



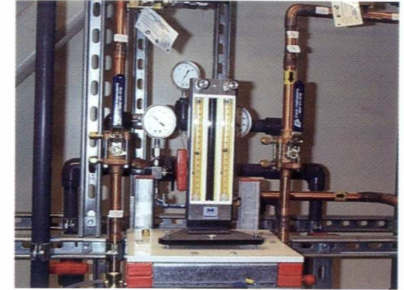
Project Profile:

Specialty Gas Delivery Systems

Owner: The World's Largest Semiconductor Manufacturer

Location: Aloha, Oregon

Since 1985, Evergreen Engineering has designed Specialty Gas Delivery Systems for three successive Semiconductor Manufacturing Fabs at this site. All projects were retrofits within operating facilities, and required detailed design to assure adherence to Building Codes, personnel safety, and construction impacts to production that were mitigated or eliminated.



Specialty Gases included:

- Boron Trichloride – BCL₃
- Halocarbon 116 – C₂F₆
- Halocarbon 14 – CF₄
- Halocarbon 23 – CHF₃
- Chlorine – CL₂
- Hydrogen Chloride – HCL
- Helium – HF
- Argon/Helium – Ar/He
- Nitrogen – N₂
- Oxygen – O₂
- Diborane – B₂H₆
- Silicon Tetrafluoride – SiCL₄
- Hydrogen – H₂
- Hydrogen Bromide - HBr
- Nitrous Oxide – N₂O
- Nitrogen Trifluoride – NF₃
- Ammonia – NH₃
- Sulfur Hexafluoride – SF₆
- Silane – SiH₄
- Dichlorosilane – SiH₂CL₂
- Trichlorosilane - TCS
- Argon – Ar
- Breathable Air

All projects involved the following Services:

- Code Analysis
- Allowable Quantity Study
- IDLH Calculation at Point of Discharge
- Preliminary and Detail Design
- Preliminary and Final Agency Reviews
- Services During Construction

Evergreen Engineering Performance

With our knack for retrofit projects, the client was especially pleased with our ability to work together as a team and to coordinate effectively and efficiently with their internal staff.