Nothing Compares
NORTH CAROLINA

Select Committee on North Carolina River Quality

February 21, 2018

NC DEQ

NC DEQ

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER SCIENCES SECTION			
UNIT	**TYPE**	**PURPOSE**	**#**
Organic Chemistry Branch	GC/MS	Base/Neutral/Acid compounds (Semivolatiles) / Waters of the State	1
Organic Chemistry Branch	GC/MS	Base/Neutral/Acid compounds (Semivolatiles) / Waters of the State	1
Organic Chemistry Branch	GC/MS	Purgeable Organics (Volatiles) / Waters of the State	1
Organic Chemistry Branch	GC/MS	Purgeable Organics (Volatiles) / Dedicated to 1,4-Dioxane testing / Waters of the State	1
		Total	4

DEPARTMENT OF ENVIRONMENTAL QUALITY - DIVISION OF AIR QUALITY-AMBIENT MONITORING SECTION			
UNIT	**TYPE**	**PURPOSE**	**#**
Laboratory Analysis Branch	GC/MS	Volatile organic compounds (EPA Compendium Method TO-15)	1
Laboratory Analysis Branch	HPLC/UV-Vis	Aldehyde and Ketones (EPA Compendium Method TO-11a)	1
Laboratory Analysis Branch	GC-FID	Light hydrocarbons (PAMs compounds)	1
		Total	3

NC DEPARTMENT OF AGRICULTURE

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DEPARTMENT OF AGRICULTURE - Food and Drug Division			
UNIT	**TYPE**	**PURPOSE**	**#**
Food and Drug	LC/MS	Analysis of pesticides in human & animal foods for FDPD Food &Feed Programs	1
Food and Drug	LC/MS	Analysis of pesticides in human & animal foods for FDPD Food and Feed Programs	1
Food and Drug	LC/MS	Analysis of pesticides in human & animal foods for FDPD Food and Feed Programs	1
Food and Drug	GC/MS	Analysis of pesticides in human & animal foods for FDPD Food and Feed Programs	3
Food and Drug	GC/MS	Analysis of pesticides in soil, water, swabs or vegetation for SPC&PD IR Program.	2
Food and Drug	GC/MS	Analysis of pesticides in human and animal foods for FDPD Food and Feed Programs	1
Food and Drug	GC/MS	Analysis of pesticides in soil, water, swabs or vegetation for SPC&PD IR Program.	1
Food and Drug	ICP/MS	Quantification of heavy metals in human food for FDPD Food Program.	1
		Total	11

NC DHHS STATE LAB OF PUBLIC HEALTH

NC DHHS

DHHS State Lab of Public Health			
UNIT	**TYPE**	**PURPOSE**	**#**
Hemachemistry	ICP/MS	Human samples (children) to detect levels of lead in blood	2
Newborn Screening	MS/MS	Human samples (newborn screening of metabolic diseases)	6
Chemical Terrorism	ICP/MS	Human samples to detect agents of chemical terrorism	2
Environmental Sciences	ICP/MS	Environmental Testing (Trace Metals)	2
Environmental Sciences	GC/MS	Environmental Testing (semi-volatiles)	2
Environmental Sciences	GC/MS	Environmental Testing (volatiles) (2 are non-functioning)	4
Environmental Sciences	LC/MS/MS QTOF	Environmental Testing (EPA grant funded for terrorism response)	1
		Total	19

DHHS Office of the Chief Medical Examiner			
UNIT	**TYPE**	**PURPOSE**	**#**
Toxicology	GC/MS	Human toxicology samples to detect pharmaceutical and chemical agents of death	3
Toxicology	LC/MS/MS	Human toxicology samples to detect pharmaceutical and chemical agents of death	5
Toxicology	LC/Orbitrap	Human toxicology samples to detect pharmaceutical and chemical agents of death	1
		Total	9

EPA

- One existing mass spectrometer was purchased through a federal grant, which authorized a grant to NC for the purpose of identification of possible terrorist chemical threats or warfare agents

- DEQ in conversations with EPA on authority to use the mass spec for fluorinated compounds

- Once the machine is used for the purpose of fluorinated compounds, it could impede its availability for identification of a chemical threat or warfare agent

FURTHER REQUIREMENTS

- EPA Approval by the EPA Grants Management Office under 2 CFR 200.313(c)
- Qualified professionals to staff the equipment and analyze results
- Undetermined need for software updates

USE OF UNC SYSTEM EQUIPMENT

- Use of UNC system equipment and staff will include subjecting those UNC resources to ligation proceedings, and also oversight by EPA under our Quality Assurance and Quality Control requirements in using data for regulatory purposes.

- Staff would need to be available to testify in court, provide depositions and documentation for legal actions that involve data generated at each lab. Turnover in students and faculty could impede enforcement actions.

- EPA oversight includes QA/QC for lab procedures and review of data generated.

- The traceability of consumables and all maintenance activities need to be well-documented on any equipment used for litigation reporting.

- These systems will need to undergo evaluation from a method detection limit standpoint, and initial demonstrations of competency will need to be performed for all personnel. They will also have to undergo periodic proficiency testing, which is reported to EPA.

Questions?

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