



October 21, 2024

Bid 24-12-16

Subject: Invitation to Bid

Prospective Bidders

Sealed bids for furnishing items and services on *Total Organic Carbon (TOC) Analyzer* will be received in the Purchasing Office, located at 3600 First Avenue North, Birmingham, Alabama until *10:00 a.m., Tuesday, November 5, 2024*, at which time and place they will be publicly opened and read.

“Specifications and Conditions” and “Bid Forms” are attached, and all bids shall be F.O.B. destination, freight prepaid, and at no charge. One copy of bid should be returned, and the bidder should retain a copy.

The right is reserved to reject any or all bids submitted, to waive any informalities and technicalities, and to award to the bidder it is deemed will best and most economically serve the “Board’s” interests. The Board reserves the right to cancel this bid within thirty (30) days with written notice. The Board reserves the right to cancel the contract due to non-satisfactory performance or if the vendor is found to violate the terms and conditions or does not correct any violations of specifications within two days after given notice. The Board reserves the right to RE-BID.

Any bids that are mailed must be sent to 3600 First Avenue North, Birmingham, Alabama 35222, directed to the attention of the Interim Purchasing Manager, and marked in the lower left-hand corner of the envelope as follows: “Bid on *Total Organic Carbon (TOC) Analyzer*” due 10:00 a.m., *Tuesday, November 5, 2024*.”

If you are responding to multiple solicitations, please submit each bid response in its own sealed envelope to avoid potential shipping delays due to weather or other unforeseen circumstances. We encourage all bidders to mail their submissions well in advance. Please note that any bids received after the bid opening deadline will be automatically rejected.

Yours truly,

LyTonja Levert
Interim Purchasing Manager

SPECIFICATIONS AND CONDITIONS FOR TOTAL ORGANIC CARBON ANALYZER

The "Specifications and Conditions" is for a fully automated, high-performance walk-away automation Total Organic Carbon (TOC) Analyzer system with intuitive software control with a personal computer (PC), Autosampler and nitrogen generator are listed below. The Nitrogen generator must produce 99.99995% gas & must be a bench top model. The nitrogen generator must be able to remove hydrocarbons, ozone, & water.

Equipment must be equal to or better than what is described in the "Specifications & Conditions". The following minimum specifications must be met to qualify for consideration for the bid. Any variation or exception to these minimum specifications must be explained in detail and item-by-item.

OVERVIEW OF TOC SYSTEM:

- 1) The TOC instrument should be fully integrated and configured to be controlled by a single computer system running on Windows 2000 or XP operating system with a full version of Microsoft Office Suite. All components shall be manufactured by the same vendor and under the same service agreement of a single vendor
- 2) The TOC analyzer must be able to perform both drinking water and raw water analysis and comply with USEPA Methods; EPA 415.1- 415.3, 9060A, Standard Method 5310C, ASTM D4779 and D4839
- 3) Analyzer and autosampler will be controlled solely by system software on a computer.
- 4) Software must be able to parse information directly to a LIMS system, specifically, to ATL Sample Master Pro and the system must be easily upgradeable to adapt with newer advancements in technology.
- 5) The PC must include Interface through Windows® 7 Professional or greater, a computer, with a 21" flat panel monitor and printer.
- 6) The system software must have a Setup menu that allows selection of user, diagnostic screen, readying instrument to run samples, and monitoring gas flow rates through NDIR and UV chamber and IC chamber.
- 7) The software must be 21 CFR Part 11 tool for your laboratory compliance.
- 8) The software must have a "Run" menu that allows selection of preprogrammed or user defined methods, entering samples identification, entering number of replicates, monitoring real time sample curves. Run priority samples via schedule interrupt.
- 9) Real-time and Historical graphical display of NDIR detector data
- 10) The system software must have the capability to generate multi-point calibration, blank, and calibration verification values. These values should be retained in memory.
- 11) The system software must have results menus for post run analysis and storage of samples results with capability to review sample curve, standard deviations, RSDs, date and time of analysis, sample identification, and comments.
- 12) The system software must allow for automatic condition changes and re-analysis of out-of-range samples.
- 13) Auto-Check Standards from Single Stock Standards or User Calibration Standards. Pass / Fail Criteria Decision Control upon Failure (Halt, Re-Calibrate, or Continue).
- 14) The system software must be able to automatically detect exclusion of anomalous values and re-calculation of repeat analyses. Recalculation of data, outlier deletions, and precision performance criteria controls.
- 15) Auto-System Suitability with Performance Measurements
 - Auto-dilution of samples/standards
- 16) • Auto-Leak Check
 - Automatic shutdown/standby
 - Self-cleaning sample handling process that cleans reactor chambers on every repetition
 - Intelligent dilution
- 17) Reports exportable XML, CSV and HTML format
- 18) The analyzer must use a combination of sodium persulfate in an aqueous solution and UV irradiation to oxidize organic compounds. If other reagents are used in treating high chloride samples, the reagents must not interfere with the oxidation process.
- 19) Detection of carbon dioxide resulting from oxidation of inorganic carbon (IC) and organic carbon (OC) will be accomplished by a non-dispersive Infrared (NDIR) detector and non-dispersive Infrared (NDIR) detector must be housed in a thermally protective cabinet. Cabinet will be purged with CO₂ free gas to protect the NDIR from environmental CO₂.

- 20) The analyzer must be able to detect Total Carbon (TC) and Inorganic Carbon (IC) directly.
- 21) The analyzer will be able to detect non-purgeable Organic Carbon (NPOC) by first removing IC in a dedicated IC chamber, then measuring NPOC by oxidizing organic compounds in a dedicated UV chamber.
- 22) The analyzer must be able to detect Total Organic Carbon (TOC) by directly measuring TC and IC then automatically subtracting IC from and TC.
- 23) The analyzer will use either nitrogen or CO₂ free air (99.99998 or better) as a carrier gas.
- 24) Sample volumes must be software-controlled without sample loops, and variable from 0.5 - 20 ml.

- 25) The Analyzer should use a single multi-port valve to control all samples and reagent handling.
- 26) Samples, acid, and oxidant should be transported by one automated variable liquid syringe.
- 27) The range of analysis with or without using an autosampler must be 2 ppb to 10,000 ppm.
- 28) The Autosampler should have the ability to hold at a minimum (144) 20ml, (84) 50ml, (70) 40ml, or (24) 125-ml sample vessels using interchangeable sample racks.
- 29) Autosampler should have a built-in needle rinsing station that can use rinse water or sample to eliminate cross contamination.
- 30) Autosampler should have septum piercing capability and sampling from open vials.

NITROGEN GENERATOR:

- 1) The generator must provide 99.99% pure nitrogen cylinder or 99.9% pure nitrogen generator.
- 2) The generator must remove both hydrocarbon, ozone and have a CO₂ concentration of < 1 ppm.
- 3) The generator should have a minimum and maximum range for pressure that is 60 psig-125 psig or better.

SERVICE, INSTALLATION AND TRAINING:

- 1) The total cost of the system must include installation of all equipment and on-site training, including checkout and verification of performance.
- 2) The system must include 1-day customer training and familiarization of all equipment and operating software. Must also include 3-day training (software/troubleshooting) at vendor training location.
- 3) A training center must be available to allow users to have access for further training, if necessary.
- 4) The vendor should have a field service office within four hours of Birmingham and be able to provide on-site service within 24 hours.
- 5) All service and repair of all instrumentation must be on-site or must be available from within driving distance no greater than 8 hours to allow for quick, emergency response.
- 6) Software phone support must be available during warranty at no cost users.
- 7) System (Hardware and Software) must have a three-year warranty on parts, labor, and travel, & must offer an extended warranty after the manufacturer warranty expires.

October 21, 2024

BID 24-12-16

BID FORM

LyTonja Levert, Interim Purchasing Manager
The Water Works and Sewer Board of the City of Birmingham
P.O. Box 830110
3600 First Avenue North
Birmingham, Alabama 35283-0110

Submitted below is our firm bid on items listed, which is in accordance with your "Invitation to Bid" and "Specifications and Conditions" for the Total Organic Carbon Analyzer dated **November 5, 2024**. Prices quoted are F.O.B. destination. The undersigned has read and understands said "Invitation to Bid" and "Specifications and Conditions" and expressly agrees to be bound by the terms thereof.

<u>QTY</u>	<u>DESCRIPTION</u>	<u>TOTAL COST</u>
1	Total Organic Carbon (TOC) Analyzer system as described in the "Specifications & Conditions" of Bid 24-12-16 .	\$ _____

Is your system *equal to or better* than the system described in the "Specifications & Conditions"?
Y _____ N _____

SUBTOTAL \$ _____

PAYMENT TERMS/DISCOUNT _____

GRAND TOTAL \$ _____

NOTE: Bids must be submitted in a sealed envelope, directed to the attention of the Purchasing Manager, and marked in the lower left-hand corner as follows: "Bid for Total Organic Carbon Analyzer due at 10:00 a.m., Tuesday, November 5, 2024."

DATE _____

COMPANY _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

TELEPHONE _____

WEBSITE _____

DELIVERY DATE ARO _____

(Print Name)

(Signed)

(Title)