRUMENT PROBE PRODUCTS

1. Manufacturer
    A. Hach Company, Loveland, CO
        i. 1. AN-ISE sc Ammonium and Nitrate Combination Sensor
    B. Or Approved Equivalent

2. Manufactured Unit
    A. The AN-ISE sc Ammonium and Nitrate Combination Sensor consists of a digital sensor with integrated, replaceable sensor cartridge.
    B. The integrated sensor cartridge includes ammonium ISE, nitrate ISE, differential pH electrode, potassium ISE, chloride ISE, and temperature sensor.

3. Equipment
    A. The sensor is designed to connect to a universal digital controller.
    B. The sensor cartridge is factory calibrated with all electrodes individually calibrated and also calibrated to each other.
    C. The sensor does not require sample conditioning.
    D. The sensor can perform one- or two-point inline matrix corrections to adapt it to a wastewater matrix.
    E. The sensor is corrosion resistant and fully immersible.

4. Components
    A. Standard equipment:
        i. Probe:
            1. stainless steel (1.4571)
            2. Ends: ASA + PC
    B. Dimensions: 12.6 x 3.3 inches (320 mm x 84.5 mm)
    C. Weight: 5.3 lbs. (2.4 kg)

5. Accessories
    A. Digital controller
    B. Cables and power cord
    C. Mounting kit
        i. Rail Mount
        ii. Chain Mount
        iii. Rim Mount
    D. Cleaning unit
        i. High Output Air Blast Cleaning Compressor (See Part 5)

Part 5 - High Output Air Blast Cleaning Compressor

1. High Output Air Blast (HOAB). Compressed air will be provided to make it possible to clean a probe. A probe specific cleaning head needs to be used to fit with the specific probe involved. Probe specific cleaning head is not a part of the HOAB.

2. Measurement Procedures
    A. Compressed air generated from a compressor will be let to a cleaning device (cleaning head). The design of the probe specific cleaning head makes sure that the surface of the measuring part of the probe remains clean.

3. Alternates
    A. Manual cleaning of the measuring part of the probe is not acceptable

4. System Description
    A. Performance Requirements
        i. Air pressure (at compressor outlet): 115VAC 3.1 bar (45psi) / 230VAC 2.8 bar (40 psi)
        ii. Air flow (at compressor outlet): 115VAC 2.1 m3/hour / 230VAC 1.8m3/hour

5. Certifications
    A. UL, CSA, cETLus, CE

6. Environmental Requirements
    A. Operational Criteria
        i. Operating temperature -20 to 50 °C (-4 to 122 °F) 95% rel. humidity non-considering

7. Warranty
    A. The product shall include a one-year warranty from date of shipment covering diagnosis, parts, freight, and labor; excluding wear parts.

8. Maintenance Service
    A. Scheduled maintenance:
        i. Weekly / Monthly: visual inspection, if necessary, cleaning of the air intake, depending on location.

Part 6 - High Output Air Blast Cleaning Compressor Products

1. Manufacturer
    A. Hach Company, Loveland, CO
        i. HOAB, High Output Air Blast system
    B. Approved Equivalent

2. Manufactured Unit
    A. The HOAB consists of a non-metallic cabinet (enclosure) including a compressor, which needs to be installed along the probe equipped with a cleaning head at the basin and approx. 9m (27ft) air hose.

3. Equipment
    A. The HOAB is a stand-alone system (AC powered), including a controller relay fuse (T, 0.25 A, 250 V).
    B. The enclosure is made of Polycarbonate and is suitable for outdoor installation.
    C. The air hose is suitable for outdoor installation.

4. Components
    A. Standard equipment:
        i. Control unit
            1. Polycarbonate
        ii. Air hose
            1. Tygon style, braided
        iii. Mounting accessories
            1. Stainless Steel
        iv. Manual

5. Dimensions:
    A. Control unit: (W x H x D) 351.6 x 186.9 x 409.7 mm (13.84 x 7.36 x 16.13 inches)
    B. Weight:
        i. Control unit: 11.2 kg/24.7 lbs

6. Accessories
    A. Probe specific cleaning head (1 each)

PART 7 Execution

1. Submittals
    A. Manufacturer's literature, specifications, and engineering data including dimensions, equipment size and weight, and performance data.
    B. Operations and maintenance manuals to include complete installation, operation, and maintenance data including installation and wiring diagrams.
    C. Itemized and lump sum pricing for all necessary components for a functional system to measure and monitor ammonia and nitrate nitrogen in wastewater, including controllers, sensors, probes, installation and mounting hardware, etc.

2. Delivery
    A. Delivery of all equipment and accessories to:
        i. Jed Barbour – Chief Treatment Plant Operator
        Clifton C. Williams Wastewater Treatment Plant
        1600 Yeend St., Mobile, AL 36603

END OF SPECIFICATIONS

IFB 26-032 AMMONIA SENSORS PURCHASE
BID SHEET

Controller - Cost **$** _____

Probe / Sensors - Cost **$** _____

High-Output Compressor - Cost **$** _____

Installation/Mounting Hardware - Cost **$** _____

Accessory 1 - Cost **$** _____

Accessory 2 - Cost **$** _____

Accessory 3 - Cost **$** _____

Grand Total** **$** _____

**Total cost must include all charges/fees, including but not limited to, labor, equipment, materials, maintenance, freight, etc.

Manufacturer/Model _____
*(if different from what is requested in the specifications)

Delivery (ARO): _____
(After receipt of order)

Company Name_____ Payment Terms_____

Address_____

City, State, Zip_____

Submitted By_____ Title_____
Please Print

Phone_____ Email Address_____
Please Print

The signer declares under penalty of perjury that she/he is authorized to sign this document and bind the company or organization to all terms and conditions of this agreement.

Signature_____ Date _____