

Knowledge, Skills Abilities -- Gap Analysis Tool

Laboratory Analyst Grade I	Do It All The Time	Limited Experience	Never Do This
101. Basic understanding of standard physical, chemical and microbiological properties of wastewater.			
102. Methods and techniques used in quantitative laboratory analysis related to subject matter.			
103. Laboratory equipment related to subject matter and its use and care.			
104. Laboratory hazards and proper safety precautions and procedures, chemical hygiene, including personal protective equipment.			
105. Methods for preparation of standardized reagents and media.			
106. Methods of cleaning glassware used in laboratory analysis.			
107. Basic wastewater mathematical calculations related to subject matter, including significant figures.			
108. Perform standard quantitative laboratory analysis. (60%)			
109. Communicate clearly and concisely, both orally and in writing, in the English language. (20%)			
110. Establish and maintain effective working relationships with those contacted in the course of the work. (20%)			
111. Perform standard physical, chemical and biological tests on treated and polluted water, potable water, industrial and domestic wastewater and related materials, including proper sampling and preservation techniques.			
112. Analyze and interpret standard laboratory test results.			
113. Maintain accurate and complete laboratory records.			
114. Follow established safe working practices.			

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Laboratory Analyst Grade I	Do It All The Time	Limited Experience	Never Do This
115. Follow oral and written instructions.			
116. Clean and prepare laboratory equipment/glassware and maintain laboratory in orderly fashion.			
117. Read, understand and follow proper procedures in preparing standardized reagents and media.			
118. Perform basic wastewater mathematical calculations.			
Total Per Category			

If you have mostly "do it all the time" boxes checked, you may want to explore the next higher grade.
 If you have a mix of the "do it all the time" & "limited experience", this is likely the right grade.
 If you have mostly "never do this," you may want to explore a lower grade or get more experience.

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Laboratory Analyst Grade II	Do It All The Time	Limited Experience	Never Do This
200. Knowledge, skill and ability identified on the Test Content Specifications for Laboratory Analysis Grade I.			
201. Understanding of physical, chemical and microbiological properties of wastewater.			
202. General understanding of basic wastewater processes.			
203. Principles and practices of qualitative and quantitative chemistry, biology and bacteriology.			
204. Basic knowledge of pertinent federal and state codes and regulations involved in discharge permit, ELAP certification.			
205. Methods of handling, storing and disposal of hazardous chemicals and wastes.			
206. Perform standard quantitative laboratory analysis. (50%)			
207. Communicate clearly and concisely, both orally and in writing, in the English language. (30%)			
208. Establish and maintain effective working relationships with those contacted in the course of work. (20%)			
209. Perform analyses for subject matter in Essential Duty 201. (50%)			
210. Recommend or devise corrective action for analytical or instrumentation procedures (i.e., trouble shoot). (15%)			
211. Conduct more advanced wastewater mathematics. (15%)			
212. Prepare clear, concise and technical reports. (15%)			
213. Train and supervise the work of others. (5%)			

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Laboratory Analyst Grade II	Do It All The Time	Limited Experience	Never Do This
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Laboratory Analyst Grade III	Do It All The Time	Limited Experience	Never Do This
300. Knowledge, skill and ability identified on the Test Content Specifications for Laboratory Analysis Grades I and II.			
301. The services, operations and activities of a wastewater treatment laboratory testing program.			
302. The modern and complex principles and practices of chemistry, bacteriology and biology.			
303. Chemical, biological, bacteriological and physical characteristics of wastewater, biosolids, soils, and industrial pretreatment samples.			
304. Principles and practices of supervision, training and personnel management.			
305. Pertinent federal and state codes and regulations. (Federal Environmental Protection Agency, State Department of Health, and State Water Resources Quality Control Standards regarding water and waste water).			
306. Occupational hazards and standard safety practices, including chemical hygiene plan.			
307. Perform analyses in Essential Duty 301.			
308. Establish and maintain effective working relationships with those contacted in the course of work (i.e., employees, governmental agencies and the public).			
309. Communicate clearly and concisely, both orally and in writing, in the English language.			
310. Supervise, train and evaluate the activities of a staff.			
311. Evaluate, interpret, and apply the results of laboratory testing, including advanced mathematical calculations, such as statistics			
312. Conduct chemical, biological, and physical analyses of environmental samples.			
Total Per Category			

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Laboratory Analyst Grade III	Do It All The Time	Limited Experience	Never Do This
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Laboratory Analyst Grade IV	Do It All The Time	Limited Experience	Never Do This
400. Knowledge, skill and ability identified on the Test Content Specifications for Laboratory Analysis Grades I, II, and III.			
401. Current technological developments in wastewater treatment/control and principles and practices as applied to the treatment and disposal of treated wastewater and biosolids.			
402. Federal, state and local laws and regulations applicable to analytical procedures.			
403. Analytical techniques (such as GC/MS, ICP/MS), equipment, procedures, sampling techniques, methods of statistical analysis and data processing as applied to laboratory data management.			
404. Management principles including planning, organizing, staffing, directing, controlling and budgeting.			
405. Conventional quality assurance/quality control (QA/QC) practices for the wastewater laboratory, including the preparation of QA/QC charts.			
406. Wastewater treatment processes and expected operating parameters to recognize and pursue atypical test results and treatment process performance.			
407. Develop and maintain effective working relationships and understand and carry out verbal and written instructions. (45%)			
408. Communicate effectively with regulatory, plant, and member agency staffs and with the general public, in the English language. (45%)			
409. Perform analytical procedures as required. (10%)			
410. Plan, organize, direct, coordinate, and review the work of laboratory personnel.			
411. Analyze, interpret and effectively apply results of laboratory tests.			
412. Read, interpret and apply pertinent regulations.			
413. Prepare clear and concise technical reports.			
Total Per Category			

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Laboratory Analyst Grade IV	Do It All The Time	Limited Experience	Never Do This
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If you have mostly "never do this," you may want to explore a lower grade or get more experience.