



City of Columbus  
Mayor Michael B. Coleman

# Department of Public Utilities

Tatyana Arsh, P.E. Director

## MEMORANDUM

TO: Paul R. Rakosky  
Director of Finance and Management

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

DATE: October 22, 2010

RE: BID RECOMMENDATION-GAS CHROMATOGRAPH/MASS SPECTROMETER  
SA003713

The Purchasing Office opened formal bids on October 14, 2010 for the purchase of a Gas Chromatograph/Mass Spectrometer for the Division of Power and Water. Three (3) bids were received.

PerkinElmer Health Sciences, Inc. was the apparent low bid of \$90,147.40. They, however, are non-responsive in the following areas.

### Mass Spec Detector:

- We requested a Triple-Axis Detector, which reduces background noise making it more sensitive and reducing wear on the instrument.
- PE bid a Photomultiplier, which multiplies all ions (even the background noise) making it less sensitive to find the target analytes and increasing wear on the instrument.

### Diffusion Pump:

- We requested a Diffusion Pump, which has no moving parts so there is less maintenance and a longer service life.
- PE bid a Turbo Pump, which has moving parts that wear out and reduces the service life.

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

MS capability to create 100 SIM ion groups with up to 60 ions per group:

- PE bid 32 SIM ion groups with 32 ions. The 32 SIM ion groups would be overwhelmed by environmental samples because there are more than 32 different compounds in the sample. Missing pesticide compounds would produce false negative pesticide results and could cause a regulatory compliance issue.

Automated SIM setup and configuration:

- The PE mass spec does not have automated SIM setup and their software does not automatically configure the number of SIM groups, SIM cycles across the peak, and the ions added to each group. Manual setup and configuration introduces human errors.

Retention Time-Locking module for analyzing target compounds in complex matrices:

- PE does not have the RTL analyzer, software, or library. Retention times are critical for pesticide identification. Retention time-locking (RTL) leads to more accurate peak identification in complex environmental mixtures. Because both mass spec data and retention time are applied, this provides more complete information for identifying and confirming the presence of a compound. RTL provides the ability to differentiate between closely eluting peaks for accurate results, and provide fast accurate identification of unknowns through retention time library searching.

Microsoft Office Software (including Word, Excel, Outlook and PowerPoint):

- Not included in the PE bid.

Ion Gauge Controller:

- The system we requested has two gauges, an internal thermocouple for rough vacuum and the ion gage controller which controls final pressure. The ion gage controller is a good tool to troubleshoot problems with the system.
- PE only has a single gage for rough vacuum.

Gas Chromatograph 20-ramp oven programming:

- PE only has 3 ramps. Our current pesticide methods require more than three oven ramps to avoid co-eluting compounds.

GC Multimode Inlet, N2 or Air Cooling Capabilities must include use as a split/splitless, temperature programming and large volume injection:

- PE did not bid this item. This is our primary GC inlet which uses a large sample volume, split/splitless, temperature programmed injection to provide separation of different compounds as they enter the GC column. Without this item pesticide analysis becomes more difficult and less sensitive as the compounds co-elute.

Micro Electron Capture Detector with EPC:

- PE did not bid this item, they bid a single electron-capture detector which is not as sensitive.

Nitrogen-Phosphorus Detector - NPD (Blos Bead):

- We requested an NPD with Blos Bead because it is more durable, reduces maintenance, and reduces operating expenses.
- PE did not bid this item. They bid a different NPD, which wears out quickly requiring additional maintenance and frequent replacement.

The second lowest bid was Agilent Technologies, Inc., at \$101,002.40 and they meet our specifications.

Therefore, I am recommending award go to Agilent Technologies, Inc. as the lowest responsive, responsible, and best bidder to meet our specifications. This award is for a Gas Chromatograph/Mass Spectrometer. The total award will be for \$101,002.40.

If additional information is needed please contact Matt K. Steele at 614-645-3928.

pc: Rick Westerfield  
Craig Charleston  
Matt Steele