

COUNTY OF SONOMA - JOB DEMANDS ANALYSIS

JOB CLASSIFICATION: Chemist (5142)

DEPARTMENT: WTR

PHYSICAL DEMAND STRENGTH RATING: Medium

DATE COMPLETED: October 2023

DIVISION: Operations and Maintenance

INSTRUCTIONS TO MEDICAL PROVIDERS COMPLETING THIS FORM:

Please use the “Medical Provider Use Only” columns to the right of each section and the “Medical Provider’s Comments & Signature” Section on the signature page to provide work restrictions by indicating whether there is some portion of each function that the employee can perform; designating whether each restriction is temporary or permanent; and, if restriction is temporary, stipulating the expected duration of work restriction(s). To finalize the form, please provide the name of the employee evaluated and additional comments, as appropriate, then sign and date where indicated.

FREQUENCY RATING:

Frequency	Percentage of time per shift	Repetition (# times per shift)	8 Hr. Shift	9 Hr. Shift	10 Hr. Shift	12 Hr. Shift
Never/Not Required (N)	n/a	n/a	n/a	n/a	n/a	n/a
Occasionally (O)	1 - 33%	1 – 100	0 - 2.5	0 - 3	0 - 3.5	0 – 4
Frequently (F)	34 - 66%	100 – 500	2.5 - 5.5	3 - 6	3.5 - 7	4 – 8
Continuously (C)	67 - 100%	500+	5.5 – 8	6 - 9	7 - 10	8 - 12

PART 1 - JOB DUTIES/FUNCTIONS:

A. Job Duty/Function	B. Job Duty #	C. Freq Rating	D. Equipment or tools used to perform (Describe)	E. Specialized Expertise, License, Certification Required? (Describe)	F. Essential or Non- Essential	Medical Provider Use Only: For each job duty/function, indicate in this column “Can Perform”, is “Temporarily Restricted” from performing, or is “Permanently Restricted” from performing.
While performing the following duties, employees work outdoors in all types of terrain, vegetation, and weather conditions, performs duties in both daylight and dark/dim conditions; works in proximity to water and wastewater, along creek beds, and homeless encampments; climbs stairs to heights up to 65 ft; walks on level and slippery surfaces, reaching, kneeling, bending, stooping, squatting, and climbing in the performance of daily duties.						

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Working in a laboratory, performs (under supervision until certified) chemical, biochemical, bacteriological, and physical water quality tests on raw, treated and partially treated water and wastewater samples; analyzes and evaluates test results; works with and in proximity to chemicals, fumes, solvents, and air contaminant aerosols.	1	C	Analyzers, small hand tools, monitoring equipment, particle sampler, auto samplers, on-line analyzers, solids microwaves, turbidimeters, titrators, balances, pH, conductivity, and dissolve oxygen meters, Toc analyzers, chemical and sample containers, computer	N/A	E	
Prepares or supervises the preparation of chemical and bacteriological media, reagents, and test solutions.	2	C	Analyzers, small hand tools, monitoring equipment, particle sampler, auto samplers, on-line analyzers, solids microwaves, turbidimeters, titrators, balances, pH, conductivity, and dissolve oxygen meters, Toc analyzers, chemical and sample containers, computer	N/A	E	
Uses independent judgement in setting up and carrying out	3	C	Analyzers, small	N/A	E	

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required laboratory tests to determine effectiveness of plant processes and to ensure wastewater discharge and potable water deliveries meet mandated requirements.			hand tools, monitoring equipment, particle sampler, auto samplers, on-line analyzers, solids microwaves, turbidimeters, titrators, balances, pH, conductivity, and dissolve oxygen meters, Toc analyzers, chemical and sample containers, computer			
Performs sampling activities in the field and at treatment plants; performs industrial waste flow sampling; collects and preserves aqueous and solids samples; performs testing on-site; wears a backpack carrying equipment; lifts and carries containers, and sampling and testing equipment weighing up to 50 pounds (two-person lifts); climbs ladders and stairs; works at heights up to 65 ft; paddles kayak or canoe in waterways; rides as passenger in motorboat.	4	O	Sampling pole, buckets, manhole pullers, analyzers, small hand tools, monitoring equipment, auto samplers, online analyzers, solids microwaves, turbidimeters, titrations, balances, field pH, conductivity and dissolve oxygen meters, Toc analyzers, chemical and sample containers, canoe, kayak, boat, floatation device	N/A	E	
Calibrates laboratory instruments and online physical/chemical	5	F	Computer, small	N/A	E	

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monitoring equipment; operates and maintains laboratory equipment such as spectrometers, flame and furnace atomic absorption spectrometers, gas chromatograph/mass spectrometers, dissolved oxygen meters, TOC analyzers, and distillation apparatuses; occasionally carries equipment weighing up to 50 pounds with assistance (two-person lifts) (e.g., filled cooler, samplers, other related equipment); climbs stairs and ladders to access equipment.			hand tools, online, handheld, and bench top monitoring equipment, laboratory instrumentation			
Determines laboratory supplies needed; maintains inventory and orders materials, chemicals, and supplies; orders supplies online, by phone, or in person; picks up and delivers supplies to job sites.	6	F	Computer, phone, vehicle	CA Driver's License	E	
Drives to job sites throughout the county, including rugged, remote, and off-road locations; loads, secures, and unloads materials and equipment; occasionally lifts, carries, and places equipment, coolers, and ice weighing up to 50 pounds (two-person lifts); inspects vehicle and reports any damage, safety, and maintenance issues.	7	F	Pickup truck, car	CA Driver's License	E	
Requires working long and irregular hours, including nights, weekends, and holidays, during response and recovery phases of hazardous waste spills and storm response.	8	O	N/A	N/A	E	
Maintains field observation logbook; keeps and maintains records pertaining to laboratory tests both computerized and paper; enters data into computer software; ensures all records are completed in compliance with regulations and according to agency, state, and federal guidelines; prepares detailed periodic technical reports.	9	C	Computer, file box	N/A	E	
Communicates by phone, email, two-way radio, and in person with co-workers and supervisors to coordinate work activities and problem-solve; communicates with vendors regarding replacement and part returns for defective parts/products.	10	F	Computer, phone, two-way radio	N/A	E	
Actively participates in department advisory groups and teams, such as: safety, process improvement, new program implementation/initiatives; provides input and makes recommendations; responds to requests for information from co-workers and public.	11	O	Computer, phone	N/A	E	
May represent the Water Agency on technical issues; may	12	O	Computer, phone,	N/A	N	

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speak before public bodies, organizations, committees, and the public on matters pertaining to agency initiatives, projects, programs, and activities.			microphone			
Follows state-mandated quality assurance protocols; establishes test priorities and schedules testing to comply with regular mandates; consults with regulatory agencies on changes in requirements and communicates necessary information to WA management and water and wastewater plant operators.	13	C	Computer, phone, cleaning supplies	N/A	E	
Continuously observes safety practices and procedures, including utilizing and implementing established safety practices, wearing appropriate safety gear, and reporting or correcting unsafe conditions. Assures appropriate safety procedures are followed in handling hazardous materials and maintains the Safety Data Sheets; maintains clean and safe facilities; wipes down and sanitizes work surfaces.	14	C	PPE (e.g., gloves, floatation devices, safety vest, particulate masks), cleaning supplies	N/A	E	
Assists in effluent sampling programs and industrial waste programs; ensures programs are carried out.	15	O	Computer, phone	N/A	E	
Leads and trains other staff in sample collection, lab procedures, and analytical record-keeping.	16	O	N/A	N/A	E	
Participates in continuous training, research, study, and reading, both on and off-site, to keep current on the subject matter and to maintain required certification.	17	O	Computer, book	Must possess a California Water Treatment Plant Operator Grade T2 Certificate and a Laboratory Analyst/Water Quality Analyst Grade II certification from the California Water Environment Association or the California-Nevada Section of the American Water Works Association within two years of employment	E	

PART 2: PHYSICAL DEMANDS

Activity	Examples of Duties/Functions Requiring Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY: Permanently Restricted
1 Sitting (e.g., driving, using phone, computer)	all	F			
2 Walking	all	F			
3 Running	N/A	N			
4 Standing	all	F			
5 Bending-Neck	all	F			
6 Bending-Waist	all	F			
7 Squatting	1 – 8	F			
8 Climbing	4,5	O			
9 Kneeling	1 – 8	O			
10 Crawling	N/A	N			
11 Twisting (neck) (e.g., driving; using phone, computer)	all	F			
12 Twisting (waist)	all	F			
13 Repetitive Hand Use	all	F			
14 Simple Grasping-Right Hand	all	F			
15 Simple Grasping-Left Hand	all	F			
16 Power Grasping-Right Hand (e.g., crowbars, manhole pullers)	1 – 8	O			
17 Power Grasping-Left Hand (e.g., crowbars, manhole pullers)	1 – 8	O			
18 Fine Manipulation-Right Hand	1 - 8	F			
19 Fine Manipulation-Left Hand	1 – 8	F			
20 Pushing and Pulling (right hand)	1 – 8	F			
21 Pushing and Pulling (left hand)	1 – 8	F			
22 Reaching (above shoulder level)	all	F			
23 Reaching (below shoulder level)	all	F			
24 Lifting-up to 10 lbs.	all	F			
25 Lifting-11-25 lbs.	1 – 8	F			
26 Lifting-26-50 lbs.	1 – 8	O			
27 Lifting 51-75 lbs.	N/A	N			
28 Lifting 76-100 lbs.	N/A	N			
29 Lifting 100 + lbs.	N/A	N			
30 Carrying 0-10 lbs.	all	F			
31 Carrying 11-25 lbs.	1 – 8	F			
32 Carrying 26-50 lbs.	1 – 8	O			
33 Carrying 51-75 lbs.	N/A	N			
34 Carrying 76-100 lbs.	N/A	N			

PART 3: SENSORY REQUIREMENTS

Activity	Examples of Duties/Functions Requiring Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
1 Functional vision, normal or corrected (i.e., driving, using computer)	all	C			
2 Functional color vision, normal or corrected (i.e., distinguish color differences between chemicals; determine analyses)	1 – 8	C			
3 Functional night vision, normal or corrected	1 – 8	O			
4 Functional hearing, normal or corrected (i.e., ensuring that tools and equipment are functioning properly, listening for audio alarms, communicating with work crews, co-workers, supervisors, other agencies, public)	all	C			
5 A sense of smell or taste (i.e., sensing fumes, vapors, leaks)	1 – 8	C			

PART 4: COMPREHENSION LEVEL

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
1 Follow Oral Instructions	C			
2 Follow Written Instructions	C			
3 Required to sustain concentration	C			

PART 5: NATURE OF TASKS

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
1 Follow set procedures	C			
2 Organize own work	C			
3 Able to ask questions or request assistance when needed	C			
4 Required to make decisions independently	C			
5 Required to train and/or lead other staff	O			
6 Required to direct other staff (e.g., planning, goal setting, performance)	N			

PART 6: WORK PACE

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
1 Tightly scheduled and rapid pace of work activities at high volume	O			
2 Meet time sensitive deadlines	F			
3 Long and/or irregular hours	O			
4 Limited/unpredictable opportunity for breaks	O			
5 Required to perform on-call or emergency work	O			

PART 7: COMPLEXITY/VARIABILITY

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
1 Variable and unpredictable workflow	O			
2 Attention divided by issues requiring multi-tasking	F			
3 Work requires precise attention to detail	F			
4 Use of judgment in routine matters	C			
5 Requires use of judgment in adapting procedures from one task to another	C			
6 Possible legal ramifications associated with work activities or work product	C			

PART 8: INTERACTIONS WITH OTHERS

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
1 Works with others (e.g., co-workers, other departments/agencies, public)	F			
2 Interactions limited to giving/receiving information	O			
3 Interactions exceed giving/receiving information (e.g., advises, persuades, justifies)	F			
4 Interactions occur under circumstances of emotional stress	N			
5 Risk of confrontation with violent or assaultive clients or customers	O			

PART 9: ENVIRONMENTAL FACTORS/WORKING CONDITIONS:

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
1 Work Inside	C			
2 Work Outside	F			
3 Extreme Heat (above 100 degrees)	O			
4 Extreme Cold (below 32 degrees)	O			
5 Excessive Noise (must raise voice to be heard) (e.g., in the field, at job sites)	O			
6 Vibration (e.g., jack hammer, hammer drill, chainsaw, etc.) (e.g., in the field, at job sites)	O			
7 Dust, Vapors, Fumes, Smoke	F			
8 Silica, asbestos, etc.	N			
9 Solvents (e.g., gas, turpentine, etc.)	O			
10 Grease, oils	O			
11 Acidic, Caustic Solutions	F			
12 Pesticides	N			
13 Explosives (e.g., dynamite, bomb, etc.)	N			
14 Cleaning supplies, abrasives	F			
15 Other Chemicals (e.g., drugs and other contraband)	N			
16 Human Blood, Body Tissues, or Fluids (e.g., taking samples from sludge, rag, or grit bins potentially exposes incumbents to tissues, fluids, and bloody hygienic items)	O			
17 Human Wastes	F			
18 Animal Blood, Body Tissues, or Fluids (e.g., occasionally incumbents will find slaughterhouse waste in samples)	O			
19 Animal Wastes	F			
20 Biological Toxins (e.g., poison ivy, poison oak, anthrax, etc.)	O			

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
21 Insect Bites (e.g., ticks, mosquitos, spiders, etc.)	O			
22 Biomedical Waste	N			
23 Ionizing Radiation	N			
24 Non-Ionizing Radiation (e.g., ultra-violet lamp)	O			
25 Electrical Energy (e.g., equipment, high voltage at treatment plants)	F			
26 Walking on uneven, slippery, or rough surfaces	F			
27 Proximity to moving mechanical parts (e.g., equipment, machinery)	F			
28 Proximity to moving vehicles or objects	F			
29 Heights (e.g., step ladders)	O			
30 Contact with water, other liquids, humid conditions - not weather related	C			
31 Work Below Ground	N			
32 Potential exposure to airborne infectious diseases (e.g., clinics, labs, corrections)	N			
33 Operates non-commercial motor vehicles (cars, pickup trucks)	F			
34 Operates commercial vehicles – CDL Class _____ Endorsements _____	N			
35 Operates passenger van to transport clients, inmates, et.	N			
36 Pulls non-commercial trailers or equipment	N			
37 Operates heavy equipment	N			
38 Other:	N			

PART 10: MEDICAL SCREENING, SURVEILLANCE AND VACCINATION REQUIREMENTS:

Please check each of the medical screening, surveillance, and vaccination requirements that apply to the position, and indicate if the requirement applies pre-employment/pre-placement only, or whether there are additional requirements after hire.

Medical Screening, Surveillance or Vaccination	Pre-Hire	Post-Hire	Frequency (one time, annual, etc.)
1 Audiometric Testing			
2 DOT Commercial Driver Drug and Alcohol Screening			
3 DOT Commercial Driver Physical Exam			
4 Respirator Physical Exam	X	X	annually
5 Respirator Questionnaire Short			
6 Respirator Questionnaire – Standard	X	X	annually
7 Blood lead level			
8 Hazardous Waste/Emergency Worker physical			
9 Heavy metal screen (mercury, lead, arsenic)			
10 HINT Hearing Noise Sensitivity Testing			
11 Tuberculosis skin test			
12 Vaccine: MMR			
13 Vaccine: Hepatitis B		X	offered
14 Vaccine: Influenza			
15 Vaccine: Meningococcal			
16 Vaccine: Pneumococcal			
17 Vaccine: Rabies			
18 Vaccine: Rabies Titer			
19 Vaccine: Tdap			
20 Vaccine: Chickenpox			

PART 11: ADDITIONAL INFORMATION, PICTURES, ETC.