David H. Paul, Inc.

The World's **Leader in High-Tech Water Treatment** Training

PO Box 2590, Farmington, NM 87499 877-711-4347

Reverse Osmosis Monitoring & Troubleshooting

OLC118

Online Training

Information Packet

PO Box 2590, Farmington, NM 87499 877-711-4347

Costs

- $348 USD

  Price includes
  - Narration
  - Many illustrations
    - Video clips
    - Animations
    - Pictures
  - Interactive questions
  - Practice exams
  - Final exam
- Discounts may apply
  - Bundled discount for RO Certification
  - Multiple-course discount
  - Multiple-trainee discount
  - From time to time DHP runs special discounts

Length:

Twelve (12) hours

What you will earn:

David H. Paul, Inc Certificate upon successfully passing an exam based on the knowledge and proficiencies learned in this course

Description:

You will learn how to understand analytical instrument measurements and know the instrumentation needed for proper monitoring of a reverse osmosis or nanofiltration unit. You will learn the handheld/bench instruments needed to verify calibration of on-stream instruments and why each instrument on an RO unit is needed. You will learn how to calculate the average Net Driving Pressure (NDP) of an RO unit and the performance trends required for proper monitoring of an RO Unit You will learn how to record data from Probing and Profiling to help troubleshoot problems within an RO Unit.

Overview of Topics

- On-Stream Instruments
- Handheld/bench Instruments
- Daily Monitoring
- Weekly Trending
- Monitoring Software
- Profiling
- Probing
- Troubleshooting: Scaling
- Troubleshooting: Fouling

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- Troubleshooting: Chemical Attack
- Pretreatment Monitoring
- Chemical Cleaning Monitoring

Topic Breakdown

On-Stream Instruments

- Analytical Instrument measurements
- Proper Monitoring

Handheld/bench Instruments

- pH
- Conductivity
- Chlorine
- Sulfite
- SDI
- Silica ORP

Daily Monitoring

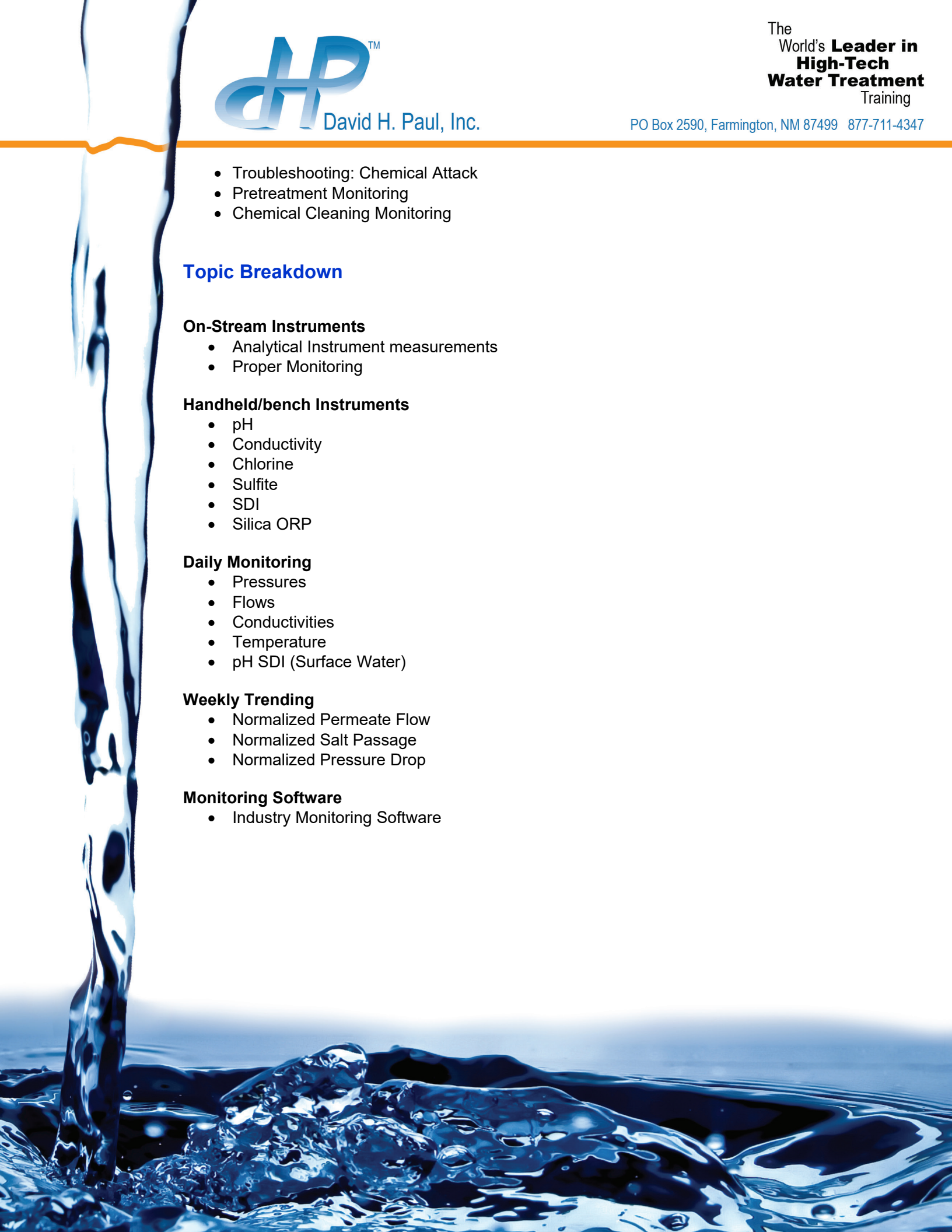
- Pressures
- Flows
- Conductivities
- Temperature
- pH SDI (Surface Water)

Weekly Trending

- Normalized Permeate Flow
- Normalized Salt Passage
- Normalized Pressure Drop

Monitoring Software

- Industry Monitoring Software



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Profiling

- Conductivity Measurements
- Profiling Sheets

Probing

- O-rings
- Cracked End Cap Adaptor
- Cracked Interconnector
- Glue Lines
- Probing Sheets

Troubleshooting: Scaling

- Normalize Permeate Flow
- Normalized Pressure Drop
- Normalized Salt Passage

Troubleshooting: Fouling

- Normalize Permeate Flow
- Normalized Pressure Drop
- Normalized Salt Passage

Troubleshooting: Chemical Attack

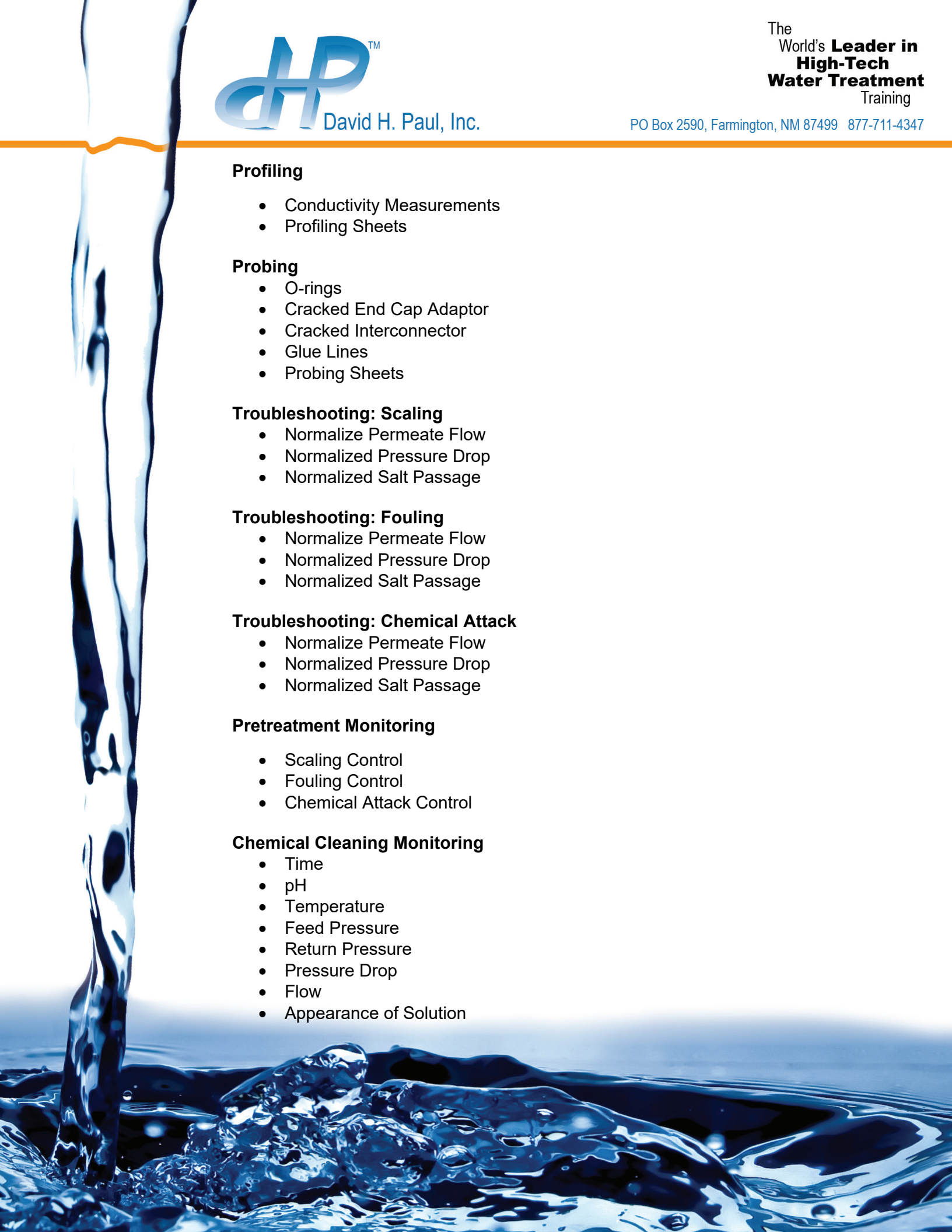
- Normalize Permeate Flow
- Normalized Pressure Drop
- Normalized Salt Passage

Pretreatment Monitoring

- Scaling Control
- Fouling Control
- Chemical Attack Control

Chemical Cleaning Monitoring

- Time
- pH
- Temperature
- Feed Pressure
- Return Pressure
- Pressure Drop
- Flow
- Appearance of Solution



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DHP's Training Methodology

DHP uses the consulting services of a Doctor of Education from Columbia University (Dr. Linda Paul) in the development of its online training courses. DHP's training methodology includes:

- Short, interesting, interactive lecture sessions using:
  - Lecture slides
  - Video clips
  - Animations
- Pop quizzes to enhance understanding and retention
- Practice exams

Who Should Take This Course

Everyone who works with, or will work with, the reverse osmosis and pretreatment technologies in operating plants needs to know the tips, techniques and proficiencies taught in this online training, including:

- Operators
- Maintenance personnel
- I & C Technicians
- Supervisors/Managers
- Engineers
- Original Equipment Manufacturers
- Service technicians
- More

What You'll Receive

- 12 hours of interesting, easy-to-understand training
- David H. Paul, Inc Certificate upon successfully passing an exam based on the knowledge and proficiencies learned in this course