APPENDIX A

CHEMICAL LABORATORY TECHNICIAN
(Time-Based)

D.O.T.CODE 022.261.010
O*NET CODE 19-4031.00

This training outline is the current standard for Work Processes and Related Instruction. Changes in technology, regulations, and safety/health issues may result in the need for additional on-the-job or classroom learning.

WORK PROCESSES

	Approximate Hours
A. Safe Work Practices	300

1. Developing awareness of work environment and potential physical plant hazards.
2. Developing awareness of environmental hazards, such as: solids, liquids, gases.
3. Implementing emergency response protocol(s) if necessary.
4. Properly donning and doffing appropriate Personal Protective Equipment (PPE).
5. Developing awareness and demonstrating compliance with/ addressing safety and health concerns particular to industry, e.g., nuclear, biological, food, pharmaceutical.
6. Handling and storing equipment safely.

B. Sample Collection	2800

1. Collecting liquids, using appropriate containers/collection methods.
2. Collecting solids, using appropriate containers/collection methods.
3. Collecting gases, using appropriate containers/collection methods.
4. Using hand tools to aid in sample collection, including

but not limited to: wrenches, screwdrivers, cordless drills.

5. Maintaining and replacing fittings used when drawing samples.

C. Sample Analysis and Laboratory Work 4000

1. Using various types of laboratory equipment, such as:
   a. potentiometer
   b. millipore filter
   c. chromatograph
   d. spectroscope
   e. particle analyzer
   f. dew point analyzer
   g. proportional counters
   h. liquid scintillation counter
   i. test kits
   j. Marinelli beakers (if applicable).

2. Analyzing all types of samples, obtaining data such as:
   a. total organic carbon
   b. alpha/beta radiation (if applicable)
   c. dew point
   d. conductivity
   e. potentiometry (pH analysis)
   f. anion/cation
   g. atmospheric air sample composition
   h. tritium
   i. gamma radiation (if applicable)
   j. particulate concentration in breathing air and instrument air (if applicable)
   k. soluble/insoluble isotopes
   l. helium leak detection (if applicable)
   m. pollutant presence/concentration in discharge (if applicable)
   n. turbidity
   o. post-UV sampling (if applicable).

3. Preparing and standardizing analytical solutions and samples (if applicable).

D. Data Recording, Reporting, Cleanup and Housekeeping 500

1. Collecting data from various pieces of testing equipment.
2. Comparing data to standards.
3. Reporting results per employer protocol(s).

4. Preparing chain of custody documents for samples taken for analysis (if applicable).
5. Using a Laboratory Information Management System (LIMS).
6. Identifying need for maintenance and calibration and performing when required.
7. Cleaning up work area.
8. Maintaining inventory and ordering spare parts (if applicable).

E .Other (optional*) 400

1. Participating in: Quality Analysis/Quality Control Program, Chemical Control Program, and Environmental Monitoring Program.
2. Training in ethics and compliance.

Total Hours 8000

If optional work process is not selected, the hours should be devoted to further mastery of the other required work processes.

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Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to http://www.labor.state.ny.us/workerprotection/publicwork/PDFs/Article8FAQS.pdf

APPENDIX B
CHEMISTRY LABORATORY TECHNICIAN
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RELATED INSTRUCTION

Safety/Health/Environment
General Workplace Safety
Occupational Safety and Health Administration (OSHA) required trainings (if applicable)
Nuclear Regulatory Commission (NRC) training(s) (if applicable)
First Aid & CPR (minimum 6.5 hours every 3 years)
Right-to-Know/Material Safety Data Sheets (MSDS)
Proper use of all trade-related Personal Protective Equipment (PPE)
Bloodborne Pathogens

Workplace Skills
Fundamentals of Technical Drawings
Procedures particular to laboratory environment
Corrective Action Program (if applicable)
Fundamentals of Mathematics, including Weights, Measures, Ratios, Mixtures
Algebra-Applying formulas and equations

Trade Science
Physics
Principles of Electricity
Material Science
Basic Atomic and Nuclear Physics (if applicable)
Heat Transfer and Fluid Flow
Core Protection (if applicable)
Basic Chemistry
Water Treatment and Purification (if applicable)
Corrosion

Trade Practice
Laboratory Equipment
Basic Chemical Analysis
Potentiometry
Radiation & Radioactive Decay (if applicable)
Spectrophotometry
Liquid Scintillation
Gamma Spectroscopy
Sampling Techniques

Counting Statistics
Statistical Process Control
Chromatography
Dew Point Analyzer
Particle Analyzer

Other Chemical Industry Sector-Specific Courses As Needed

A Minimum of 144 Hours of Related Instruction is Required for Each Apprentice for Each Year.