

**DESCRIPTION OF INTENDED
SINGLE SOURCE PURCHASE
(PUR 7776)**

AGENCY: Department of Environmental Protection

TITLE: Single Source with Agilent Technologies

Short description of the commodity or service desired: Hardware and software upgrade to existing GC/MS/MS 7000C Agilent Technologies instruments.

CONTACT

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Internal tracking number, if any: 2019SS07

Date posted: 02/19/2019 Last day for receipt of information: 02/28/2019

This description of commodities or contractual services intended for purchase from a single source is posted in accordance with Sections 120.57(3) and 287.057(3), Florida Statutes, and will remain posted for a period of at least 7 business days.

Commodity or Contractual Service Required (commodity or United National Standard Products and Services Code (UNSPSC), manufacturer, model, and description, as appropriate):

73171606: Test equipment upgrade services

Quantity or Term (as appropriate):

One time purchase

Requestor (division, bureau, office, individual, as appropriate):

Division of Environmental Assessment & Restoration, Chemistry Program

Performance and/or Design Requirements (e.g. intended use, function or application, compatibility, requirements; reference to policy, rule, statute or other act of the Legislature, etc., as appropriate):

Hardware and software upgrades for both of DEP's existing Agilent GC/MS/MS Mass Spectrometer 7000 model instruments to convert them to 7010 equivalent models. The Agilent 7010 GC/MS/MS Agilent offers an upgrade package that converts the 7000C instrument to a 7010B equivalent. The upgrade improves the instrument's sensitivity by a factor of, at least, 10 times as well as extends technical support/service lifetime. It also comes with 3-month warranty for the entire system, thus lowering the cost of the current service contract.

Intended Single Source:

Agilent Technologies

Estimated Dollar Amount:

\$74,130.42

Justification for single source acquisition (what is necessary and unique about the product, service or source; steps taken to confirm unavailability of competition, as appropriate):

The 7010B Triple Quadrupole Mass Spectrometer instrument is manufactured by Agilent Technologies. This hardware and software 7010B MS/MS system upgrade will convert the DEPs 7000C systems to 7010B equivalent systems. Agilent is the sole source for proprietary factory recommended upgrades of its equipment. This upgrade will provide unique performance features that will be beneficial to the State of FL DEP for the following reasons:

Sensitivity - Sensitivity allows for sufficiently low detection limits in samples with complex matrices. Detection limits will be decreased, allowing for sample dilution, reducing maintenance caused by matrix build up.

- EI MRM IDL: 0.5 femtograms or less of OFN statistically derived at 99% confidence level from the area precision of eight sequential splitless injections of 1 uL 2 fg/uL OFN standards. MS/MS transition of m/z 272->222 100 msec dwell time.
- PCI MRM S/N : >2,500:1 RMS was produced by injection of 1uL or 5 pg/uL of BZP for MS/MS transition of m/z 183->105 (CH4).

Dedicated Optimized Ionization Sources - EI source design of solid inert source material can be heated to 350 degrees. Source design includes both repeller and extraction lens design. Dedicated chemical ionization (CI) source for positive and negative chemical ionization optimized for multiple reagent gas, including 'clean' ammonia gas

- High temperature source stays clean longer and does not require the frequent ion volume replacement found in some other designs. This ensures uninterrupted operation over long periods even with complex matrices.
- Combination of repeller and extraction lens increases efficiency of ion transfer into Q1 resulting in superior sensitivity or reduced sample size to maintain a clean system longer.

Quadrupole Mass Spectrometer Design - Dual gold coated monolithic quartz hyperbolic quadrupole mass filters with operating temperature up to 200°C

- Eliminate contamination by high boiling matrix molecules (non-ionized neutrals) that are commonly found in complex samples

MRM Speed - Transition speed: 800 MRMs/sec with a minimum dwell time of 0.5 msec with no change in chromatographic peak area. Quantitative accuracy is maintained as the sequence of transitions is changed

- More analytes can be monitored in the same period of time ensuring that no analytes are missed
- Reduced run times – greater throughput

Hexapole Collision Cell with He Quenching Gas - Process to reduce transmission of metastable helium (the primary source of neutral noise). Uses a supplemental flow of helium "quench gas" to reduce transmission of metastable helium through the collision cell. High pressure cell operation for efficient collisional cooling and focusing of the ion beam without use of expensive gases such as argon or neon.

- High sensitivity with wide mass bandwidth eliminates the need to “tune on your compound” for optimum sensitivity

Triple Off Axis Detector - Includes triply off-axis HED-EM (high energy dynode-electron multiplier) for additional neutral noise reduction and optimized apertures for increase signal intensity. “Gain Normalization” corrects tune file for detector aging to allow repeatable long-term method sensitivity

- Collect more ions and reduce neutral noise for increased sensitivity
- Gain Normalization provides repeatable long-term stability as detector ages

Factory Installed Union – Supports midcolumn backflush. This provides the analyst control of the analytical column flow while the precolumn is backflushed during the run.

- Provides more consistent retention times and spectra throughout sample sequence
- Reduces run times
- Reduces contamination which results in more frequent cleaning and reduced column life

Retention Time Locking – Compound retention times are reproducible within thousandths of a minute

- Compound retention times are unchanged in data analysis, which simplifies identification, quantitation, and the use of databases of compound retention times
- Complex multiple reaction monitoring tables need not be changed when columns are trimmed or replaced, saving operator time
- Allows the operator the ability to precisely reproduce a literature method

Gain Normalized Tuning – The 7010 automatically adjusts voltages to maintain the same signal as the detector ages

- Better consistency of compound response after source cleaning or column maintenance
- Better agreement between different instruments
- Better diagnostics and troubleshooting

LTM Rapid Heating/Cooling Column System – Option LTM is a GC replacement door with built in electronics and space for up to 4 rapid heated columns for GC/GC. In conjunction with capillary flow technology (CFT) can be used for multiple heart cutting

- Improved detection in complex matrices
- Reduced maintenance of column and MS
- Faster analysis time, up to 10X faster than conventional GC

Hinged Triple Quad Analyzer Design – The analyzer is hinged at both ends of the collision cell to enable easy access of the source or detector.

- Quick access to the source for cleaning saving operator time

Approved By (names & titles, as appropriate, e.g., requestor, requestor management, information systems, budget, purchasing):

Marek Topolski,, Chemist Adminstrator

Liang Lin, Environmental Consultant
Colin Wright, Program Administrator
Trenetta L. Brinkley-Wilson, GOC II
David Whiting, Deputy Director
Sabina Flanagan, Purchasing Specialist
Bruce Roberts, MFMP Administrator

Prospective vendors are requested to provide information regarding their ability to supply the commodities or contractual services described. If it is determined in writing by the agency, after reviewing any information received from prospective vendors, that the commodities or contractual services are available only from a single source, the agency shall: provide notice of its intended decision to enter a single-source purchase contract in the manner specified in Section 120.57(3), F.S.