

ENGINEER PROFILE

Name: Medi Sinaki

Organization: City of San Jose Environmental Services
Department – San Jose /Santa Clara Water Pollution Control Plant



Engineering Discipline (Check one below):

- Civil
- Mechanical
- Electrical
- Environmental (including Process)
- Structural
- Information Technology
- SCADA
- Other

1. Please describe the work you do:

In my current position as an Associate Engineer working at SJ/SC WPCP, I develop, manage, and implement Capital Improvement Program (CIP) projects. The majority of them are related to the plant processes and improvements/maintenance of the existing infrastructures at the Plant. Some of the projects could also involve research and feasibility studies related to the optimization of the processes. The projects requires engineering design and calculations for selection of pumps, valves, actuators, and related controls for various process streams including air, digester gas, wastewater, and sludge. I also prepare plans, specifications, and cost estimates for the CIP projects including pipelines, process equipment, pumps, valves, control systems, chemical injection systems, and process monitoring equipment.

2. What combination of education, experience, and skill was required in order for you to obtain your job?

I held a Master degree in Engineering with concentration in water resources from San Jose Sate University and a Bachelor in Chemistry/Chemical Engineering when I joined the City in August 2006. I also had a Grade 3 Water Treatment Operator certificate and Engineer-In-Training (EIT) certification. In addition to my academic qualifications I had more than ten years of professional experience in the field of water and wastewater treatment. The combination of my education and professional experience was instrumental in getting hired for this job.

3. What do you like best about your job?

I believe that my current duties as an Associate Engineer at the Plant are quite challenging and both my education and years of experience are being fully utilized. I also find the field of water and wastewater treatment very interesting. The dynamic nature of the treatment processes at the Plant and complexity of the problems that are encountered every day make me think hard and stimulate my mind. The work is not routine and I get to use and combine what I have learned at school and out in the field to get the job done.

4. Please tell us about the water or wastewater engineering project you enjoyed working on the most, and what made it rewarding,

I developed, managed, and implemented a project related to energy savings which involved research and feasibility studies for process optimization.

The project required implementation of wastewater treatment process improvements with specific targets for energy savings under California Wastewater Process Optimization Program (CalPOP). The related project tasks were all challenging and had significant environmental implications. They also required coordination of many resources in order to develop, design, and implement process improvements. All these proved to be very challenging, interesting and required extraordinary efforts in time management, planning, and scheduling. I had to work with many people from different areas of the Plant and also outside such as Planning Dept., Purchasing, City Attorney's Office, consultants, and vendors in order to complete the project. At the end it all paid off and upon full implementation the Plant is now realizing energy savings annually while significantly reducing green house gas emissions. City also received a \$279,000 rebate check from PG&E in March 2009 for putting in place the energy saving measures.

5. What qualities and capabilities are needed in order for an engineer to be successful in the water/wastewater industry?

He/She should be able to manage various project types related to water and wastewater treatment processes and also have a good understanding of the associated collection and distribution system.

Skills in managing multidiscipline design teams, developing plans and specifications, maintaining quality control, technical review of completed work; report preparation and coordinating activities related to both design and construction administration are of paramount importance as well..

The engineers in the field of water/wastewater could end up being responsible for the completion of planning, design drawings and specifications and construction management of water and wastewater treatment facility infrastructure, piping, pump stations, lift stations and treatment plants. Thusly a good basic knowledge of the following areas is very useful:

- Working knowledge of water chemistry
- Ability to work with civil designers, CADD technicians and land surveyors to produce preliminary designs and construction drawings
- Hydraulic and process calculations
- Equipment selection
- Specifications writing
- Cost estimating
- Working knowledge of local, state and federal clean water regulations and permitting processes

6. Do you have any advice for an individual who is considering pursuing a career as an engineer in the water/wastewater industry?

The field of water/wastewater is very interesting and challenging. As an engineer you get to use a good deal of what is learned at school in terms of theoretical knowledge. The field experience helps you to put

that knowledge into work and see the results in action. Keep up with broadening your knowledge base by attending technical seminars. Obtain professional certifications such as EIT, PE, WTO, etc. Get involved in Professional/Technical societies like California Water Environment Association (CWEA), etc. Never stop learning new things about water/wastewater treatment as there's always something new to learn.