

# WESTAR Council

## Monitoring Compliance Testing & Source Test Observation

July 22-26, 2013

Washington State  
Department of Ecology  
300 Desmond Drive SE  
Lacey, WA  
360-407-6000



## REGISTRATION INSTRUCTIONS:

### First Time Users ([www.APTI-Learn.net](http://www.APTI-Learn.net)):

1. Click on the “First time user? Click here to register” link on the left side of the webpage;
2. First screen requires: 1) work email address; 2) first and last names; 3) password; and 4) security question;
3. Second screen asks about affiliation/agency – click \***WESTAR** (Western States Air Resources Council) **(PLEASE DO NOT ENTER OTHER)** ;
4. At this point a drop-down menu will appear that lists 15 western states, click the state in which your agency resides **(PLEASE DO NOT ENTER OTHER)**;
5. Once you have selected the state another drop-down menu will appear which asks you to identify the **SPECIFIC AGENCY** that you work for **(PLEASE DO NOT ENTER OTHER)**;
6. Third screen includes a list of job functions and other profile information. You can click as many (or few) job functions as appropriate. Once you have completed this third screen, you are done setting up your profile.

### After completing the profile:

7. Click the “Home” tab in the upper left hand corner;
8. The Home Page includes the 2013 Training Calendar below the “Welcome” and “APTI LMS Training Videos”;
9. Scroll down the 2013 Training Calendar until you see training course that you are interested in registering for;
10. On the right side you will see a “register” link;
11. Click the “register” link, and voila you are registered (be patient it takes a few seconds for the confirmation note to pop-up);
12. You will receive an automatically generated email saying that you have been placed on a waiting list (this is so unapproved attendees can be weeded out).
13. Once I have approved you, you will receive a second email saying you are enrolled.

### Previously Registered Users ([www.APTI-Learn.net](http://www.APTI-Learn.net)):

1. Enter email address and password in appropriate spaces;
2. Go to step 7 (above) and follow directions.

*IF YOU NEED ASSISTANCE REGISTERING FOR A COURSE PLEASE CONTACT: JEFF GABLER (503) 478-4955 or JGABLER@WESTAR.ORG*

### REGISTRATION DEADLINE:

Friday, June 21, 2013

## MONDAY, JULY 22, 2013

8:30	am	Welcome & Introduction
9:00	am	Pre-Test
9:45	am	Driving Force for Stack Testing/Sources of Methods/Defining HAPs, & EPA's National Stack Testing Strategy and Guidance
10:30	am	Introduction to Stack Testing & Gas Physics <ul style="list-style-type: none"><li>Gas Physics</li></ul>
11:15	am	Boyle/Charles Laws <ul style="list-style-type: none"><li>Correction to Standard Temperature and Pressure</li></ul>
12:00	noon	Lunch (on own)
1:15	pm	Stack Testing Basics: Overview of Federal Reference Methods 1-5 (Video Presentation) <ul style="list-style-type: none"><li>Federal Reference Methods 1-2</li><li>Classroom Demonstration with Method 5 Sampling Training<ul style="list-style-type: none"><li>Sampling Point Locations (On-line IsoCal Spreadsheet)</li><li>Stack Gas Velocity (On-line IsoCal Spreadsheet)</li></ul></li></ul>
3:00	pm	Break
3:15	pm	Stack Testing Basics (cont'd) <ul style="list-style-type: none"><li>Federal Reference Methods 3-4<ul style="list-style-type: none"><li>Stack Gas Molecular Weight (On-line IsoCal Spreadsheet)</li><li>Stack Gas Moisture (On-line IsoCal Spreadsheet)</li><li>Sample Train Configuration</li><li>Agency Observation Checklist</li></ul></li></ul>
5:00	pm	Review of Day 1/Homework Problems/Adjourn for Day

## TUESDAY, JULY 23, 2013

8:00	am	Homework Review
8:15	am	Federal Reference Method 5 Equations and Setting Isokinetic Sampling Rate
10:00	am	Break
10:15	am	The Source Test
10:45	am	Inspector Tool Kit
11:15	am	FRM 201/201A for PM-10

12:00	noon	FRM 202 Condensables and Update
1:15	pm	Lunch (on own)
2:00	pm	Role of Agency Inspector
2:20	pm	Laboratory Exercises <ul style="list-style-type: none"><li>Station #1: Nozzle Diameter</li><li>Station #2: DGM "V"</li><li>Station #3: Orifice Meter "<math>\Delta H@</math>"</li><li>Station #4: Stack Gas <math>V_s</math> &amp; <math>Q_s</math></li><li>Station #5: Calibration of Type S Pitot Tube</li><li>Station #6: Stack Gas Moisture</li><li>Station #7: Pitot Tube Inspection</li><li>Station #8: FRM 5 Sampling Train</li><li>Station #9: Isokinetic Rate Equation Calc.</li><li>Station #10: FRM 1 Traverse Point Deter.</li></ul>
4:45	pm	Review of Day 2/Homework
5:00	pm	Adjourn for Day

## WEDNESDAY, JULY 24, 2013

8:00	am	Homework Review/Laboratory Exercises Review
8:30	am	Laboratory Exercises <ul style="list-style-type: none"><li>Station #1: Nozzle Diameter</li><li>Station #2: DGM "V"</li><li>Station #3: Orifice Meter "<math>\Delta H@</math>"</li><li>Station #4: Stack Gas <math>V_s</math> &amp; <math>Q_s</math></li><li>Station #5: Calibration of Type S Pitot Tube</li><li>Station #6: Stack Gas Moisture</li><li>Station #7: Pitot Tube Inspection</li><li>Station #8: FRM 5 Sampling Train</li><li>Station #9: Isokinetic Rate Equation Calc.</li><li>Station #10: FRM 1 Traverse Point Deter.</li></ul>
12:00	noon	Working Lunch (FRM 5 Setting Isokinetic Rate)
1:15	pm	Laboratory Exercises <ul style="list-style-type: none"><li>Station #1: Nozzle Diameter</li></ul>

- Station #2: DGM “√”
- Station #3: Orifice Meter “ΔH@”
- Station #4: Stack Gas  $V_s$  &  $Q_s$
- Station #5: Calibration of Type S Pitot Tube
- Station #6: Stack Gas Moisture
- Station #7: Pitot Tube Inspection
- Station #8: FRM 5 Sampling Train
- Station #9: Isokinetic Rate Equation Calc.
- Station #10: FRM 1 Traverse Point Deter.

4:30 pm Review of Laboratory Exercises/Group Presentations

4:45 pm Review of Day 3/Homework

5:00 pm Adjourn for Day

## THURSDAY, JULY 25, 2013

8:00 am Homework Review

8:30 am Laboratory Exercises

- Station #1: Nozzle Diameter
- Station #2: DGM “√”
- Station #3: Orifice Meter “ΔH@”
- Station #4: Stack Gas  $V_s$  &  $Q_s$
- Station #5: Calibration of Type S Pitot Tube
- Station #6: Stack Gas Moisture
- Station #7: Pitot Tube Inspection
- Station #8: FRM 5 Sampling Train
- Station #9: Isokinetic Rate Equation Calc.
- Station #10: FRM 1 Traverse Point Deter.

10:00 am Introduction to VOCs/Selecting VOC Sampling & Analytical Methods (State of Pennsylvania Selection Process)

Reporting VOC Emissions (in ppms? In #/Hr.? etc.) and Calculations (i.e., “As Carbon?”; “As VOCs?”; “As Organics?”; As Propane?”)

Midwest Scaling Protocol

10:25 am Federal Reference Method 18 and Recent Modifications (Gaseous Organic Compounds: VOC)

11:15 am Federal Reference Method 25 for VOCs (Classroom Demonstration of Sampling Train)

- Sampling Techniques
- Analytical Methodology

12:15 noon Lunch (on own)

1:30 pm Federal Reference Method 25A and B (cont’d)

- Modifications
- Low Level Concentrations
- Audit Program

2:15 pm South Coast Air Quality Management District (SCAQMD) Method 25.3 for VOC with Concentration 1-50ppm (EPA’s CTM-035)

3:00 pm Break

3:15 pm SW-846 Method 0010 (Semi-Volatile Organic Compounds: Classroom Demonstration of Sampling Train)

- Sampling Train Design
- Sampling Techniques
- Analytical Methodology
- Agency Observer Checklist

4:15 pm SW-846 Method 0030/0031 (Volatile Organic Compounds: Classroom Demonstration of Sampling Train)

- Sampling Train Design
- Sampling & Analytical Techniques

5:00 pm Review of Day 4/Homework

## FRIDAY, JULY 26, 2013

8:00 am Homework Review

8:15 am Federal Reference Method 23 (Dioxins/Furans/PCB and PCB Congeners)

- Sampling Train Design
- Sampling Techniques
- Analytical Methodology
- Agency Observer Checklist

9:00 am Federal Reference Method 29, Federal Reference Method 306, and SW-846 Method 0060 (Heavy Metals), and Federal Reference Method 12 (**Classroom Demonstration of Sampling Train**)

		<ul style="list-style-type: none"> <li>• Sampling Train Design</li> <li>• Sampling Techniques</li> <li>• Analytical Methodology</li> <li>• Agency Observer Checklist</li> </ul>
9:45	am	SW-846 Method 0061 (Cr <sup>+6</sup> ) <ul style="list-style-type: none"> <li>• Sampling Train Design</li> <li>• Sampling Techniques</li> <li>• Analytical Methodology</li> <li>• Agency Observer Checklist</li> </ul>
10:30	am	Federal Reference Method 26/SW-846 Methods 0050/0051 (HCl/Cl <sub>2</sub> ) <ul style="list-style-type: none"> <li>• Sampling Train Design</li> <li>• Sampling Techniques</li> <li>• Analytical Methodology</li> <li>• Agency Observer Checklist</li> </ul>
11:15	am	Federal Reference Method 6C/7E/3A and 20 Applications at Gas Turbines
12:00	noon	Stack Testing Special Topics <ul style="list-style-type: none"> <li>• High Moisture Stacks</li> <li>• High Pressure Stacks</li> <li>• High VOC Concentration Stacks/Molecular Weight Determination</li> </ul>
12:30	noon	Final Exam/Course Evaluation/Adjourn

## About The Training Course

WESTAR's Training Center will host this training course for state, local and tribal air quality professional staff working, or planning to work, in source testing. Since the passage of the Clean Air Act Amendments of 1990 (CAAA of 1990), industrial sources have had to quantitate their emissions of Title III hazardous air pollutants (HAPs) in order to demonstrate compliance with regulated emissions. To insure that the source test methods utilized to demonstrate compliance are performed according to EPA guidelines, both agency and industrial personnel will be required to observe stack tests to document that compliance with the methodology is being achieved. This will mean that an observer must be intimately familiar with over 30 or more stack test methods, each one with its own particular operation.

### Major topics

- Procedures and checklists to use when observing and certifying compliance source test methods
- Stack test basics [Federal Reference Methods (FRM) 1,2,3 and 4], FRM 5 for particulate matter, FRMs 6,7, and 8 for SO<sub>2</sub>, NO<sub>x</sub>, and sulfuric acid
- Information and guidance associated with EPA stack test methodologies for characterizing Title III HAPs from industrial sources.
- Standardized stack test methodology for sampling and analysis of HAPs as outlined in EPA's SW-846 Test Methods for Evaluating Solid Waste.
- EPA's stack test monitoring programs associated with PM<sub>10</sub> (FRM 201/201A) and condensable particulate (FRM 202) monitoring
- Specific observer checklist will be demonstrated during the presentation for each test methodology as part of the source test observation package

**SPACE LIMITATION:** Registration is limited to 30 attendees. Air quality staff from the fifteen western states receive registration preference.

### Registration Fees:

There are no registration fees for state, local or tribal air quality agency staff. For federal agency staff a \$500 registration fee will be charged.

## TRAINING LOCATION

Washington State  
Department of Ecology  
300 Desmond Drive SE  
Lacey, WA  
360-407-6000

## HOTEL INFORMATION

WESTAR has not made hotel arrangements. If lodging accommodations are necessary, attendees/speakers are required to make their own reservations. Please check with the hotel for the availability of governmental rates; most hotels offer these rates.

### **Quality Inn & Suites – Lacey**

120 College Street SE  
Lacey, WA 98503  
Phone: (360) 493-1991

### **Comfort Inn – Lacey**

4700 Park Center Avenue NE  
Lacey, WA 98516  
Phone: (360) 456-6300

### **La Quinta Inn: Olympia - Lacey**

4704 Park Center Ave Northeast  
Lacey, WA 98516  
Phone: (360) 412-1200

### **Ramada – Olympia**

4520 Martin Way E  
Olympia, WA 98516  
Phone: (360) 459-8866

### **Holiday Inn - Lacey**

4460 3<sup>rd</sup> Avenue SE  
Lacey, WA 98503  
Phone: (360) 491-7985