**Stefka Ormsby**

Senior Process Engineer

9044 E. Wrightstown Rd. Tucson, Arizona 85715 Cell: 520-440-0390 email: [stefkao@yahoo.com](mailto:stefkao@yahoo.com)

**SUMMARY**

Chemical engineer with ten years of experience in chemical and metallurgical processes related to copper, gold, cobalt and molybdenum production. Technical expertise in research and development of innovative water treatment and metal recovery technologies. Hands on experience and knowledge with engineering, startups and commissioning of pilot and full-scale plants with capital worth of 0.5 – 40 million US dollars. Manage technicians, consultants and provide technical support to plant operators to achieve project goals. Highly organized and dedicated mature individual with excellent skills in multi-tasking and time management.

**AREAS OF EXPERTISE**

* ***Design, Startup and Commissioning of Chemical Plants***
* ***Research and Development of Water Treatment and Residual Metal Recovery Technologies***
* ***Engineering and Design of PFDs, Mass and Energy Balance, Equipment Requirement and Procurement, Capital and Operation Cost Estimates***
* ***Control Logic and HMI Design, Troubleshooting of Process and Problem Solving***
* ***Data Management, Analysis and Reports***
* ***Development of SOP and Compliance Sampling Protocols***
* ***Technical Oversight and Management of Third Party Consultants and Technology Partners***
* ***Laboratory Operations and Management***
* ***Hiring of Personnel and Interns***

**PERSONAL SKILLS**

Pro-active Dedicated Attention to detail

Organized Caring Good communicator

Punctual Practical Safety conscious

**EDUCATION**

BS. Chemical Engineering - The University of Arizona (May 2008)

Associate of Science - Pima Community College (May 2005)

Technical School of Industrial Chemistry “Asen Zlatarov” - Dimitrovgrad, Bulgaria (June 1993)

***Design, Startup and Commissioning of Chemical Plants***

* Actively involved with detail engineering design and reviews of P&IDs for pilot and full scale process plants.
* Participated in HAZOPS, engineering reviews, procurement, creation of operating manuals, review of health and safety procedures.
* Experience with plants startups and commissioning of equipment and instrumentation. Participated in reagent systems set-ups, establishment of level indicators for reactors and pump speed correlations for process flows.
* Worked closely and trained plant supervisor and operators to make them familiar with plant specifics for continuous operations. Encourage open communication between all parties in the organization to improve plant operations.
* Successfully completed commissioning by meeting all discharge requirements indicated within the discharge permit without risk to environment, personnel and equipment.

***Research and Development of Water Treatment and Residual Metal Recovery Technologies***

* Provided scoping-level technical, social, and financial evaluation of water treatment technologies that can neutralize or reduce environmental liability. Evaluated wide range of chemical processes.
* Designed and conducted multiple bench-scale experiments using variety of selected **sorption** minerals and rocks to identify the loading capacity and potential for removal of metals (Cu, Zn, Cd, Fe, Al, Mo, Mn) from process solutions.
* Designed and conducted bench-scale experiments using **ion exchange resins, solvent extractants** and **chemical precipitation** to selectively recover rare earth metals from acidic leach solution.
* Evaluated process alternatives for treatment of mining waters via **renewable power sources**.
* Designed and conducted bench-scale experiments to stabilized heap leach solutions and convert it into salable market product (Epsom salt) via **crystallization**.
* Designed and conducted bench-scale experiments using **ion exchange resins** to recover Ni/Co from acidic leach solution and convert into feasible smelter feed material.
* Participated in development and engineering of a novel process to recover **rhenium from copper leach solution** via activated carbon independently of Mo recovery. Co-inventor of Patent #8,361,192. Additionally participated in the design and testwork for Re recovery from smelter blowdown.
* Designed and conducted bench-scale experiments for removal of Mo from solution by using **ion exchange resins or chemical precipitation.**
* Developed a matrix, summarizing best practices for the main **dust emission sources** at the North American Mine Sites such as: tailings, crushers/material transfer points, mine dust control and site specific locations.
* Conducted testwork with **Reverse Osmosis** SEPA system for sulfate removal from groundwater to reduce liability.
* Evaluated process alternatives to recover Ag, Au and Cu from copper leach residue material via **thiosulfate leaching and advance oxidation**.
* Participated in the development of construction materials using geopolymerization of mine tailings and aluminum sludge additives. Additionally, participated in the development of **brixx and construction materials** made from tailings that could be used for community development in rural regions of the world.

***Engineering and Design of PFDs, Mass and Energy Balance, Equipment Requirement and Procurement, Capital and Operation Cost Estimates***

* Participate in project engineering design and project reviews in-house and with third party consulting companies.
* Performed chemical mass balance and energy balance analysis for process evaluation on variety of projects.
* Experienced with design and reviews of Process Flow Diagrams (PFD) and plant instrumentation. Made adjustments when necessary to streamline process performance when at the design stage.

* Review of process chemistry and compatibility with material of construction of plant equipment. Experienced with process equipment design and equipment size.
* Performed capital and operating cost estimates for various projects within the portfolio.
* Experienced with procurement of equipment and reagents for pilot and full scale plants.

***Control Logic and HMI Design, Troubleshooting of Process and Problem Solving***

* Performed commissioning of process control logic. Reviewed initial designs and provided input to the programmer to ensure the plant operated according to the design specifications. Designed visual computer interface for easy understanding and usability for the operators.
* Participated with programming instrumentation such as: level indicators, flow meters, sampling devices, H2S monitors, speed controls and reagent addition systems. Preformed testwork to determine start-up reagent requirements and achieve process goals.
* Preformed troubleshooting of process to achieve optimum performance within the design control parameters and resolve operational issues.

***Data Management, Analysis and Reports***

* Assisted with development of SQL server data storage and data archiving for plant operations.
* Generated production reports via Rockwell Factory Talk Data Historian Interface to communicate plant performance to senior management.
* Generated technical memos and reports to summarize experimental data and recommendations to clients.

***Development of SOP and Compliance Sampling Protocols***

* Developed compliance sampling protocols to meet discharge specifications as per permit obligation required by environmental agency.
* Developed operation and maintenance manual for full scale plants to provide guidance for proper plant operations.
* Developed and previewed SOPs and work conducted at the lab. Trained lab personnel and provided overview on new testwork to ensure that the employees are not overwhelmed of the new tasks.

***Technical Oversight and Management of Third Party Consultants and Technology Partners***

* Providing technical support to variety of sites within the portfolio by resolving complex technical issues and providing fast and efficient solutions.
* Monitoring and evaluation of plant operations to meet discharge specifications as per permit requirements and ensure safe operations without H2S excursions.
* Able to ensure that all technical plant procedures are met and maintained. Help the operators learn by experience. Generated reports to senior management.
* Responsible for the execution of NDAs, contracts and supervision of consultants. Review and editing of technical proposals, data analysis and reports delivered by consultants.
* Evaluated variety of processes proposed by outside companies and made recommendations to senior management for application among the mines within the portfolio.
* Managing project budgets and keeping the cost down.

***Laboratory Operations and Management***

* Development and implementation of laboratory methods and procedures. Ensuring that work is carried out in accordance with the companies guidelines and clients satisfaction.
* Management of laboratory personnel and project coordination with engineers and senior management. Prioritization and execution of project goals and deliverables.
* Responsible for team of 6: lab supervisor, chemist, technicians, geotemps. Provided guidance and encouraged positive thinking while creating friendly working environment.
* Provide feedback and coaching to junior engineers. Further direct them and re-evaluate different ways to efficiently accomplish the goals in a practical way.
* Established new lab practices (daily safety meetings, data base for lab analyses with easy access, project scheduling, project timesheet to stay within the budget) and better environment to deliver quality of work and efficiency on the projects conducted at the lab leading to positive customer satisfaction and employee dynamics.

***Hiring of Personnel and Interns***

* Interviewed and hired lab personnel, summer interns and geotemps.
* Participated in hiring of plant engineers, operators, maintenance crew and supervisor.

**SOFTWARE SKILLS & TRAININGS**

* OPTO 22 Process Control Software
* ASPEN PLUS Process Simulation Software
* Rockwell Factory Talk Data Historian Interface
* Reverse Osmosis – Back to Basics
* Crystallization Operation
* Solvent Extraction & Electrowinning
* 40-hour Mine Safety and Health (MSHA) New Miner and Annual Refreshers
* 40-hour Hazardous Waste Operations

**PATENTS AND PUBLICATIONS**

* Co-inventor US Patent # 8,361,192. Methods and systems for recovering rhenium from a copper leach
* Ren X., Zhang L., Ramey D., Waterman B., Ormsby S. (2014). Utilization of aluminum sludge (AS) to enhance mine tailings-based geopolymer, Journal of Material Science, vol. 50, issue 3, pp. 1370
* Cook K., Morehead Y., Moline D., Ormsby S., (2008). Frozen Yogurt Manufacturing, UofA Engineering Library