

## Chemical and Refining Technology Services

Client: **Chevron Oronite Co**, Belle Chase, LA  
Trouble Shooting to resolve SRU sooting issues.

Client: **ExxonMobil** - Torrance Refinery, CA  
Participant as process expert in sulfur pit vent gas disposal project team.

Client: **Flint Hills Resources** - Pine Bend Refinery, MN  
Console Specific operator training SRU Furnace, Tail Gas unit, Amine Contactor and Regenerator.

Client: **Chevron** - El Segundo refinery, CA  
SRU reliability and expansion study.

Client: **Plains Exploration & Production**, Inglewood Gas Plant, CA  
Gas Plant Operator Training.

Client: **ExxonMobil** - Baytown Refinery, TX  
Participant as process expert in team to resolve flow issues in liquid sulfur transfer line.

Client: **OnQuest Engineering** - San Dimas, CA  
Trouble Shooting for Start Up of amine unit associated with LNG facility.

Client: **Chevron** - Hawaii Refinery, HI  
Process support for ammonia disposal project.  
Relief Devices - liquid fill analysis / audit.  
On site process engineering support for Flare Vapor Recovery project. Process configuration, energy optimization, waste minimization, improved method for preventing plume opacity, etc.

Client **ExxonMobil** - Joliet Refinery, IL  
Optimization Study, and development of Preventative Maintenance and Operations (PMO) plan for submission to EPA per consent decree.

Client **OMV Australia** - Perth  
Provided specialist expertise in the area of H<sub>2</sub>S removal and sulfur recovery . Led the evaluation process.

Client: **Shell Oil Products** - Puget Sound Refinery, WA  
Reconfiguration of plant for new operating conditions. Technical evaluation of critical equipment, P&ID review, etc.  
Participant in risk / reliability study.

Client: **Shell Oil Products** - Martinez Refinery, CA  
Participant in turn around shut down.

Client: **ExxonMobil** - Chalmette, LA  
Consent Decree related SRU Optimization Study.  
Participant in Risk Based Activity Selection process for SRU turnaround.  
Participant in operator training, start up, and plant performance evaluation. Review of start up / shut down and normal operating procedures.

Client: **BOC Gases** - Murray Hill, NJ

Technology commercialization: developed oxygen based sulfur recovery technology to a dominant market position, including sale of that technology to major oil companies including Shell, Texaco, Mobil, PDVSA, Exxon, Chevron and BP.

Client: (Confidential)

Completed a study to determine the economic and technical viability of distillate from petroleum coke via gasification and Fischer Tropsch. The study included power generation, and examined the economics of a project based on the coke production from a single refinery v. several refineries.

Client: **Tosco** (now ConocoPhillips) - Wilmington Refinery, CA

Trouble Shooting/Technical Service: Identified cause of high mercaptans in coker gas relative to sulfur dioxide reduction program, and means to improve operation of amine unit. Identified commercially viable options for mercaptan removal.

Client: **Global Energy Recovery Systems, Inc.** - Paramount, CA

Management/Marketing consultant to Global Energy for the market evaluation of recovered lead dioxide.

Client: **Ultramar, Inc.**(now Valero) - Wilmington, CA Refinery

Technical consultant to Ultramar regarding the expansion of existing sulfur plants.

Client: **TECNA** - Estudios Y Proyectos de Ingenieria S.A. - Buenos Aires, Argentina

Front End Design Study. Prepared the preliminary design for a turbo expander plant to be located in Argentina.