

**JOB DESCRIPTION AND POSITION CLASSIFICATION**

CLASSIFICATION <b>Engineer, Water Resources (Limited Term)</b>		DWR POSITION NUMBER <b>1380-3137-900</b>	SAP POSITION NUMBER <b>50105303</b>	MCR <b>1</b>
APPOINTEE <b>Vacant</b>		SAP PERSONNEL NO. <b>TBD</b>	DIVISION/SECTION <b>Modeling Support Office/Central Valley Modeling</b>	
COLLECTIVE BARGAINING IDENTIFIER Management Related BU: <input type="checkbox"/> Supervisory Related BU: <input type="checkbox"/> Confidential Related BU: <input checked="" type="checkbox"/> Rank and File BU: <b>R09</b>				
RESPONSIBILITIES EXERCISED <input type="checkbox"/> Supervisory <input type="checkbox"/> Lead Person		IMMEDIATE SUPERVISOR (Print) <b>Yiwei Cheng</b>	SUPERVISOR'S CLASSIFICATION <b>Senior Engineer, Water Resources</b>	
APPROVED BY (Personnel Analyst's Name) <b>Tammy Geer</b>			DATE <b>6/03/2026</b>	
<i>Percent of Time</i>	<i>Activity</i>			
	<p><b>POSITION SUMMARY:</b> Under the supervision of a Senior Engineer, Water Resources in the Central Valley Modeling Section of the Modeling Support Office, the incumbent is responsible for developing, enhancing, maintaining and applying the integrated hydrology model of the California Central Valley, such as the California Central Valley Groundwater-Surface Water Simulation Model (C2VSim), its interaction with the reservoir systems analysis model, CalSim. In addition, the incumbent is expected to perform data analysis, apply and direct the formulation and application of integrated hydrologic models.</p> <p><b>ESSENTIAL FUNCTIONS:</b> The incumbent should have experience and knowledge of numerical modeling: knowledge of surface water and groundwater hydrology and related numerical simulation methods, systems (reservoir operations) modeling, experience with computer programming and scripting languages (e.g. Python, R, Fortran), and good oral and written communication skills. The incumbent is also required to work cooperatively with others, maintain regular, consistent, and predictable attendance, and exercise good judgment. Training will be provided commensurate with experience, skill level, and assigned responsibilities. The specific essential duties are, but are not limited to, the following:</p> <p><b>30%</b> Participates in the development, enhancement and maintenance of the C2VSim model for use independently or coupled with the CalSim model in planning studies of the Central Valley water resources system. This includes historical and scenario-based input data development, calibration of the historical C2VSim model using automated calibration software Parameter Estimation (PEST) model, and conducting uncertainty and sensitivity analyses.</p> <p><b>30%</b> Develops and maintains support programs and utilities for C2VSim, used either independently or coupled with CalSim, to streamline and enhance data manipulation and analysis on simulation input and output.</p>			
SUPERVISOR'S STATEMENT: <b>I HAVE DISCUSSED THE DUTIES OF THE POSITION WITH THE EMPLOYEE.</b>				
SUPERVISOR'S NAME (Print) <b>Yiwei Cheng</b>		SUPERVISOR'S SIGNATURE ➤		DATE
EMPLOYEE'S STATEMENT: <b>I HAVE DISCUSSED WITH MY SUPERVISOR THE DUTIES OF THE POSITION AND HAVE RECEIVED A COPY OF THE DUTY STATEMENT.</b>				
EMPLOYEE'S NAME (Print) <b>Vacant</b>		EMPLOYEE'S SIGNATURE ➤		DATE

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<i>Percent of Time</i>	<i>Activity</i>		
<b>30%</b>	<p>This includes developing tools using programming languages such as Python, Fortran, VisualBasic, C++, etc., developing macros and extensions for MS Excel, developing visualization and processing tools for ArcGIS, QGIS and Tableau, and developing utilities for PEST calibration runs.</p>		
<b>10%</b>	<p>Participates and improves the simulation and reliability of the CalSim and C2VSim models to determine impact on Central Valley water supplies and their application in studies of the State Water Project and Central Valley Project (SWP and CVP) for the planning, management and policy development for the surface water, groundwater, and conjunctive use programs of the California water resources system. Evaluates a wide range of alternatives that will have statewide impacts on water supply reliability, groundwater availability and yield, agricultural water use, drinking water quality, the Bay-Delta environment, and potential impacts of climate change.</p> <p>Coordinates with representatives from local, State and federal agencies and the public sector in the use of C2VSim as an independent model or coupled with CalSim. Prepares model application reports for the internal documentation, management review, or dissemination to the public or other agencies. Presents findings and results of technical projects in lay language for management decisions. Makes presentations to various State, federal and local agencies to communicate model development activities and project results and participates in public workshops and conferences related to ongoing projects.</p> <p><b>SPECIAL REQUIREMENTS</b></p> <p>All employees are responsible for contributing to an inclusive, safe, and secure work environment that values diverse cultures, perspectives, and experiences, and is free from discrimination.</p> <p>The Department of Water Resources is committed to its mission and employees, and we are grounded in our commitment to public safety. Regular, consistent, and predictable attendance is essential to the successful performance in this position.</p> <p>Strong background in surface water and groundwater hydrology, in numerical methods to simulate surface and subsurface flows, and experience in using integrated hydrologic models are required.</p> <p>Knowledge and experience in GIS, computer programming languages such as Python, R and Fortran, good writing and communication skills are highly desirable.</p> <p>Proficiency in data analysis using methods such as machine learning and classical statistical techniques, are highly desirable.</p>		

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	<p><b>OTHER RESPONSIBILITIES:</b></p> <p><b>This position provides necessary support to the Divisions of Flood Management, Safety of Dams, Operations and Maintenance, Engineering, and/or the Public Affairs Office during Governor declared emergencies, flood, dam, SWP, and other incidents and emergencies. Additionally, this position may participate in emergency operations in the capacity of area teams, field inspection, coordination, and assist agencies such as Cal OES and FEMA in disaster work, including performing fieldwork to complete damage survey reports for droughts, flooding, earthquakes, and other emergencies. This position may also serve in one of the sections as established in the Incident Command System to assist the Department in performing its emergency preparedness, response, recovery, and mitigation functions. These functions are established in the California State Emergency Plan and the Department's Administrative Orders.</b></p>			