

COUNTY OF SONOMA - JOB DEMANDS ANALYSIS

JOB CLASSIFICATION: Engineering Intern – PAID (0825 & 0829)

DATE COMPLETED: June 2024

DEPARTMENT: Sonoma County Water Agency

DIVISION: Engineering

PHYSICAL DEMAND STRENGTH RATING: Light

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.
Under direction, employees in this paid internship position work indoors in a typical office setting, in the field at job sites, and on survey teams; employees walk around jobsites, over uneven, steep, and slippery surfaces; employees may walk into and through waterways.						
Under supervision, assists in performing routine, minimally difficult, technical paraprofessional engineering office work, fieldwork, and/or surveying for water distribution, wastewater collection and treatment, and flood control projects.	1	C	Computer, phone	N/A	E	
Communicates by phone, in person, by email, or other written formats with supervisors, departmental staff; may communicate with members of the public as instructed by supervisors; explains project purpose; explain current programs; provides forms and other materials; maintains a calm and professional demeanor.	2	F	Computer, phone	N/A	E	

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May drive county vehicles to off-site job sites including rugged, remote, and off-road locations.	3	F	Car, pick-up truck	Valid CA Driver's License	E	
Observes the preparation of construction drawings and sketches, contracts, plans, specifications, property maps, field survey notes, and other materials as directed by supervisors; may make tracings of maps and construction drawings; may learn to use CAD software.	4	F	CAD, sketching tools, computer, phone	N/A	E	
Under direction and supervision, may learn to use engineering testing, drafting, and survey tools and equipment appropriate for assigned areas; reaches forward down and across to operate equipment; monitors and remains alert to verbal and visual cues from other workers, and to equipment instruments and gauges to monitor for malfunctions.	5	O	Testing, drafting, and survey tools/equipment	N/A	E	
May learn to assist with field, office, and computer-aided studies; collects data from field equipment; researches properties, utility locations, and title records; transcribes observed and computer data into standardized forms; takes samples of materials from job sites, quarries, or mix plants for testing; may assist with running various laboratory tests; may assist in preparation of periodic and special reports.	6	F	Computer, phone	N/A	E	
When assisting with in-the-field sample collection, carries sampling equipment (e.g., small submersible pumps, tables for sample collection, 12-volt batteries, coolers with ice) to sampling location; may be required to hike/walk off trail and/or wade into stagnant water and small streams; may use flow meters to measure flow rate; may visit well sites on both public and private land to perform depth water measurements; always accompanied by supervisor.	7	O	Phone, PPE, sampling equipment	N/A	E	
Performs basic engineering calculations for a variety of projects, reports, and other materials.	8	F	Computer, phone, calculator	N/A	E	
Follows established safety practices and protocols for working both in the office and in the field; wears appropriate safety gear; reports on unsafe conditions.	9	C	Phone, PPE	N/A	E	
May learn to inventory sewer usage and read meters.	10	O	Computer, phone	N/A	E	

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.
Assists with various office tasks such as filing, retrieving data from electronic data processing systems, establishing and updating paper and electronic files, and generating documents and correspondence.	11	F	Computer, phone, file boxes	N/A	E	
Construction Management Only: Learns about inspecting various phases of construction in progress to ensure compliance with plans, specifications, and methods or materials being used; walks around jobsites, over uneven, steep, and slippery surfaces; may walk into and through waterways; may be exposed to loud noises/vibrations and/or traffic; reports status of work to supervisors and managers.	12	O	Computer, phone	N/A	E	
Survey Interns Only: May work on a survey party; assists with various surveying tasks as directed; learns to use surveying instruments to determine points, lines, elevations, and distances for property, construction, triangulation, precise traverse, and topographic surveys; learns to serve as the rod person and/or chain person; measures distance between points; locates survey monuments and sets points; sets and aligns construction stakes; prunes trees, cuts brush, and clears area from line of sight; loads equipment onto trailer, secures, transports, and unloads equipment; may be exposed to traffic.	13	O	Brush/branch clippers, surveying equipment including rod, chain, tape, plumb-bob, construction stakes, survey instruments, GPS instruments, computer, vehicle, phone	N/A	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 (i.e., driving, using phone, computer)	All	C			
2 Walking	All	O			
3 Running	N/A	N			
4 Standing	All	O			
5 Bending-Neck (e.g., tracing, performing calculations)	All	O			
6 Bending-Waist (e.g., during inspections, bending to pick up files, sample collection)	1, 5, 6, 11, 12, 13	O			
7 Squatting (e.g., during inspections, squatting to pick up files, sample collection)	6, 7, 11, 12, 13	O			
8 Climbing	12, 13	O			
9 Kneeling (e.g., during inspections, filing, sample collection)	6, 11, 12, 13	O			
10 Crawling	N/A	N			
11 Twisting (neck) (i.e., driving; using phone, computer)	All	F			
12 Twisting (waist) (e.g., when conducting various office tasks, during inspections)	All	F			
13 Repetitive Hand Use (e.g., when conducting various office tasks, performing calculations and tracings)	4, 8, 11	F			
14 Simple Grasping-Right Hand (e.g., when conducting various office tasks, carrying light survey equipment)	4-7, 12, 13	F			
15 Simple Grasping-Left Hand (e.g., when conducting various office tasks, carrying light survey equipment)	4-7, 12, 13	F			
16 Power Grasping-Right Hand (e.g., clearing brush on a survey team, maneuvering sampling equipment)	7, 13	O			
17 Power Grasping-Left Hand (e.g., clearing brush on a survey team, maneuvering sampling equipment)	7, 13	O			
18 Fine Manipulation-Right Hand (e.g., making drawings and tracings, lab work)	4, 6	F			
19 Fine Manipulation-Left Hand (e.g., making drawings and tracings, lab work)	4, 6	F			
20 Pushing and Pulling (right hand) (e.g., maneuvering file boxes, sample collection, and survey equipment)	6, 7, 11, 12, 13	F			
21 Pushing and Pulling (left hand) (e.g., maneuvering file boxes, sample collection, and survey equipment)	6, 7, 11, 12, 13	F			
22 Reaching (above shoulder level) (e.g., loading and unloading survey equipment, clearing brush, filing, sample collection)	5-7, 11, 12, 13	F			
23 Reaching (below shoulder level) (e.g., unloading survey equipment, clearing brush, filing, sample collection)	5-7, 11, 12, 13	F			
24 Lifting-up to 10 lbs. (e.g., file boxes, rolled plans, flow meters)	6, 7, 11, 13	F			
25 Lifting-11-25 lbs. (e.g., small submersible & peristaltic pumps)	7, 13	O			
26 Lifting-26-50 lbs. (e.g., 12-volt batteries, tables for sample collection, coolers w/ice)	7, 13	O			
27 Lifting 51-75 lbs.	N/A	N			

Activity	Examples of Duties/Functions Requiring Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY: Permanently Restricted
28 Lifting 76-100 lbs.	N/A	N			
29 Lifting 100 + lbs.	N/A	N			
30 Carrying 0-10 lbs. (e.g., file boxes, rolled plans, flow meters)	7, 11, 13	F			
31 Carrying 11-25 lbs. (e.g., small submersible & peristaltic pumps)	7, 13	O			
32 Carrying 26-50 lbs. (e.g., 12-volt batteries, tables for sample collection, coolers w/ ice)	7, 13	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 (e.g., driving, using computer)	All	C			
2 Functional color vision, normal or corrected (e.g., sampling using color metrics)	4, 6, 7	O			
3 Functional night vision, normal or corrected	N/A	N			
4 Functional hearing, normal or corrected (e.g., 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 (smell only) (e.g., sensing fumes, vapors, leaks when in the field)	5, 6, 7, 12, 13	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	F			

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	O			
3 Able to ask questions or request assistance when needed	C			
4 Required to make decisions independently	O			
5 Required to train and/or lead other staff	N			
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	O			
3 Long and/or irregular hours	N			
4 Limited/unpredictable opportunity for breaks	N			
5 Required to perform on-call or emergency work	N			

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	O			
3 Work requires precise attention to detail	O			
4 Use of judgment in routine matters	O			
5 Requires use of judgment in adapting procedures from one task to another	O			
6 Possible legal ramifications associated with work activities or work product	N			

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)	C			
2 Interactions limited to giving/receiving information	C			
3 Interactions exceed giving/receiving information (e.g., advises, persuades, justifies)	N			
4 Interactions occur under circumstances of emotional stress	O			
5 Risk of confrontation with violent or assaultive clients or customers	N			

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	O			
3 Extreme Heat (above 100 degrees)	O			
4 Extreme Cold (below 32 degrees)	O			
5 Excessive Noise (must raise voice to be heard)	O			
6 Vibration (e.g., jack hammer, hammer drill, chainsaw, etc.)	O			
7 Dust, Vapors, Fumes, Smoke	O			
8 Silica, asbestos, etc.	N			
9 Solvents (e.g., gas, turpentine, etc.) (e.g., Eng. Interns may occasionally fuel vehicles)	O			
10 Grease, oils	O			
11 Acidic, Caustic Solutions (e.g., when preparing bottles for sampling incumbents may use acid and other chemicals)	O			
12 Pesticides	N			
13 Explosives (e.g., dynamite, bomb, etc.)	N			
14 Cleaning supplies, abrasives	O			
15 Other Chemicals (e.g. drugs and other contraband)	N			
16 Human Blood, Body Tissues, or Fluids	O			
17 Human Wastes	O			
18 Animal Blood, Body Tissues, or Fluids	O			
19 Animal Wastes	O			
20 Biological Toxins (e.g., poison ivy, poison oak, anthrax, etc.)	O			
21 Insect Bites (e.g., ticks, mosquitos, spiders, etc.)	O			
22 Biomedical Waste	N			
23 Ionizing Radiation	N			
24 Non-Ionizing Radiation	N			
25 Electrical Energy (Electrical Engineering Intern Only)	O			
26 Walking on uneven, slippery, or rough surfaces	O			
27 Proximity to moving mechanical parts (e.g., equipment, machinery)	O			
28 Proximity to moving vehicles or objects	O			
29 Heights (e.g., step ladders)	O			
30 Contact with water, other liquids, humid conditions - not weather related	O			
31 Work Below Ground: (e.g., excavation, trench, etc.)	N			
32 Potential exposure to airborne infectious diseases (e.g. clinics, labs, corrections)	N			
33 Operates non-commercial motor vehicles (cars, trucks)	O			
34 Operates commercial vehicles – CDL Class _____ Endorsements _____	N			
35 Operates passenger van to transport clients, inmates, etc.	N			
36 Pulls non-commercial trailers or equipment	N			
37 Operates heavy equipment	N			
38 Other:	N/A			

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	Construction management and survey only: X		One time
2 DOT Commercial Driver Drug and Alcohol Screening			
3 DOT Commercial Driver Physical Exam			
4 Respirator Physical Exam			
5 Respirator Questionnaire – Short			
6 Respirator Questionnaire – Standard			
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.

Sampling Equipment	Weight
Small Submersible & Peristaltic Pumps	Less than 20 lbs.
Tables for collecting samples	20 – 30 lbs.
12-Volt Batteries	30 lbs.
48 – 52-quart Coolers w/ ice	~ 30 – 50 lbs. depending on how much ice is in the cooler; two-person lifts for heavier coolers)
Flow Rate Meters	Less than 10lbs
Survey Equipment	Weight
Graduated Rod, Chain, Tape, Plumb-Bob, Construction Stakes, Survey & GPS Instruments	Less than 10lbs
Tree Trimmers	Less than 10lbs