



Environmental Systems: Basic and Advanced Water Resources

Youth Apprenticeship

ENVIRONMENTAL SYSTEMS: BASIC AND ADVANCED WATER RESOURCES

Environmental systems youth apprentices learn core skills needed by the water industry to promote protection, improvement, and sustainability of water resources.

Length of Apprenticeship: One or two years

REQUIRED COMPETENCIES

Youth apprentices must become proficient in both general employability and occupation-specific competencies. All of these, and examples of how each can be demonstrated, are found in the following pages. **Year 1:** Below are 11 occupational competencies must be learned for this occupation. **Year 2:** Below are 12 occupational competencies must be learned. Employers may substitute out one of the competencies per year and should write in the competency they are adding. Youth apprentices must be evaluated on these competencies at least two times each year of their apprenticeship.

YEAR 1 Competencies	YEAR 2 Competencies
<ol style="list-style-type: none">1. Interpret work order2. Create work order3. Monitor operating conditions, meters, pumps, and gauges4. Collect operational data5. Use operations software (such as SCADA, PLC, DBs)6. Perform basic facility maintenance7. Collect samples8. Measure weight9. Measure volume10. Perform calculations and conversions11. Conduct basic lab tests	<ol style="list-style-type: none">1. Assist with report submissions2. Prepare chemicals3. Add chemicals to systems4. Perform start-up and shut down of pumps and equipment5. Inspect operational equipment6. Troubleshoot basic operations7. Analyze lab results8. Maintain schedules, communication, and documentation9. Perform preventive maintenance (PM)10. Calibrate equipment11. Troubleshoot and repair equipment12. Analyze operational data for productivity/trends

REGISTERED APPRENTICESHIP BRIDGING OPPORTUNITIES

The following Registered Apprenticeship is available in this area:

- Steamfitter
- Sheetmetal
- Wastewater Treatment Plant Operator

POST-SECONDARY PATHWAY OPPORTUNITIES

There are several post-secondary pathway opportunities in this area. Following is partial list.

- Water Quality Technician
- Environmental Engineering



Environmental Systems: Basic and Advanced Water Resources

Youth Apprenticeship
ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

YOUTH APPRENTICE INFORMATION

Youth Apprentice Name
YA Coordinator
YA Consortium
School District

SIGNATURES

The On-the-Job Learning Performance Standards Guide includes a list of competencies youth apprentices learn through mentoring and training at the worksite.

Instructions for the Worksite Employers/Mentors and School-Based or YA coordinators: This document should be reviewed with the employer/mentor, school-based or YA coordinator on a regular basis with the youth apprentice to record progress and plan future steps to ensure completion of the required competencies. Mentors, school-based/YA coordinator, and the apprentice sign below.

Employer/Mentor

1 st Evaluation (Required)	2 nd Evaluation (Required)
Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed

3 rd Evaluation (Optional)	4 th Evaluation (Optional)
Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed

School-Based and/or YA Coordinator

1st Evaluation (Required)

School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator
School District or Organization
Date Signed

2nd Evaluation (Required)

School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator
School District or Organization
Date Signed

3rd Evaluation (Optional)

School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator
School District or Organization
Date Signed

4th Evaluation (Optional)

School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator
School District or Organization
Date Signed

Youth Apprentice

1st Evaluation (Required)

Youth Apprentice Signature
Youth Apprentice
School District / High School
Date Signed

2nd Evaluation (Required)

Youth Apprentice Signature
Youth Apprentice
School District / High School
Date Signed

3rd Evaluation (Optional)

Youth Apprentice Signature
Youth Apprentice
School District / High School
Date Signed

4th Evaluation (Optional)

Youth Apprentice Signature
Youth Apprentice
School District / High School
Date Signed

EMPLOYABILITY SKILLS (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

All youth apprentices must demonstrate the key employability skills listed below in order to complete the YA program. They do so by earning at least a "Meets Expectation" rating in each. **At least two evaluations are required each year of a youth apprenticeship.** More columns are included below for those who choose to conduct more frequent reviews.

1	Working to Meet Expectations: Needs improvement; requires much assistance and supervision; rarely displays this behavior
2	Meets Expectations: Meets entry-level criteria; requires some supervision; often displays this behavior
3	Exceeds Expectations: Exceeds entry-level criteria; requires minimal supervision; consistently displays this behavior

Employability Skills		Rating			
Competency and Rating Criteria		Initial	Mid Year 1	Mid Year 2	Final
1. Develops positive work relationships with others. <i>Examples of qualities and habits that the employee might exhibit include:</i>	<ul style="list-style-type: none"> Interacts with others with respect and in a non-judgmental manner Responds to others in an appropriate and non-offensive manner Helps co-workers and peers accomplish tasks or goals Applies problem-solving strategies to improve relations with others When managing others, shows traits such as compassion, listening, coaching, team development, and appreciation 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
2. Communicates effectively with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> Adjusts the communication approach for the target audience, purpose, and situation to maximize impact Organizes messages/information in a logical and helpful manner Speaks clearly and writes legibly Models behaviors to show active listening Applies what was read to actual practice Asks appropriate questions for clarity 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
3. Collaborates with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> Works effectively in teams with people of diverse backgrounds regardless of sex, race, ethnicity, nationality, sexuality, religion, political views, and abilities Shares responsibility for collaborative work and decision making Uses the problem-solving process to work through differences of opinion in a constructive manner to achieve a reasonable compromise Avoids contributing to an unproductive group conflict Shares information and carries out responsibilities in a timely manner 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

Employability Skills		Rating			
Competency and Rating Criteria		Initial	Mid Year 1	Mid Year 2	Final
4. Maintains composure under pressure <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> • Uses critical thinking to determine the best options or outcomes when faced with a challenging situation • Carries out assigned duties while under pressure • Acts in a respectful, professional, and non-offensive manner while under pressure • Applies stress management techniques to cope under pressure 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
5. Demonstrates integrity <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> • Carries out responsibilities in an ethical, legal and confidential manner • Responds to situations in a timely manner • Takes personal responsibility to correct problems • Models behaviors that demonstrate self-discipline, reliability, and dependability 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
6. Performs quality work <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> • Carries out written and verbal directions accurately • Completes work efficiently and effectively • Performs calculations accurately • Conserves resources, supplies, and materials to minimize costs and environmental impact • Uses equipment, technology, and work strategies to improve workflow • Applies problem-solving strategies to improve productivity • Adheres to worksite regulations and practices • Maintains an organized work area 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
7. Provides quality goods or services (internal and external) <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> • Shows support for the organizational goals and principles by own personal actions • Displays a respectful and professional image to customers • Displays an enthusiastic attitude and desire to take care of customer needs • Seeks out ways to increase customer satisfaction • Produces goods to workplace specifications 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
8. Shows initiative and self-direction <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> • Prioritizes and carries out responsibilities without being told • Responds with enthusiasm and flexibility to handle tasks that need immediate attention • Reflects on any unsatisfactory outcome as an opportunity to learn • Improves personal performance by doing something different or differently • Analyzes how own actions impact the overall organization • Supports own action with sound reasoning and principles • Balances personal activities to minimize interference with work responsibilities 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

Employability Skills		Rating			
Competency and Rating Criteria		Initial	Mid Year 1	Mid Year 2	Final
9. Adapts to change <i>Examples of qualities and habits that the employee might exhibit include . . . Shows flexibility and willingness to learn new skills for various job roles</i>	<ul style="list-style-type: none"> • Uses problem-solving and critical-thinking skills to cope with changing circumstances • Modifies own work behavior based on feedback, unsatisfactory outcomes, efficiency, and effectiveness • Displays a "can do" attitude 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
10. Demonstrates safety and security regulations and practices <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> • Follows personal safety requirements • Maintains a safe work environment • Demonstrates professional role in an emergency • Follows security procedures • Maintains confidentiality 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
11. Applies job-related technology, information, and media <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> • Applies technology effectively in the workplace • Assesses and evaluates information on the job • Assesses training manuals, website, and other media related to the job 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
12. Fulfills training or certification requirements for employment <i>Examples of this requirement may include . . .</i>	<ul style="list-style-type: none"> • Participation in required career-related training and/or educational programs • Passing certification tests to qualify for licensure and/or certification • Participation in company training or orientation • 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
13. Sets personal goals for improvement <i>Examples of this requirement may include . . .</i>	<ul style="list-style-type: none"> • Setting goals that are specific and measurable • Setting work-related goals that align with the organization's mission • Identifying strategies to reach goals • Reflecting on goal progress to regularly evaluate and modify goals 	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

YEAR 1 OCCUPATIONAL COMPETENCIES

(TO BE COMPLETED BY YA EMPLOYER/MENTOR)

Youth apprentices must earn a rating of at least "MEETS EXPECTATIONS" in each competency by the conclusion of the apprenticeship. A total of 11 competencies, 10 must be from the list below. If necessary, employers can substitute one competency with another occupationally appropriate skill. That skill should be added to the competency list for assessment. **At least two evaluations are required each year of a youth apprenticeship.** More columns are included below for those who choose to conduct more frequent reviews.

1	Working to Meet Expectations: Needs improvement; requires much assistance and supervision; rarely displays this behavior
2	Meets Expectations: Meets entry-level criteria; requires some supervision; often displays this behavior
3	Exceeds Expectations: Exceeds entry-level criteria; requires minimal supervision; consistently displays this behavior

Occupational Competencies	Rating			
	Evaluation			
	Minimum Rating of 2 EACH Check Rating			
Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final
1. Interpret work order <ul style="list-style-type: none"> use work order to plan work identify procedures to be completed follow work order to complete the work 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Create work order <ul style="list-style-type: none"> work order is entered into the computer work order includes all the key information work order is accurate 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Monitor operating conditions, meters, pumps, and gauges <ul style="list-style-type: none"> operate the flow measuring device monitor alarm systems follow site-specific alarm procedures identify alarm locations respond to alarms document results 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
4. Collect operational data <ul style="list-style-type: none"> obtain operational data collect and store samples for testing download data from meters and data loggers to computer databases perform physical measurements and process control calculations 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Occupational Competencies		Rating			
Competency and Rating Criteria		Evaluation			
		Minimum Rating of 2 EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
5. Use operations software (such as SCADA, PLC, DBs) <ul style="list-style-type: none"> locate file add and edit data query data verify data monitor processes 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
6. Perform basic facility maintenance <ul style="list-style-type: none"> don appropriate personal protective equipment (PPE) perform cleaning use appropriate cleaning solutions 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
7. Collect samples <ul style="list-style-type: none"> wear proper personal protective equipment (PPE) setup sampling equipment and materials setup field testing equipment, materials, etc. (test kits) identify proper method and container for sample label sample or container collect required amount of sample store sample as required preserve chain of custody 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
8. Measure weight <ul style="list-style-type: none"> select the appropriate equipment and materials for the measurement calculate the accuracy and standard deviation of your values record measurements in appropriate units and significant figures 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
9. Measure volume <ul style="list-style-type: none"> select the appropriate container for measuring volume measure using graduated cylinders measure using serological pipettes measure using micro pipettors record measurements in appropriate units and amount of significant figures 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
10. Perform calculations and conversions <ul style="list-style-type: none"> select appropriate formula perform the calculation verify accuracy convert flow rates record calculations or conversions 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Occupational Competencies		Rating			
Competency and Rating Criteria		Evaluation			
		Minimum Rating of 2 EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
11. Conduct basic lab tests <ul style="list-style-type: none"> • select and setup equipment and supplies • prepare reagents, solutions, and/or buffers • prepare quality control samples as needed • prepare sample for testing • test the sample • record results • clean glassware and instruments • segregate, recycle, or dispose of waste following facility guidelines • apply standard precautions • document testing results 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Competency Substitute (if you replaced a competency above, note the competency and rating)		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Comments:					

YEAR 2 OCCUPATIONAL COMPETENCIES

(TO BE COMPLETED BY YA EMPLOYER/MENTOR)

Youth apprentices must earn a rating of at least "MEETS EXPECTATIONS" in each competency by the conclusion of the apprenticeship. A total of 12 competencies, 11 must be from the list below. If necessary, employers can substitute 1 competency with another occupationally appropriate skill. That skill should be added to the competency list for assessment. **At least two evaluations are required each year of a youth apprenticeship.** More columns are included below for those who choose to conduct more frequent reviews.

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Occupational Competencies	Ratings			
	Evaluation - Minimum Rating of 2 EACH Check Rating			
	Initial	Mid Year 1	Mid Year 2	Final
1. Assist with report submissions <ul style="list-style-type: none"> obtain data and information complete forms obtain authorizations as indicated submit reports 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
2. Prepare chemicals <ul style="list-style-type: none"> perform calculations and conversions as needed determine the concentration and amount required mix the proper concentration of solutions from solids and/or liquids test and adjust pH or concentration if required label and store prepared item as required per protocol document chemical preparation as required clean up 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
3. Add chemicals to systems <ul style="list-style-type: none"> confirm chemical required verify chemical is properly mixed and within expiration date transport chemical to system site for addition to system add chemical to system site document chemical addition as required transport, store, and dispose of materials as indicated 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Occupational Competencies		Ratings			
Competency and Rating Criteria		Evaluation - Minimum Rating of 2 EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
4. Perform start-up and shut down of pumps and equipment <ul style="list-style-type: none"> check equipment fluid, air, pressure levels as required set equipment settings as required monitor start-up as required to ensure correct operation shut-down equipment safely identify any process or equipment maintenance concerns take corrective action to report and correct maintenance concerns 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
5. Inspect operational equipment <ul style="list-style-type: none"> inspect equipment for function and damage assist to troubleshoot and repair equipment problems take corrective actions lockout/tag out equipment that is inoperable document inspection 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
6. Troubleshoot basic operations <ul style="list-style-type: none"> regularly review quality control indicators for water treatment operations assist to analyze lab results assist to analyze operational data for productivity/trends take corrective actions for item out of compliance following required protocol adjust processes for water treatment as required (add chemicals, adjust equipment rates, etc.) document operational correction 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
7. Analyze lab results <ul style="list-style-type: none"> collect data and results from testing select and use statistical tools to analyze and synthesize data create tables and graphs to organize data query and extract information from data interpret graphs and the trends in data use tools to manipulate data creating models, reports, plans, processes, or projects from data provided document analysis process and tools used draw conclusions based on analysis with worksite professional assist to troubleshoot operations and adjust processes based on lab results 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Occupational Competencies		Ratings			
Competency and Rating Criteria		Evaluation - Minimum Rating of 2 EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
8. Maintain schedules, communication, and documentation <ul style="list-style-type: none"> • update schedules as maintenance is completed • communicate maintenance and repair needs clearly • use the correct reporting formats for documentation and communication • document maintenance and repair activities accurately • maintenance is documented clearly and completely 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
9. Perform preventive maintenance (PM) <ul style="list-style-type: none"> • ensure that equipment is properly labeled and pulled from production use • follow appropriate Lockout/Tag Out procedures prior to performing PM • follow all safety requirements and wear appropriate personal protective equipment (PPE) as required • document preventative actions completed 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
10. Calibrate equipment <ul style="list-style-type: none"> • clean and adjust instruments before calibrating • calibrate tools and instruments accurately and correctly • promptly re-calibrate tools out of calibration • re-qualify tools and instruments sent out for recalibration or repairs • label tools and equipment that have been calibrated • document all calibration activities 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
11. Troubleshoot and repair equipment <ul style="list-style-type: none"> • ensure that equipment is properly labeled and pulled from production use (Lock Out/Tag Out) • follow all safety requirements and wear appropriate personal protective equipment (PPE) as required • take appropriate readings using meters and testing equipment • determine the cause of the problems reported • assist with basic repair • assist to re-qualify equipment • document testing, evaluation, repair, and requalification 		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

Occupational Competencies		Ratings			
Competency and Rating Criteria	Evaluation - Minimum Rating of 2 EACH Check Rating				
	Initial	Mid Year 1	Mid Year 2	Final	
12. Analyze operational data for productivity/trends <ul style="list-style-type: none"> • obtain questionable or out of compliance data and reports • define question/problem to be evaluated • select data analysis tool • collect additional data if needed • organize data using quality tools • analyze lab results and other operational data • assist to troubleshoot operations and adjust processes based on analysis 	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
Competency Substitute (if you replaced a competency above, note the competency and rating)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
Comments:					

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