

About Sulfur Recovery Engineering Inc.

Sulfur Recovery Engineering (SRE) is an international engineering field testing and consulting company that helps clients to cut costs, reduce emissions, and optimize performance of their Sulfur Recovery Units (SRUs) and associated upstream process units.

Although named after a specific process, SRE has the capability to collect samples from almost any process gas stream in any unit at a gas plant or refinery, and perform an immediate onsite analysis. SRE has also performed onsite testing for fertilizer plants, CO₂ plants, pulp mills, and has even performed building air quality assessments.

SRE's services provide our customers with invaluable information regarding the materials and reactions taking place within their processes, and how this impacts equipment, operations, and their bottom line. SRE provides solutions to operating problems, and helps clients to optimize sulfur recovery, limit emissions, prevent unscheduled emergency plant shutdowns, and control costs.

Founded in 1998 by John O'Connell, an authority in SRU environmental and engineering circles with a proven track record in Sulfur Recovery in Gas Plants and Refineries Worldwide, SRE has successfully completed hundreds of projects, and is an industry leader in the development and on-site use of state-of-the-art diagnostic equipment and processes.

SRE has collaborated with Virtual Material Group (VMG), the developer of VMGSim™, a hydrocarbon simulation package that includes a superior SRU sulfur plant simulation package. SRE uses this program to model all plants we visit and it is a powerful tool that we use for on-site optimization of the unit. Our engineering reports can include a tuned model of the client's SRU that they can open in VMGSim™ and manipulate the variables to track operational trends in their plants.

SRE is committed to Research and Development in Sulfur and related technologies, and is a member company in Alberta Sulphur Research Limited (ASRL). ASRL conducts research in the field of chemistry and it concerns the science and technology of sulfur and its compounds with particular emphasis on the production, processing and utilization of sour gas, sour crude oils, oil sands, and their related products. Much of the current focus is on energy efficiency, environmentally sound recovery processes, and the handling, storage and transportation of elemental sulphur.

- ***Established in 1998 in Calgary, Alberta, Canada***
- ***Perfect safety record since inception***
- ***Perform on-site Amine Unit surveys, SRU testing, general analytical services, training, and process simulation services for Gas Processing Plants and Oil Refineries worldwide***

SRE's Specialized Services

Sulfur Recovery Engineering's objectives are to provide professional services and expertise that will enable clients to optimize operations and properly manage sulfur recovery units (SRUs) - and associated upstream process units - on a day-to-day and long-term basis. Portable laboratory equipment and proprietary micro gas chromatography technology enable SRE to offer “**next plane out**” deployment for on-site testing services.

SRE's specialized services include:

- Sulfur Plant Performance Evaluation
- Amine System Performance Evaluation
- TGTU Performance Testing
- Process Troubleshooting
- Optimization using VMGSim™
- Start-up and Shutdown Assistance
- Sulfur Plant Capacity (Turndown) and De-Bottlenecking Studies
- Incinerator and Fired Equipment Optimization
- Stack Testing
- Thermal Incinerator Optimization Program
- Sulfur Plant Simulation Using VMGSim™ (Steady-State and Dynamic Modeling)
- Bulk and Trace Ammonia Testing with on-site results (Destruction Efficiency Studies)
- Comprehensive Sulfur Product Analysis (Liquid and Solid)
- Source Testing and General Analytical Services
- SRU Post-Construction Management for Pre-Commissioning, Commissioning, Start-up Activities, and Performance Guarantee Verification
- Sulfur Plant Process Review - Ongoing Consulting/Support/Affiliation
- Tailored Sulfur Recovery Seminars for SRU Operators and Engineers

Why Choose SRE?

Since 1998, SRE has helped our clients cut costs, reduce emissions, and optimize performance of their Acid Gas Removal Units (AGRUs), Sour Water Strippers (SWSs) and Sulfur Recovery Units (SRUs)

Differences that set SRE apart from similar testing services include:

- **Rapid response time** – SRE’s testing equipment can be checked as baggage on any commercial airline allowing us to be on site within 24 hours in most cases.
- Superior Micro Gas Chromatography Technology enable SRE to **fully analyze a gas sample in less than 5 minutes** compared with up to 30-minute run times for GC technology used by other testing services. (Especially helpful during shutdowns, start-ups, or troubleshooting where time is crucial)
- Efficiencies allow us to complete work in a shorter time (fewer days on site) - with fewer personnel - creating **cost effectiveness** for our clients.
- **On-site trace ammonia analysis with immediate results** eliminate long waits for results and the need for – and expense of - return site visits.
- On-site delivery of results before SRE’s team leaves site enables immediate implementation of recommendations and action items.
- Cross-training of SRE personnel for multiple process units and associated tasks including testing, training instruction, process simulation and reporting.
- The same engineers who collect and analyze samples will also complete simulations and reporting providing continuity.
- Seminars delivered by the same engineers who conducted on-site testing guarantee site-specific and relevant training.

What our clients say:

Francois Jolibois - Valero - Jean Gaulin Refinery

“With more and more constraint related to shutdown duration, SRE helped us to minimize the time required to cool down sulfur plant and allow reactor entry which put less constraint on shutdown planning. SRE also always provided us good analytical result and reports with a quick turnover that helped us in the unit troubleshooting.”

Gavin Proudfoot - Suncor Energy

“Sulfur Recovery Engineering has provided legacy Petro Canada (now Suncor) with analytical expertise for routine performance monitoring, start-up and shutdown assistance and periodic troubleshooting for difficult problems that affected sulfur recovery efficiency.

One troubleshooting scenario that SRE assisted with was to determine that when the amine plant was operated at different lean amine temperatures - it affected the hydrocarbon content of the acid gas. This in turn affected sulfur recovery. A second troubleshooting scenario was to determine that a leaking valve was causing a diminished sulfur recovery and they proposed a solution to temporary address this. “

Todd G. Burns - AltaGas Ltd.

“I have had the opportunity over the last 10 years to work with John O’Connell and his team from Sulphur Recovery Engineering on two Modified Claus Sulphur Units located in Zama Lake Alberta and Rainbow Lake Alberta.

John is recognized both domestically as well as internationally as a predominant expert in the field of sulphur production and recovery, and I as a person who holds a leadership role have looked to John and SRE for technical knowledge and support during very difficult process situations.

John and his team using their unchallenged process knowledge and sound trouble shooting abilities have provided the correct actions and directions that my operations group has required in a reliable timely manner. All issues have concluded with positive outcomes resulting in minimized downtime and more efficient facility operation.

I have worked on several international projects utilizing Modified Claus Sulphur Units in the past several years in pre-commissioning and commissioning phases.

I have kept in correspondence with John and asked his opinion on issues that I would encounter during start up and operation of these new processing units and have always been given sound advice that I was able to utilize and apply to bring positive outcome to the projects I was working on.

In my opinion, John O’Connell is the premier sulphur authority that exists in the industry today. I would fully recommend Sulphur Recovery Engineering and John O’Connell to any organization in the sour gas industry that is having issues with their sulphur recovery unit without hesitation.”

Daniel Wood – Esso Fawley Refinery

“I felt that SRE was extremely professional in their approach to work, and I would not hesitate to choose them again to for sulphur unit performance reviews. SRE’s knowledge and subsequent recommendations for unit optimisation have been highly valuable given a recent turnaround, to ensure that we are operating to our fullest potential.”