**Facilities, Equipment and Other Resources Template**

**Facilities**

Working with Tennessee Tech’s Center for the Management, Utilization and Protection of Water Resources (www.tntech.edu/watercenter), Dr. X will have access to an analytical lab (see lab section of Water Center website) with 4,300 square feet including:

* A microbiological area for bacterial research and analysis
* Two programmable temperature and humidity walk-in chambers
* A cold room for sample storage
* A 1,090 sq. ft. wet chemistry and project area
* 1,610 sq. ft. of space for laboratory instrumentation
* An organic laboratory for sample preparation, distillation, and extraction
* 308 sq. ft. dishwashing area
* An isolated chemical storage room
* A high-throughput sequencing facility equipped with an Illumina MiSeq and NextSeq systems
* A Dynamic Light Scattering system

The lab is equipped according to procedures accepted by the Environmental Protection Agency (EPA), Tennessee Department of Health, Tennessee Department of Environment and Conservation, American Society for Testing and Materials (ASTM), and the U.S. Geological Survey. The laboratory has been certified by the State of Tennessee and the EPA for analysis of selected drinking water parameters. The laboratory also has a Leica confocal microscope for microbial analysis and facilities for water and wastewater pilot plant studies. Other facilities are available through the Departments of Chemistry, Biology, Chemical Engineering, Civil and Environmental Engineering, the Cooperative Fishery Research Unit, and the College of Agriculture and Human Ecology.

The lab also uses Sample Master LIMS software for sample log-in, sample tracking, sample data entry and quality control (QC) data entry. The system is also used to produce analytical reports, invoices and QA/QC summaries and control charts.

**Major Equipment**

* The Water Center’s microbiology lab houses a centrifuge, environmental control chamber, Labconco biosafety cabinet, Labconco freeze dry, Roche Lightcycler 480-II, Savant speedvac concentrator, and UVP gel-doc imager. The lab also maintains a walk-in cold storage unit.
* The wet chemistry lab within the Water Center contains an IDEXX QuantiTray Sealer and a Perkin Elmer Lambda II Spectrometer.
* The receiving and organic lab contains an Agilent HPLC, Dionex HPIC, Hach AQ1, and Shimatsu TOC-V.
* The metals analysis lab houses an Ethos microwave digestion system, fume hood and digestion block, Perkin Elmer GFAA, and a Perkin Elmer ICP\_OES.
* A student research lab provides an Agilent GC and a Hach DR6000.
* The organic prep lab offers a Dionex accelerated solvent extractor, refrigerated centrifuge, and a Revco -80 degree Celsius freezer.
* The organic analysis lab houses an Agilent GC, a Hewlett-Packard GC-MS, and a Parr Bomb calorimeter.

**Other Resources**

The Water Center provides administrative staff support through an office manager, financial associate and administrative associate, who can order supplies, etc. in relation to the lab. The lab is also staffed by a lab manager, academic support associate and a lab support technician. These staff provide many years of expertise in water quality analysis and administrative support.