

Customer Spotlight: Water & Wastewater City of Garland

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Company Profile:

For 25 years, the City of Garland has owned, operated and supported two state-of-the-art advanced biological wastewater treatment facilities, as well as an industrial pretreatment program. In addition to wastewater treatment, the utility also provides technical services, which includes Texas Commission on Environmental Quality (TCEQ) recognized laboratory and industrial pre-treatment operations.

The mission of the Garland Wastewater Treatment Utility is to:

- Provide safe, right-priced, high quality wastewater treatment and quality control services and products for all City of Garland retail customers, industrial customers and regional wholesale customers.
- Provide well-maintained wastewater treatment and quality control infrastructure and facilities to extend service life and reliability.
- Perform wastewater treatment and quality control services in a socially, ethically and environmentally responsible manner to protect the health, well-being, and quality of life of our customers and the public-at-large living, working and playing along Texas waterways.

State-certified operators continuously run both wastewater facilities 24 hours a day, 7 days a week, 365 days a year. Wastewater is collected for each facility in two separate drainage basins, the Duck Creek Basin and the Rowlett Creek Basin. Wastewater is then received and treated at two separate facilities, the Rowlett Creek and Duck Creek Wastewater Treatment Centers. On average, both plants treat an annual average flow of close to 40 million gallons per day (0.074 m³/d) of effluent wastewater.

More than 45,000 samples are analyzed annually in the Garland Wastewater Treatment Utility's state-of-the-art-equipped laboratory, operated by a staff consisting of highly-trained chemists and biologists who are fully conversant with prescribed regulatory agency procedures, along with a wide range of analytical capabilities such as:

- Organic analyses for Pesticides, PCB's, Volatiles and Semivolatiles by Gas Chromatography (GC) and Gas Chromatography Mass Spectroscopy (GC / MS)
- Automated wet chemistry by Technicon Autoanalyzer for Ammonia, Nitrate, Nitrite, TKN, Phosphorus, Cyanide
- Metals analyses by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS)
- Classical wet chemistry - BOD, COD, TSS, TDS, VSS, and Microtox

Their Challenge:

Real-time data access is critical for managing operations. There was a strong need for the Garland Wastewater Treatment Utility to streamline data management from multiple sites in the field, and from the numerous laboratory instruments, in order to make data accessible in a single, consolidated database that all team members with permissions could access.

Operating in a regulated industry creates many challenges. Checks and controls exist at all levels, but particularly the test level to make sure the proper controls are included, that SOPs (Standard Operating Procedures) are followed, and that the laboratory maintains a commitment to quality assurance, quality control and state certification.

The laboratory team sought an affordable, commercial, off the shelf, validated Laboratory Information System (LIMS) that was tailored to water/wastewater laboratories, and included excellent live technical support, free upgrades, and on-going training. The new LIMS needed to support barcoding, be user-friendly, have solid QA/QC functionality, and would facilitate regulatory compliance.

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Customer Spotlight: City of Garland *(continued)*

Other LIMS requirements by the Garland Wastewater Treatment Utility included functions and features such as:

- Sample Tracking (Chain of Custody report)
- Data Entry
- Sample Scheduling
- QA/QC
- Electronic Data Transfer
- Chemical Inventory
- Maintenance
- Project Management services
- A dedicated Account Manager
- Pre-installation configuration assistance
- Instrument interfacing
- Integrated NPDES DMR (National Pollution Discharge Elimination System Discharge Monitoring Report) Package
- Integration with the LINKO pretreatment software

Our Solution:



After reviewing competitive proposals from several vendors, the City of Garland team selected Sample Master® from ISO-certified Accelerated Technology Laboratories (ATL), a software development firm with nearly two decades of LIMS and water and wastewater laboratory automation expertise. Sample Master® has provided the City with a central SQL database which allows access by personnel with permissions from multiple locations, rather than being spread out on multiple computers at different locations which had been inhibiting efficiency.

Sample Tracking, Data Entry, Scheduling, viewing Sample Status, and the ability to rapidly retrieve any data in the database with a Master Query allows the management team better quality control over laboratory operations. Many mundane tasks have been automated, such as exporting data to LINKO (eliminating dual entry) and generating state reports such as the DMR, all resulting in faster turnaround times.

In order to eliminate transcription errors, ATL support staff interfaced the following laboratory instruments with Sample Master®: Agilent GC/MS 5973 MSD, GC/MS 5975MSD, GC 6890N, ICP/MS 7500, and Smartchem discrete analyzer. The Electronic Data Transfer module automatically uploads data from instruments. A single file or an entire directory can be scanned. Users can also import multiple instrument runs and select which data is placed into Sample Master®. This has resulted in recognizable time savings and increased accuracy, along with interconnectivity.

Additionally, the validation and approval process with QC is now extremely efficient with Sample Master®. The QA/QC module allows users to graph results and create control charts for data that has been entered, and users can configure tests to include QC, matrix spikes, blanks, duplicates, surrogates, matrix spike duplicator, and many others.

Control limits may be entered manually or calculated from historical limits. Users can easily select the data to plot using criteria such as test, sample number, analyst, etc.

Implementing Sample Master® has allowed the City of Garland laboratory to leverage resources, maximize productivity, enhance data quality and facilitate organizational communication.

“ Sample Master® is user friendly,
and the instrument parsers are amazing!

Wes Kucera

Technical Services Director, City of Garland ”

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