



City of Columbus
Mayor Michael B. Coleman

Department of Public Utilities
Tatyana Arsh, P.E. Director

MEMORANDUM

TO: Paul Rakosky
Director of Finance and Management

FROM: Tatyana Arsh, P.E.
Director of Public Utilities

DATE: November 2, 2011

RE: BID RECOMMENDATION – ATOMIC ABSORPTION SPECTROPHOTOMETER
BID PROPOSAL #SA004154 (REVISED)

The Purchasing Office opened formal bids on October 27, 2011 for the purchase of an atomic absorption spectrophotometer for the Division of Power and Water (Water). Two (2) bids were received.

Agilent Technologies was the apparent low bid of \$51,615.20. They, however, are non-responsive to the following specifications 3.4.1.1, 3.4.1.1.1, 3.4.1.2, 3.4.2.3.1, 3.4.3.1, and 3.4.3.2 of our bid requirements (see attached exceptions provided by Agilent Technologies).

The second lowest bid was PerkinElmer Health Sciences, Inc., at \$55,266.00 and they meet our specifications.

Therefore, the Division of Power and Water (Water) is recommending the award go to PerkinElmer Health Sciences, Inc. as the lowest responsive, responsible, and best bidder to meet our specifications. This award is for one (1) atomic absorption spectrophotometer. The total award will be for \$55,266.00.

If additional information is needed please contact Matt Steele at 614-645-7691.

Utilities Complex	910 Dublin Road	Columbus, Ohio 43215
Director's Office	614/645-6141	FAX: 614/645-8019 TDD: 614/645-6454
Power and Water Division	614/645-7020	FAX: 614/645-8177 TDD: 614/645-7188
Operational Support Division	614/645-1508	
Fairwood Complex	1250 Fairwood Avenue	Columbus, Ohio 43206
Sewerage and Drainage Division	614/645-7175	FAX: 614/645-3801 TDD: 614/645-6338



16-All other required bid documents.

City of Columbus listed specifications can be met or exceeded by submitted Agilent offering, but for the following specifications to which Agilent takes exception:

- Agilent Graphite Tubes are heated longitudinally, not transversely heated, as listed in specification for PE unit. Please refer to enclosed Agilent Information Note, titled, AA Instruments GTA-120 Graphite Tube Atomizer included in this package to describe exactly how Agilent heats their graphite tubes. This method of heating still gives Agilent better detection limits, best precision, and increases lifetime of graphite tubes by 40 % over all other vendors graphite tube life times. Since Graphite Tubes are biggest consumable cost with any vendors instrument, the Agilent unit will save City of Columbus significant amount of money. It should also be noted that besides increasing lifetime of our Agilent graphite furnace tubes, our pricing(\$438/pk of 10) for our partitioned graphite tubes(P/N 6310001200), which we recommend for more applications than any other tube type, will compare very favorably with recommended PE graphite tube costs.
- Agilent's Zeeman magnetic field is applied transversely not longitudinally as listed in specification for PE unit. Agilent is inventor of the Zeeman Background Technique for Graphite Furnace and has manufactured units that have utilized both transversely and longitudinally applied magnetic fields, but has consolidated on the transverse design. There are no documented advantages to either design, but Agilent has found this this design allows for bigger graphite tube to be used, which means more sample can be deposited into tube, thus giving rise to lower detection limits, which is the real advantage of GFAAS (e.g. sensitivity).
- Specifications call for automatic alignment of Flame AAS. Agilent Flame AAS does require operator manual alignment, but takes less than 30 seconds and does not need to be redone unless burner head is moved. This specification has no impact on performance and only requires infrequent 30 seconds of operator's time.
- Agilent's furnace opens/closes manually, not pneumatically as specified, but this operation takes only seconds. This device does not result any real operator time



savings, nor performance advantages and is something that can break down and cause issues with continued operation of the furnace AAS.

- Specification call for Littrow Monochromator with 1800 lined diffraction grating. Agilent uses a Czerny-Turner Monochromator with 1200 lined diffraction grating. Spectral resolution is not real issue with either flame nor furnace AAS and our optical system will equal or better resolution performance of quoted PE optical system. No impact in performance in substitution of this specification for equivalent. Please refer to Agilent "AA 140/240/280 Series AA Specifications" for details on our quoted optical system.
- Specification calls for solid state detector, but Agilent uses well proven Photo Multiplier Tubes(PMT) detectors. Agilent uses solid state detectors in all other metal analysis instrumentation (ICP/OES, MP/AES, ICP/MS), but has found no solid state detector that is equal to documented/well proven sensitivity of PMT detector. Also, life times of PMT are long and well documented, while solid state detectors have not been documented to last as long as PMTs and are generally more expensive than PMTs. Agilent will again guarantee that there will be not loss in performance using our AAS products that include PMT detectors. Please refer to enclosed documents titled "AA Flame Performance Figures" and "AA Furnace Performance Figures" to review Agilent detection limits which are biggest consideration in how well these instruments can detect elements of interest.
- Agilent AAS software currently operates on MS XP platform which comes loaded on included PC vs the specification requirement of Windows 7. Agilent is currently working and will shortly release the software that utilizes Windows 7. Agilent will make this upgrade software available to City of Columbus for not charge, as soon as it becomes available.

Please allow me to comment on those specifications to which we exceed:

1. Our AAS 240FS/240Z/Ultra Duo System which has 8 total Lamp Positions(4 Flame and 4 Zeeman Furnace) allows the operator to operate both separate spectrophometers from one(1) controlling PC simultaneously. This means that our instrument can generate both flame and furnace results at the same time saving City of Columbus money and time. This also means that if problem exists with either furnace or flame spectrophometer, operator still can generate results from other unit, unlike the single referenced single PE spectrophometer. Please refer to enclosed Agilent Brochure titled, "Agilent AA Spectrometers" to obtain good summary of key advantages of submitted Agilent AAS DUO offering to City of Columbus.