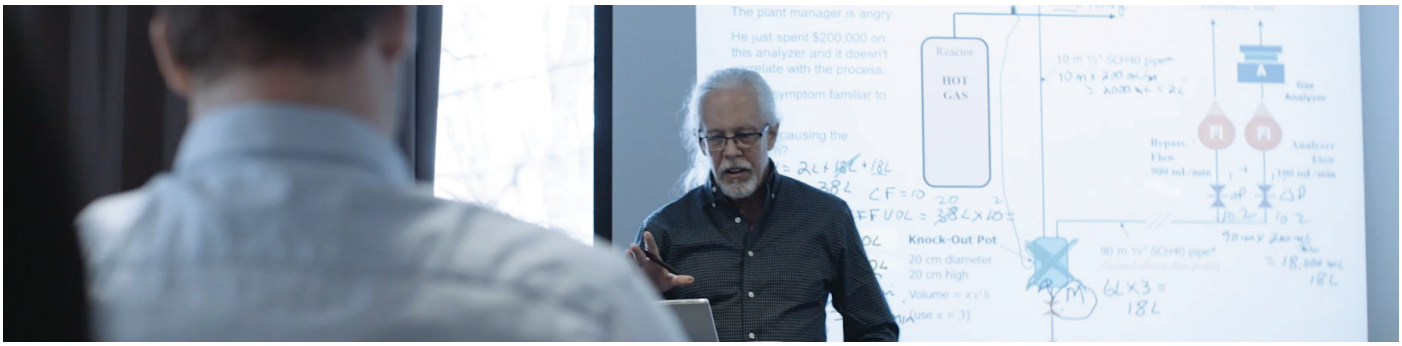

Process Analyzer Sampling System Training

May 12-16, 2025 | Stenungsund, Sweden

Optimize Your Sampling System

Swagelok® Process Analyzer Sampling System (PASS) training will teach you how to design and optimize process analyzer sampling systems, providing the sound design principles needed to prevent costly sampling system errors. Attendees will learn how to design and build an optimized process analyzer sampling system that delivers timely, accurate results.

Topics

In this course, you will learn:

- How a sampling system functions from the process line and tap through the transport lines and stream switching, sample conditioning, analyzer and disposal processes
- How to identify the root cause of issues related to system design
- Engineering principles, formulas and calculations that are the basis for sound sampling system design
- How to optimize your sampling system, prevent sampling system errors, and ensure accurate process analyzer readings

Course content is derived from *Industrial Sampling Systems*, a technical reference book authored by industry expert and consultant Tony Waters.

Target Audience

- System and design engineers, chemists, integrators, highly trained technicians, and anyone with an engineering background interested in understanding the fundamentals of designing, constructing, operating, or maintaining sampling systems
- Newer team members seeking basic training or experienced professionals who want a refresher

Language: English

When: May 12-16, 2025

Where: Stenungsbaden Yacht Club Stenungsund, Sweden

Fee: 24,000 SEK including course materials, lunch, coffee, and snacks

Instructor: Bert Laan, analytical engineer

Materials: *Industrial Sampling Systems* by Tony Waters and other course literature provided by Swagelok Sweden

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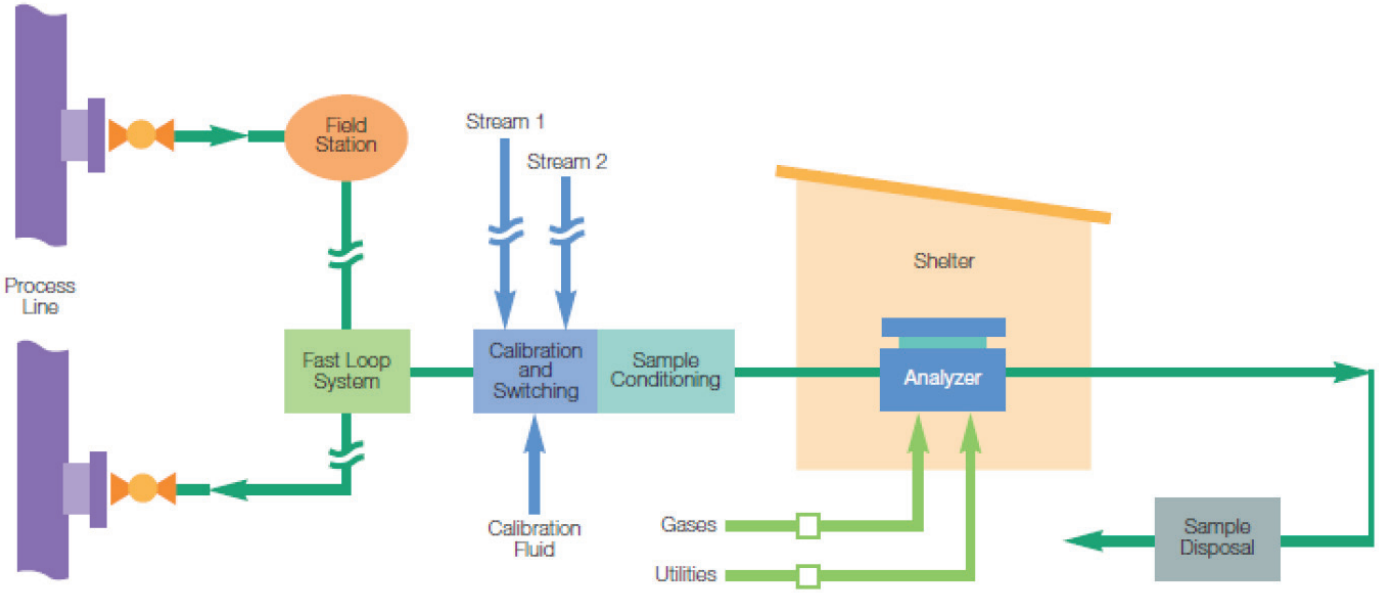

You Will Learn How To:

- Read and create sampling system schematics
- Design and build a sampling system
- Diagnose sample transport problems
- Evaluate and determine sample tap location
- Calculate and evaluate sample transport lag (time delay) of liquids and gasses
- Calculate pressure drop in a fast loop or return line
- Calculate gas and liquid flow rates
- Avoid or account for adsorption and permeation
- Predict vapor condensation
- Prevent or control phase preservation
- Vaporize a sample
- Avoid deadlegs in a sampling system
- Understand stream switching techniques

Course Content

Day 1: Basics

- Basic criteria and challenges
- Identifying and resolving problems through time delay in sampling

Day 2: Group Work and Excercises

- Sample preparation techniques
- Establishment of sampling points

Day 3: Efficient Sampling Concepts

- Phase conservation

Day 4: Extended Consideration of the Interpretation of Sampling Systems

- Advanced calculations

Day 5: Sample Stream and Calibration Selection

- Techniques for switching sample currents
- Presentation of group work and feedback from instructor
- Presentation of training certificates

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About Your Instructor

Bert Laan is an analyser engineer with 40+ years' experience in on-line process measurement in a variety of industries. He has worked for analyser manufacturers, engineering contractors and end users. His knowledge extends from design of lab sample take-off panels to complex sample systems and projects comprising many analyser houses. He has been involved from concept to fabrication, installation and commissioning of analyser systems, and has also supervised the maintenance of installed systems, from the arctic to the tropics and off-shore. He is currently working as consultant to Swagelok for advice on analyser system designs and in providing analyser systems training and maintenance.

CLICK HERE OR SCAN TO REGISTER

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Legal notice:
This course is hosted by Swagelok Sweden and open to all global customers and associates. All participants will receive a confirmation email upon registration.

Swagelok Sweden reserves the right to cancel the course if there are not enough participants. Participants will be informed of this on or before April 4, 2025. Swagelok Sweden is not liable for any costs that may arise related to travel and hotel bookings as a result of cancellation.

Registered participants who are unable to attend the course have the option of sending a colleague as a replacement. If you cancel later than 30 days before the course starts, 100% of the course fee will be charged.

The course fee of 24,000 SEK and any pre-booked group dinners will be invoiced on April 4, 2025 upon confirmation that enough participants have registered to carry out the course.

Accommodation:
Hotel costs are not included in the course fee. Participants are responsible for booking their own accommodation. We recommend booking Stenungsbaden Yacht Club where we have reserved a block of single rooms at a cost of 1552 SEK per night, including breakfast. Shortly after booking the course, you will be sent a link to book accommodation at Stenungsbaden if you wish.

Processing of personal data:
Personal information used to register for this course is collected in accordance with Article 13 GDPR paragraph 1. Our privacy policy can be found at https://stockholm.swagelok.com/en/about-us/data_protection

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